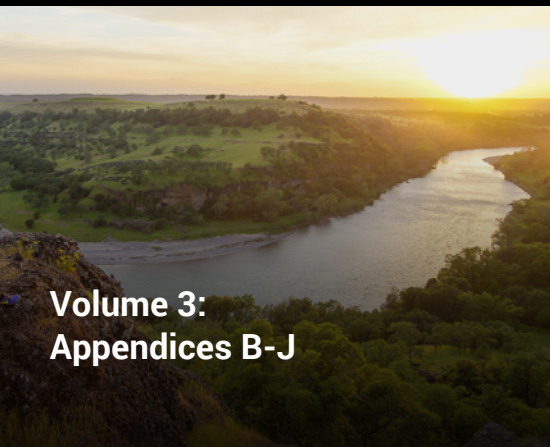




U.S. Department of the Interior
Bureau of Land Management

Northwest California Integrated Proposed Resource Management Plan and Final Environmental Impact Statement



Volume 3:
Appendices B-J



June 2024

Cover Photos (clockwise from top): Yuki Wilderness,
Sacramento River Bend Outstanding Natural Area, Ma-le'l
Dunes, Sacramento River Bend

Photo Credit: BLM

TABLE OF CONTENTS

B	Land Use Plan Decisions by Alternative
C	Approach to the Environmental Analysis
D	Affected Environment and Environmental Consequences
E	Laws, Regulations, Policy, and Relevant Planning Documents
F	Best Management Practices
G	Areas of Critical Environmental Concern
H	Recreation and Visitor Services Management Framework for Special and Extensive Recreation Management Areas
I	Wild and Scenic River Suitability Report
J	Land Tenure

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Appendix B

Land Use Plan Decisions by Alternative

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Appendix B. Land Use Plan Decisions by Alternative

B.I MANAGEMENT GUIDANCE FOR ALTERNATIVES A, B, C, AND D

Table B-I is a description of all decisions proposed for each alternative, including goals and objectives. All decisions in **Table B-I** are land use plan-level decisions.

Stipulation decisions (such as applying no surface occupancy) apply to mineral leasing and development of federal mineral estate underlying BLM-administered surface lands, private lands, state trust lands, and other lands.

Acreages for alternatives in this chapter are calculated based on current information and may be adjusted in the future through RMP maintenance as conditions warrant. The BLM used best available data in illustrating and quantifying the alternatives, but on-the-ground conditions will take precedence in determining details like vegetation type, riparian management areas, and the WUI when implementing the plan.

B.I.1 How to Read Table B-I

The following describes how **Table B-I** is written and formatted to show the land use plan decisions proposed for each alternative.

- Per Appendix C of the BLM's Land Use Planning Handbook (H-1601-1), land use plan decisions are broadscale decisions that guide future land management direction and subsequent site-specific implementation decisions. Land use plan decisions fall into two categories, which establish the base structure for **Table B-I**: desired outcomes (goals and objectives), and allocations for allowable resource uses and management direction to achieve the outcomes.
 - *Goals* are broad statements of desired outcomes and management direction that usually are not quantifiable.
 - *Objectives* identify specific desired outcomes for resources. Objectives may be quantifiable and measurable and may have established time frames for achievement, as appropriate.
 - *Management direction* identifies actions to attain desired outcomes (objectives), including program constraints, general management practices, and support actions. These are measures that will be applied to all subsequent relevant implementation activities to achieve management objectives.
 - *Allocations for allowable resource use* identify uses, or allocations, that are allowable, restricted, or prohibited on BLM-administered lands and mineral estate.
 - *Designations* identify geographic areas of BLM-administered land where management is directed toward one or more priority resource values or uses. They include two types:
 - *Administrative designations*, which are identified in the BLM's or DOI's program-specific policies or regulations, are established through the BLM's land use planning process to achieve RMP objectives.

- *Nondiscretionary designations* are those that can only be established by the President, Congress, or the Secretary of the Interior pursuant to specific legal authority.
- In general, only those resources and resource uses that have been identified as planning issues have notable differences between the alternatives.
- Management direction that is applicable to all alternatives is shown in one cell across a row; this direction would be implemented regardless of which alternative is ultimately selected.
- Management direction that is applicable to more than one—but not all—alternatives is indicated by either combining cells for the same alternatives, or by denoting those objectives or management direction as the “same as under Alternative B,” for example.
- “No similar management action” denotes that the agency does not currently (under Alternative A) or would not (under other alternatives) include management direction pertaining to the resources and resource uses described in other alternatives.
- Implementation-level management actions are denoted by a “(**)”.

B.2 ALTERNATIVES MATRIX MANAGEMENT ACTIONS HYPERLINKS

Use the hyperlinks below to access the applicable section of **Table B-1**.

Air and Atmospheric Values	Gilham Butte ACEC
Climate Change	Hawes Corner ACEC
Soils	Laqua Butte ACEC
Water Resources	Lacks Creek ACEC
Riparian Management Area Management Actions	Ma-le'l Dunes ACEC
Vegetation (including Special Status Species and Invasive, Nonnative Species)	Red Mountain RNA/ACEC
General Vegetation	Sacramento Island ACEC
Other	Sacramento River Bend ACEC
Wildlife (including Special Status Species and Invasive, Nonnative Species)	Shasta and Klamath River Canyon ACEC
Fish (including Special Status Species and Invasive, Nonnative Aquatic Species)	South Fork Eel River RNA/ACEC
Coastal Resources and Management	Swasey Drive ACEC
Wildland Fire Management	Proposed ACECs
Cultural Resources	Eden Valley ACEC
Paleontological Resources	Grass Valley Creek ACEC
Visual Resources	Upper and Lower Clear Creek ACEC
Cave and Karst	Swasey Drive Clear Creek Greenway ACEC
Forestry	Sheep Rock ACEC
Lands and Realty – Land Tenure	Black Mountain ACEC
Land and Realty – Use Authorizations	Upper Klamath Bench ACEC
Renewable Energy	Upper Mattole ACEC
Minerals - Leasable Minerals (Including Fluid and Nonenergy Minerals)	Eden Creek ACEC
Minerals - Locatable Minerals	Beegum Creek Gorge ACEC
Minerals – Mineral Materials	North Fork Eel ACEC
Recreation and Visitor Services	Willis Ridge ACEC
Areas Outside of Recreation Management Area	South Spit ACEC
Special and Extensive Recreation Management Areas (SRMAs and ERMAs)	Corning Vernal Pools ACEC
Other Recreation Management	North Table Mountain ACEC
Travel and Transportation Management	National Scenic and Historic Trails
Livestock and Grazing	Wild and Scenic Rivers
Areas of Critical Environmental Concern	Wilderness Areas, Wilderness Study Areas, and Lands with Wilderness Characteristic Wilderness
Existing ACECs	Section 603 Wilderness Study Areas
Baker Cypress ACEC	Section 202 Wilderness Study Areas
Butte Creek ACEC	Lands with Wilderness Characteristics Managed as Priority
Deer Creek ACEC	Lands with Wilderness Characteristics Managed to Minimize Impact
Elder Creek ACEC	Socioeconomics and Environmental Justice
Forks of Butte Creek ACEC	Tribal Interests
	Public Health and Safety/Hazardous Materials
	Education and Interpretation

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Table B-I
Land Use Plan Decisions by Alternative

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
1	Air and Atmospheric Values			
2	Goals and Objectives: <ul style="list-style-type: none">Protect air quality and related resource values within the planning area. Coordinate and cooperate with the State of California, other federal land management agencies, Tribes, and adjacent landowners to resolve air quality issues.BLM will ensure that agency operations and facilities comply with applicable federal, Tribal, state, and local air quality regulations, as required by the Clean Air Act (CAA).Approve only those activities and uses that meet General Federal Conformity requirements under 40 CFR 93 and so conform to the Clean Air Act and applicable State and Tribal Implementation Plans. Work with CAA delegated agencies to protect air quality, visibility, and other related values in mandatory federal Class I and Class II Sensitive areas managed by BLM.Minimize the effects of smoke from BLM Lands and operations on human health, communities, recreation, and tourism to the extent practicable and appropriately mitigate all prescribed fire management activities.			
3	Management Direction: Arcata RMP 1992 The Clean Air Act, as amended in 1990, requires federal agencies to comply with all federal, state and local air pollution requirements (Section 118). BLM must secure permits from state and local agencies for agency projects affecting air quality.	Management Direction: <ul style="list-style-type: none">Minimize air quality degradation by promoting compliance with applicable federal, state, and local regulations, including all State Implementation Plan regulations, on Public Land.Ground-disturbing activities on soils containing asbestos (e.g., serpentine soils) would conform to current guidance provided by the California Air Resources Board.		
4	Management Direction: Arcata RMP Forest Plan Amendment 1995 Comply with the California State Implementation Plan (SIP) for achievement of NAAQS for criteria pollutants, prevention of significant deterioration goals for the protection of air quality and visibility in wilderness areas and national parks, and local Air Pollution Control Districts' rules and regulations. BLM must secure permits from responsible agencies for projects impacting air quality. Specific decisions will not be made in the selected plan amendment. Evaluate management actions potentially affecting air quality, to ensure conformance with the State Implementation Plan, prevention of significant deterioration goals, and local programs such as smoke management requirements. Minimize air quality degradation through strict compliance with federal, state, and local regulations and implementations plans. Perform additional management activities including monitoring, analysis, and impact mitigation on a project-specific basis, to assure compliance with applicable regulations and implementation plans.	Management Direction: <ul style="list-style-type: none">All BLM-permitted actions with the potential to emit any criteria-pollutant in an amount that exceeds the de minimis thresholds presented in 40 CFR 93.152(b)(1), will perform a detailed air quality analysis, such as dispersion modeling, to demonstrate that compliance with the National Ambient Air Quality Standards (NAAQS) would be maintained and implement mitigation to reduce emissions to a level that meets NAAQS as necessary. A Federal Conformity Determination is required for any proposed action located in a NAAQS nonattainment area that has potential for criteria pollutant emissions that exceed the de minimis thresholds. A representative emission inventory will be prepared and evaluated for each action proposed for Public Lands. The inventory should estimate direct and indirect criteria pollutant, Hazardous Air Pollutant (HAP), and greenhouse gas (GHG) emissions related to the proposed action. The need for further analysis and mitigation will be determined on a case-by-case basis after evaluation of the initial inventory.Where BLM-permitted activities have the potential to impact air quality in or near Class I and Class II Sensitive areas, sensitive receptors, urban interface areas, National Landscape Conservation System units, and in or near areas that contains sensitive resources in the planning area, analysis and mitigation will be considered on a case-by-case basis.Planned or permitted surface-disturbing or smoke-producing activities would minimize impacts to sensitive receptors (such as schools, hospitals, residences, and campgrounds) such that construction noise or smoke would not substantively affect these receptors or otherwise create a public nuisance. This could include, wherever practicable, maintaining adequate distance and constructing during daytime hours to avoid noise disturbance and considering prevailing winds to avoid affecting air quality at these receptors.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
5	Management Direction: Redding RMP 1993 Minimize air quality degradation through strict compliance with federal, state, and local regulations and implementations plans. Perform additional management activities including monitoring, analysis, and impact mitigation on a project-specific basis, to assure compliance with applicable regulations and implementation plans.	Management Direction: <ul style="list-style-type: none"> All surface disturbance work should meet applicable fugitive dust control requirements of the air district with jurisdiction over the project area. In VRM Class I and II areas , permitted activities or BLM-maintained road surfaces and disturbed areas should be stabilized to minimize detrimental effects of dust. In locations where no local regulations apply, dust abatement methods will be decided on a case-by-case basis and should include (but not be limited to) methods such as: stabilizing open storage piles, installing wind fences, limiting vehicle speed to 15 mph, and stabilizing disturbed areas by covering and/or applying water or chemical/organic dust palliative. This applies to both inactive and active sites. Require project specific stipulations, design features, and/or mitigation measures for rights-of-way requiring new ground-disturbing activities to minimize fugitive dust resulting from travel along unpaved roads. Proposals that introduce new pollutant effects within the National Historic Trails or wild sections of designated Wild and Scenic River corridors would be authorized only if they do not cause more than short-term, minimal adverse impacts on air quality. The BLM would collaborate with California Department of Forestry and Fire Protection (CAL FIRE) and other applicable agencies in air quality monitoring when necessary to assess smoke impacts from wildfire and prescribed fire. BLM would also work with these agencies to inform the public regarding potential health hazards related to smoke. When using prescribed fire, the BLM would balance smaller planned short duration air quality impacts and the potential for much larger and more adverse impacts from unplanned fires. Coordinate with the California Air Resources Board and any applicable California Air Pollution Control Districts and Air Quality Management Districts in planning prescribed burns to ensure that conditions are favorable to minimize air quality impacts to residences and sensitive receptors such as hospitals or schools. If technically and economically feasible, alternative prescribed burning methods that reduce emissions would be utilized (e.g., air curtain burners or other similar devices as they are developed). Apply BMPs included in Appendix F for internal BLM projects and BLM permitted activities to minimize impacts on air quality. 		
6	Climate Change			
7	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none"> Allow for use of latest technology and information to employ innovative treatments to promote the adaptive capacity of ecosystems through increased resilience, diversity and connectivity. Monitor effects of treatments and adapt as necessary to continue to develop the most effective methods for ecosystem management. Consider the vulnerability of the landscapes or resources as well as their adaptive capacity when prioritizing and conducting future planning or implementation level decisions, Prioritize management actions and implementation level decisions that direct landscapes into more resilient forms, rather than actions and decisions that resist the effects of climate change. Actions that resist the effects of climate change should only be used in well-informed, specific situations to protect valuable resources where there is no other option. These concepts are further described in the Resist-Accept-Direct framework. Manage resources to provide for carbon sequestration where appropriate. Seek to reduce the climate impact of BLM land management by reducing GHG emissions from BLM operations and third party and proposed actions, and by increasing the carbon sequestration and storage potential of Public Lands. Coastal Areas: <ul style="list-style-type: none"> Manage coastal dunes in a manner that provides resiliency to rising sea levels. Manage natural dune formations to prevent degradation from unauthorized OHV use, and alteration from nonnative and invasive species. Where suitable, maximize opportunities for conservation and restoration of soft ecological barriers such as tidal wetlands where such habitats are the highest and best use relative to trends in sea level rise. Forests and other upland vegetation communities: <ul style="list-style-type: none"> Manage forests and other upland vegetation communities to promote resiliency to disturbances (e.g., pathogens, drought, precipitation events, fires). Following wildfire events, allow vegetation communities to shift; however, strategically promote reforestation in specific areas to best maintain ecosystem service and forest health. Riparian Resources: <ul style="list-style-type: none"> Ensure that all culverts or other road and trail crossings are constructed to handle more extreme precipitation events. Re-connect waterways with their historic floodplains where practicable and where appropriate to address stream stability and proper functioning condition. Maintain adequate canopy cover to shade streams and help maintain cold water. Cultural Resources: <ul style="list-style-type: none"> Prioritize for Tribal consultation important or unique cultural sites in areas affected by climate change. Such consultation may result in data recovery or other mitigative actions. This would include cultural sites affected by corresponding BLM management (e.g., fire suppression, vegetation treatments). Paleontological Resources: <ul style="list-style-type: none"> Prioritize all PFYC 4 and 5 areas in areas affected by climate change for BLM survey and, if appropriate, mitigation. Wildlife Resources: <ul style="list-style-type: none"> Collaborate with federal and state agencies, Tribes, and universities as appropriate to assess the geographic patterns of species migrations and develop a framework for land acquisitions to facilitate species migrations and habitat conservation in response to climate change and population changes due to climate and socioeconomic factors. Incorporate potential climate change and consequent impacts on species migration and habitats when considering land tenure adjustments, land use authorizations, and other implementation level projects. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
8	Management Direction: No similar management action.	Management Direction: General: <ul style="list-style-type: none"> Apply BMPs as appropriate to BLM-authorized activities to reduce emissions of GHGs. Prioritize enhanced energy efficiency, use of lower GHG-emitting technologies or renewable energy, planning for carbon capture and sequestration, and the capture or beneficial use of fugitive methane emissions. Contribute to larger, regional monitoring efforts (e.g., AIM program). Coordinate with other agencies and Tribes to identify climate-vulnerable vegetation communities and to adaptively manage those communities to maximize climate resiliency. This will include use of EcoAdapt Vulnerability Assessment Summaries and other tools to plan that management. Where practicable, reduce or eliminate uses that degrade the natural systems that protect the human environment from climate change. Carbon sequestration: <ul style="list-style-type: none"> Where appropriate and consistent with FLPMA and other applicable regulatory requirements, manage BLM lands to provide for carbon sequestration. This would include, but is not limited to, providing for the long-term health and productivity of vegetation communities within the planning area. Where practicable, reduce or eliminate uses that diminish the vegetation's or the soil's ability to maintain carbon at its maximum level. Where practicable, maintain, promote, and restore late successional forests and perennial native grasslands for carbon sequestration. Collaborate with academic researchers in research related to carbon dynamics on the landscape. Consider climatic shifts in vegetation when planning restoration plantings. Where possible, acquire land as appropriate to manage for coastal resiliency. This could include, but is not limited to, lands that provide for expansion of tidal wetland areas and areas of dune migration and tracts behind at-risk levees. Coordinate with the California Coastal National Monument management in the identification, acquisition, and management of such lands. Monitor habitat conditions and reassess seasonal restrictions for wildlife, water quality, or other resource values based on climate change. Reevaluate existing seasonal closures based on adaptive management to reflect changing climatic conditions. Use quantitative GHG inventories to identify alternatives with lower climate impacts for proposed actions and implement them when feasible. 		
		Management Direction: Management actions that promote habitat connectivity will be given priority consideration.	Management Direction: Management actions that promote active vegetation management to promote ecosystem resiliency to large disturbances (e.g., fire, drought, rain events) will be given priority consideration.	Management Direction: Management actions that promote habitat connectivity and that promote active vegetation management to promote ecosystem resiliency to large disturbances (e.g., fire, drought, rain events) will be given priority consideration.
		Management Direction: Manage coastal resources with consideration of rising sea levels with a priority on the protection for snowy plovers and other nesting birds and establishment of non-developed areas with sufficient land and without vehicles that allow for the gradual retreat of plant and animal communities as sea levels rise.	Management Direction: Manage coastal resources with consideration of rising sea levels to provide for protection of snowy plovers and other species as well as recreational access to those coastal areas for either motorized or non-motorized recreation, as consistent with resource objectives.	Management Direction: Manage coastal resources with consideration of rising sea levels to prioritize protection of (a) listed species such as snowy plovers and beach layia, b) the reformative and recolonization processes of listed animal habitat and plant communities along impacted shorelines, and c) accommodating recreational non-motorized or motorized access consistent with a and b, above.
		Management Direction: Establish, secure and conserve protected areas ("refugia"), to anchor conservation and help to ensure that species, populations, and meta-populations will persist in the face of climate change.	Management Direction: No similar management action.	Management Direction: Same as Alternative B.
		Management Direction: Emphasize terrestrial and aquatic connectivity with surrounding lands to allow species to move under climate stressed habitats.	Management Direction: No similar management action.	Management Direction: Same as Alternative B.
		Management Direction: As relevant, incorporate analysis of impacts to the Essential Connectivity Corridors or other landscape connectivity models into future planning documents and management actions such as land use authorizations.	Management Direction: No similar management action.	Management Direction: As relevant, incorporate analysis of impacts to the Essential Connectivity Corridors or other landscape connectivity models into future planning documents and management actions such as land use, permits, authorizations and future planning documents.
		Management Direction: Use land tenure adjustment to increase the functional size of areas managed to provide for corridors for genetic flow and climate-induced species shifts.	Management Direction: No similar management action.	Management Direction: Same as Alternative B

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
8 (cont.)	(see above)	Management Direction: No similar management action.	Management Direction: Conduct fuels reduction and forest health treatments to foster fire resiliency.	Management Direction: Same as Alternative C.
		Management Direction: No similar management action.	Management Direction: Utilize fuel breaks and maintain suppression lines to slow the spread of wildfires.	Management Direction: Same as Alternative C.
		Management Direction: No similar management action.	Management Direction: Reduce summer evapotranspiration from overstocked stands by implementing forest health treatments.	Management Direction: Same as Alternative C.
		Management Direction: No similar management action.	Management Direction: If recreational opportunity or access is reduced in some areas due to climate change, work towards expansion or enhancement of recreational opportunities and/or access in other available areas.	Management Direction: Same as Alternative C.
9	Soils			
10	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none"> Manage BLM-authorized activities to make progress towards properly functioning soil conditions with soil properties appropriate to specific climate and landform. These properties include but are not limited to bulk density, infiltration/permeability rates, and moisture storage. Manage actions on BLM public lands in the planning area to provide for long-term sustainability of soil including protection from vegetation trampling/removal, soil compaction, and accelerated soil erosion. Maintain appropriate soil characteristics for carbon sequestration. Assist in the protection of prime and unique farmlands under the Federal Farmland Protection Policy Act (FPPA). Wherever practicable, encourage surface-disturbing development be located in previously developed or disturbed areas. Implement proactive stabilization or other appropriate rehabilitation measures in response to anthropogenic or non-anthropogenic events that would impact public health and safety or sensitive ecosystem values. Prioritize proactive reclamation on abandoned mine lands subject to historic value considerations. Prioritize road maintenance activities to reduce sediment and promote resiliency to storm impacts, administrative and public use. 		
11	Management Direction: Arcata RMP 1992 Facilitate and encourage scientific research of the unique soils on Red Mountain. Decisions regarding soil and water objectives will not be made in this plan. BMPs such as the operating parameters for the SYU 13 Timber Management Plan EIS and Yokayo Grazing Management RODs and the Soil Conservation Service Soil Survey Guidelines will determine general soil and water objectives.	Management Direction: <ul style="list-style-type: none"> Surface-disturbing permitted activities would be determined on a case-by-case basis and would apply BMPs (Appendix F) in order to minimize impacts Apply BMPs to mitigate for BLM-permitted ground-disturbing activities that have the potential to generate nonpoint source sediment discharges. 		
12	Management Direction: No similar management action.	<ul style="list-style-type: none"> On a case-by-case basis, harden identified preferred routes that provide primary access to available resources allowing for rehabilitation and restoration of redundant routes to reduce accelerated soil erosion and increased soil compaction. This would be done through implementation level travel planning. In areas designated as open or limited for OHV use, monitor and identify thresholds for evaluating vulnerability to accelerated erosion and use BMPs and/or closures to limit erosion and delivery of sediment to aquatic resource areas including anadromous fish streams. Promote maintenance of soil properties and vegetation conditions consistent with the potential/capability of the site. Conduct regular and routine monitoring of areas affected by BLM-permitted activities. Monitoring requirements would be determined on a project-by-project basis. To the extent possible, monitor modifications to the landscapes such as soil disturbance from fire, vegetation management, and climate change. Use this information to prioritize stabilization and rehabilitation to protect human health/safety, important resource values, and the functions of critical ecosystems. Reduce accelerated erosion/compaction from mining and other activities through use of BMPs, concurrent reclamation, and frequent monitoring. Contaminated soils would be remediated and disposed of per federal regulations. Restrict retardant foams and chemical suppressants consistent with applicable fire and resource management requirements. Unless otherwise stated by BLM Authorized Officer, roads would be designed to Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (BLM, USFS, 2007), commonly referred to as the Gold Book, and road construction would be required to follow specifications mandated in the Updated Handbook for Forest, Ranch and Rural Roads (Pacific Watershed Associates 2015), as necessary. High severity burn areas, steep slopes, and areas with high erosion potential ratings would be prioritized for soil stabilization and erosion control efforts. Treatments would be commensurate with the values at risk. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
13	Management Direction: No similar management action.	Management Direction: Carbon sequestration <ul style="list-style-type: none">During implementation-level project permitting, consider sustainable soil organic carbon (SOC) budgets with the goal of maximizing SOC sequestration while minimizing SOC loss to the extent practicable.Where practicable, maintain, promote, and restore perennial native grasslands for carbon sequestration.		
14	Management Direction: No similar management action.	Management Direction: Serpentine Soils <ul style="list-style-type: none">To minimize loss of serpentine soils, the BLM would prioritize restoration of impacted serpentine soils where practicable and where consistent with management goals for natural and cultural resources.Promote research on serpentine soils, particularly with regard to their hydrologic properties that may be critical to providing springs and seeps for aquatic systems during late summer or periods of drought.		
15	Management Direction: Arcata RMP Forest Plan Amendment 1995 Designate approximately 86,000 acres in the plan amendment area and the Pine Ridge Road and maintained spur roads as limited to provide protection against soil erosion, compaction, and water quality degradation that could result from cross-country vehicle use. Covelo Vicinity MA Close a total of 13,069 acres (7,009 acres in the BLM portion of the Yolla-Bolly/Middle Eel Wilderness and 6,060 acres in the Middle Fork Eel River corridor) to vehicle use and limit vehicle use to transportation facilities designed for highway vehicles having four or more wheels on 53,431 acres in the rest of the Covelo Vicinity Management Area to provide protection against soil erosion and compaction that could result from cross-country vehicle use. Red Mountain MA Close a total of 18,882 acres to vehicle use [in the Red Mountain ACEC (6,895 acres), Elder Creek RNA/ ACEC (3,775 acres), and South Fork Eel River WSR corridor (8,212 acres)] and limiting vehicle use to transportation facilities designed for highway vehicles having four or more wheels on 16,782 acres in the rest of the South Fork Eel River Management Area to provide protection against soil erosion and compaction that could result from cross-country vehicle use. Scattered Tracts MA Close isolated parcels (approximately 320 acres) in the Van Duzen, main stem Eel, and Klamath Rivers designated WSR corridors and limit vehicle use to transportation facilities designed for highway vehicles having four or more wheels on 15,785 acres in the rest of the Scattered Tracts Management Area to provide protection against soil erosion and compaction that could result from cross-country vehicle use.	Management Direction: <ul style="list-style-type: none">Promote maintenance of soil properties and vegetation conditions consistent with the potential/capability of the site.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
16	<p>Management Direction:</p> <p>Redding RMP 1993</p> <p>Prevent impairment of soil productivity due to accelerated soil loss or physical or chemical degradation of the soil resources and to ensure that BLM management actions and objectives are consistent with soil resource capabilities. The authority to implement these objectives is based on an assortment of federal acts, executive orders, and MOU.</p> <p>Soils disturbed by range improvement construction will be reseeded with native and/or approved introduced species as soon as possible, unless it is determined to be unnecessary. The maintenance and improvement of soil cover and productivity would continue to be accomplished through preventive measures and land treatments under all land use management alternatives. Preventive measures would be brought forward in project planning and environmental analyses. Preventive measures typically include the avoidance of high erosion areas, restrictions on type and season of use and closure to certain uses such as forest management, vehicle use, grazing, or mineral development. Land treatments would be identified to heal earth-disturbing activities or applied to excessively eroded areas needing stabilization. Land treatments include seeding of grasses and forbs, plantings of cuttings and transplants, wattling and brush layering and matting, land shaping, application of mulches, and the construction of erosion control structures.</p> <p>Acquired lands containing decomposed granitic soils will not be open for locatable mineral entry.</p> <p>Shasta MA</p> <p><u>Swasey Drive Area</u></p> <p>Follow the Swasey Drive Area Implementation Plan. The threshold for damage to soils or other resources is more than 20 OHV intrusions per year off designated routes, noticeable damage to archaeological sites or features, or more than 1,000 square feet of surface disturbance per year. The target shooting area will be reclaimed after closure (with the southeasterly one-half reclaimed earlier if funds are available) through lead removal, scarification, re-contouring to a natural setting, mulching, and planting of native species.</p> <p><u>Clear Creek Uplands</u></p> <p>BLM-administered roads and trails within the zone of decomposed granite-derived soils are closed to vehicle use during the rainy season and could be closed on a year-round basis at the discretion of the BLM to protect the resource values of these erosion sensitive areas. Also, soil disturbing activities would be conducted only when no new, long-term increases to erosion would result.</p>	<p>Management Direction:</p> <ul style="list-style-type: none">Promote maintenance of soil properties and vegetation conditions consistent with the potential/capability of the site.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
16 (cont.)	<p>Trinity MA BLM-administered roads and trails within the zone of decomposed granite-derived soils are closed to vehicle use during the rainy season and could be closed on a year-round basis at the discretion of the BLM. Also, soil disturbing activities would be conducted only when no new, long-term increases to erosion would result.</p> <p><i>Grass Valley Creek Watershed</i> Reduce the sediment load entering the Trinity River via Grass Valley Creek for the improvement of anadromous fisheries. BLM roads and trails within the zone of decomposed granite-derived soils are closed to vehicle use during the rainy season and could be closed on a year-round basis at the discretion of the BLM to protect the resource values of these erosion sensitive areas. Also, soil-disturbing activities would be conducted only when no new, long-term increases to erosion would result.</p>	(see above)		
17	<p>Management Direction: No similar management action.</p>	<p>Management Direction: BLM would manage to minimize water quantity and quality impacts in riparian management areas and to be consistent with riparian habitat objectives (see Riparian Management Area section). BLM would develop and implement a multi-tier sediment source assessment that would identify watersheds and determine current watershed condition and sediment inputs. BLM would use this information to prioritize watersheds for treatment to address sediment sources and reduce sedimentation. BLM would prioritize acquisition of new lands along key riparian corridors to improve riparian connectivity. With the exception of mineral materials development and restoration activities, no BLM-permitted surface-disturbing activities would be allowed within the active floodplain. Require pre-construction assessments for biological soil crusts for all BLM-permitted activities. If the assessment determines the presence of these soils the BLM may require mitigation to address impacts to biological soil crusts. The following sensitive soil types/areas would be closed to mineral leasing, no surface occupancy for any permitted surface-disturbing activities, closed to mineral materials development, and ROW avoidance:</p> <ul style="list-style-type: none"> Decomposed granite Ultramafic/Serpentine Biological soil crusts 	<p>Management Direction: Same as Alternative B, with the following exceptions:</p> <ul style="list-style-type: none"> Pre-construction assessments for biological soil crusts would not be required. <p>The following sensitive soil types/areas would be closed to mineral leasing, ROW avoidance, and any permitted surface-disturbing activities conducted within them would require a stormwater management plan or implement appropriate BMPs:</p> <ul style="list-style-type: none"> Decomposed granite Ultramafic/Serpentine Biological soil crusts <p>Allow mineral materials development within the active floodplain if BLM determines it consistent with natural and cultural resource goals.</p>	<p>Management Direction: BLM would manage to minimize water quantity and quality impacts in riparian management areas and to be consistent with riparian habitat objectives (see Riparian Management Area section, below). BLM would develop and implement a multi-tier sediment source assessment that would identify watersheds and determine current watershed condition and sediment inputs. BLM would use this information to prioritize watersheds for treatment to address sediment sources and reduce sedimentation. BLM would prioritize acquisition of new lands along key riparian corridors to improve riparian connectivity. The following sensitive soil types/areas would be closed to mineral leasing, closed to mineral material development, and ROW avoidance:</p> <ul style="list-style-type: none"> Decomposed granite Soils containing asbestos (e.g., serpentine soils) <p>The BLM would implement measures to minimize effects to soil crusts at the implementation level.</p>
18	<p>Allocation: Acquire Grass Valley Creek watershed in Trinity County and manage to reduce erosion.</p>	<p>Allocation: During implementation-level travel planning, close redundant routes in identified priority areas of the Grass Valley Creek Watershed to facilitate rehabilitation of sediment-impaired areas.</p>	<p>Allocation: During implementation-level travel planning, minimize redundant routes in identified priority areas of the Grass Valley Creek Watershed to facilitate rehabilitation of sediment-impaired areas.</p>	<p>Allocation: Same as Alternative B.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
19	Water Resources			
20	Goals and Objectives: <ul style="list-style-type: none"> Previously disturbed floodplains are restored to functional, hydrologically connected settings where feasible given the possibility of other impacts and conflicts (e.g., mercury in mine tailings, cultural sites, existing infrastructure). Limit development in current and historic floodplains unless project design can retain or restore floodplain connectivity and function. Acquire water rights to protect sensitive resources. Develop guidance for new ROWs to minimize impacts to stream flows and aquatic resources. Ensure land management decisions consider stream flows and groundwater levels in project design and implementation. Develop opportunities for improving stream flows, particularly summer low flows, through project implementation, collaboration, and education. Identify management actions that promote hydrologic resilience and adaptive capacity in the face of climate change. Protect source water and identify other watersheds in need of special protection. 			
21	Management Direction: No similar management action.	Management Direction: <ul style="list-style-type: none"> Process-based restoration <ul style="list-style-type: none"> BLM would use low-tech methods, such as beaver dam analogs, as applicable to improve habitat quality in perennial riparian areas, with goals that include decreasing sedimentation and increasing summer low flows, and increasing cold water. BLM would coordinate with State of California and other applicable agencies in supporting beaver reintroduction for riparian restoration, including habitat improvement. BLM would develop and implement a multi-tier sediment source assessment that would identify watersheds and determine current watershed condition and sediment inputs. BLM would use this information to prioritize watersheds for treatment to address sediment sources and reduce sedimentation. <ul style="list-style-type: none"> Watershed priorities identified through the multi-tier sediment source assessment for restoration would be screened for those that provide opportunities to support basin-wide watershed restoration or management efforts of federal, Tribal, state, local, and other organizations. Watershed priorities would also be screened to provide opportunities to support BLM resource management needs such as fisheries and wildlife, climate resiliency, fire management, recreation, and public health and safety. Monitor water resources in coordination with river advocacy groups and other entities. Suggested variables include flow data, sediment flux, cyanotoxins, temperature, maximum pool depth. BLM would conduct water quality monitoring as necessary to comply with applicable laws and TMDLs and would work with partners to continue water quality monitoring as appropriate. Use watershed monitoring programs to educate the public and inform policy decisions. Where practicable, maintain hydrologic connections to vernal pool systems. Water quality in and around formal and informal shooting areas on BLM lands would be monitored and if lead concentrations exceed standards, then the following options could be implemented. <ul style="list-style-type: none"> If contamination continues, informal shooting areas would be signed to discourage further shooting. If contamination continues, designated shooting ranges that are not adjacent to surface water resources would be identified and informal shooting areas would be closed to shooting and if necessary, public access. Work with local government and stakeholders to address aquifer depletion and recharge as applicable. Promote water quality monitoring in summer refugia consistent with recovery plans for anadromous salmonids to the extent consistent with federal law. Comply with NOAA Fisheries guidelines for diversions and screening and minimize and avoid adverse effects of water diversion on ESA listed salmonids. Manage watersheds to make progress toward meeting goals of TMDLs. Implement Best Management Practices as detailed in Appendix F. Identify measures to ensure water availability for multiple use management and functioning, healthy riparian systems. <ul style="list-style-type: none"> Pursuant to the Sustainable Groundwater Management Act (SGMA), coordinate with Groundwater Sustainability Agencies (GSAs). BLM will continue to work to obtain water rights for the maintenance of natural resource values, as applicable and where available. Protect public land as applicable to mitigate any impacts climate change may have on water sources. Where practicable, maintain/construct existing/new roads and trails to be “hydrologically invisible” with frequent drainage, surface runoff dispersal and appropriate surfacing. Any temporary roads would be reclaimed to the BLM standards upon project completion. In some cases, this may include complete restoration to pre-disturbance conditions. For post-fire road rehabilitation, stabilization, and upgrades, drainage facilities would be sized to handle post-fire runoff and associated debris and sediment. Initiate filings with the State Water Resources Control Board to assert federal water rights under Wild and Scenic Rivers Act (16 U.S.C Sec. 1284(b) and (c)) to protect free-flowing condition and outstandingly remarkable values. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
21 (cont.)	(see above)	<ul style="list-style-type: none">• Initiate filings with the State Water Resources Control Board to assert Federal reserved water rights under the Wilderness Act (16 U.S.C. Section 1131, et seq.) to preserve the wilderness character of designated wilderness areas.• Ensure that water diversions are subject to transparent, enforceable limits , and ensure that wet-season diversions comply with DWR and CDFW regulations in relation to diversion rate, mechanisms, and water storage.• All new water ROWs in the Eel and Mattole River basins will include requirements of water storage/forbearance to minimize impacts to dry season water flows.• If available and applicable, use the information in the BLM’s Regional Ecological Assessments for assessing drought and mitigation measures and modify management per BLM policy to lessen impacts from drought.• Implement measures to ensure adequate groundwater recharge, stream baseflow, water temperature, and water quality for native fish and wildlife.• Wherever floodplain and riparian restoration is prioritized, exclude surface disturbing activities that damage restored areas.• Consider the withdrawal of floodplain restoration areas from locatable mineral entry, subject to valid existing rights.• Prioritize stream restoration projects for streams supporting anadromous fish habitat.		
22	Management Direction: Arcata RMP 1992 Decisions regarding soil and water objectives will not be made in this plan. BMPs such as the operating parameters for the SYU 13 and Yokayo Grazing Management Records of Decision and the Soil Conservation Service Soil Survey Guidelines will determine general soil and water objectives.	Management Direction: No similar management action.		
23	Management Direction: Northwest Forest Plan 1994 Tier I Key Watersheds For hydroelectric and other surface water development proposals, require in-stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate state agencies. During relicensing of hydroelectric projects, provide written and timely license conditions to the FERC that require flows and habitat conditions that maintain or restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate state agencies. Locate water drafting sites to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows needed to maintain riparian resources, channel conditions, and fish habitat.	Management Direction: No similar management action.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
24	<p>Management Direction:</p> <p>Northwest Forest Plan Survey and Management Amendment 2001</p> <p>Locate water drafting sites to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows needed to maintain riparian resources, channel conditions, and fish habitat. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.</p> <p>Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.</p> <p>In Riparian Management Areas, water drafting sites should be located and managed to minimize adverse effects on riparian habitat and water quality, as consistent with Aquatic Conservation Strategy objectives.</p> <p>All Other Watersheds</p> <p>For hydroelectric and other surface water development proposals, give priority emphasis to in-stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate state agencies. During relicensing of hydroelectric projects, provide written and timely license conditions to FERC that emphasize in-stream flows and habitat conditions that maintain or restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate state agencies.</p>	<p>Management Direction:</p> <p>No similar management action.</p>		
25	<p>Management Direction:</p> <p>Redding RMP 1993</p> <p>Hydroelectric and water storage: Potential waterpower/storage reservoir sites under a land withdrawal will continue to be managed for waterpower values. Exceptions include withdrawals for waterpower or storage on streams that become components of the National VSR System or if public lands are transferred from federal jurisdiction. In these instances, any existing withdrawals will be recommended for revocation.</p> <p>Monitoring is conducted using the minimum monitoring standards established by the Ukiah District in the document “Resource Monitoring in the Ukiah District- 1988.” It contains the criteria and guidelines for determining where monitoring should be emphasized and the methodology.</p> <p>Potential waterpower/storage reservoir sites under a land withdrawal will continue to be managed for water power values. Exceptions include withdrawals for waterpower or storage on streams that become components of the National VSR System or if public lands are transferred from federal jurisdiction. In these instances, any existing withdrawals will be recommended for revocation.</p>	<p>Management Direction:</p> <p>No similar management action.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
25 (cont.)	<p>AMPs will include BMPs as called for in Section 208 of the CWA and as described in “208 Water Quality Management Report. “The BLM objective for water quality is to ensure that all waters on public land meet or exceed federal and state water quality standards. Generally, BLM deals with nonpoint sources of pollution, which are addressed in Section 208 of the Federal Water Pollution Control Act Amendments of 1972 (PL-92-500) as amended by the Water Quality Act of 1987 (PL 100-4). The California State Water Resources Control Board has regulatory responsibility for water quality through its Regional Boards (Central Valley and North Coast within the Redding Resource Area). Additionally, the state may develop agreements with agencies like BLM for administration of water quality issues on the lands they administer. BLM coordinates with the Regional Boards to address water quality issues.</p> <p>Monitoring is conducted using the minimum monitoring standards established by the Ukiah District In the document “Resource Monitoring in the Ukiah District- 1988.” It contains the criteria and guidelines for determining where monitoring should be emphasized and the methodology.</p> <p>Impacts to water quality are prevented or reduced through the application of specific mitigation measures identified in project planning and environmental review. Where feasible, watershed improvement projects would be implemented to increase ground cover and ultimately reduce erosion, sediment yield and other water quality contaminants from public land.</p> <p>Shasta MA Improve water quality in the Shasta River basin.</p> <p>Klamath MA <u>Shasta Valley Wetlands</u> Acquire available unimproved lands within the area. Priority is given to land containing existing or historic native wetlands.</p> <p>Trinity MA <u>Grass Valley Creek Watershed</u> Develop an integrated watershed rehabilitation plan, using the coordinated resource management plan (CAMP) plan process, for the Grass Valley Creek watershed. Incorporate, as feasible, recommendations of the 1992 Natural Heritage Institute final report and the 1992 Soil Conservation Service erosion study.</p> <p>Sacramento River MA <u>Bend Area</u> Enhance wetlands (native and human made) and dependent species.</p> <p>Ishi MA Enhance water quality of Big Chico Creek.</p>	(see above)		
26	<p>Management Direction: Redding RMP Lands Amendment 2005 As stated in the RMP, before land can be disposed of by any method, BLM must complete an evaluation for significant cultural resources, T&E plants and animals, mineral potential, floodplain/flood hazards, hazardous waste, and prime or unique farmland.</p>	<p>Management Direction: No similar management action.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
27	Management Direction: No similar management action.	Management Direction: With the exception of salable mineral development and restoration activities, BLM-permitted surface-disturbing activities would be prohibited within the active floodplain.	Management Direction: BLM permitted surface disturbing activities would be allowed within the active floodplain.	Management Direction: In the active floodplain, permitted surface disturbing activities would be determined on a case-by-case basis and would apply BMPs from Appendix F in order to minimize impacts.
28	Management Direction: No similar management action.	Management Direction: Acquire additional water rights where possible to manage and maintain wetland function. Examples include (but are not limited to) the Bend District and Battle Creek.	Management Direction: Acquire additional water rights where possible to manage and maintain wetland function. Examples include (but are not limited to) the Bend District and Battle Creek. BLM would pursue water rights for existing surface water sources on BLM lands; water rights would be used, as deemed appropriate by the Authorized Officer, for wildlife, livestock, and recreational use.	Management Direction: Same as Alternative B.
29	Riparian Management Area Management Actions			
30	Relationship to the Northwest Forest Plan and Aquatic Conservation Strategy The Aquatic Conservation Strategy from the Northwest Forest Plan established nine objectives. In the action alternatives, these nine objectives have been carried forward. The Aquatic Conservation Strategy from the Northwest Forest Plan had four components: (1) riparian reserves, (2) key watershed, (3) watershed analysis, and (4) watershed restoration. In the action alternatives, the concept of riparian reserves have been carried forward, renamed as riparian management areas, but configurations and widths have been modified. Watershed restoration remains an important priority throughout the action alternatives. The concept of key watersheds and requirements for watershed analysis have not been carried forward to the action alternatives.			
31	Aquatic Conservation Strategy Objectives: <ul style="list-style-type: none"> Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Where the BLM has the ability to influence water quality, water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species. 			
32	Goals and Objectives: No similar additional goals and objectives.	Goals and Objectives: <ul style="list-style-type: none"> Protect and increase water to riparian areas by reducing unnaturally high levels of evapotranspiration. Contribute to the conservation and recovery of ESA-listed fish species and BLM Special Status aquatic or riparian-dependent species. Maintain water quality and streamflows within the range of natural variability to protect quality water for water-based recreation and drinking water sources. Meet water quality criteria identified in regional Water Quality Control Plans (Basin Plans). Maintain high quality water and contribute to the restoration of degraded water quality for 303(d)-listed streams. 		
33	Management Direction <i>In the NWFP boundary (all of Arcata FO and some of Redding FO)</i> Fish-bearing Streams <ul style="list-style-type: none"> Riparian reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet total, including both sides of the stream channel), whichever is greatest. Permanently Flowing Non Fish-bearing Streams <ul style="list-style-type: none"> Riparian reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer 	Management Direction: Riparian management area widths would be measured from each side of the stream's bankfull channel edge, extent of the floodplain, or unstable areas, whichever is greatest. For wetlands, ponds, and lakes, riparian management areas will also include the extent of seasonally saturated soil and riparian vegetation. Perennial Streams, Lakes, and Natural Ponds <u>Total width:</u> Two site potential tree heights or 200 feet, whichever is greater. <u>Inner zone width:</u> One site potential tree height or 100 feet, whichever is greater. Management would be as follows: <ul style="list-style-type: none"> Management of the inner zone would be to protect soil and riparian hydrologic function. 	Management Direction: Riparian management area widths would be measured from each side of the stream's bankfull channel edge, extent of the floodplain, or unstable areas, whichever is greatest. For wetlands, ponds, and lakes, riparian management areas will also include the extent of seasonally saturated soil and riparian vegetation. Perennial Streams, Lakes, and Natural Ponds <u>Total width:</u> One site potential tree height or 200 feet, whichever is greater. <u>Inner zone width:</u> 100 feet. Management would be as follows: <ul style="list-style-type: none"> Management of the inner zone would be to protect soil and riparian hydrologic function. Inner zone distance could be modified as needed to provide for the most effective protection and stabilization 	Management Direction: Riparian management areas are specified for the following five categories of streams or waterbodies: Fish-bearing Streams <ul style="list-style-type: none"> Riparian management areas consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet total, including both sides of the stream channel), whichever is greatest. Fish-bearing streams are distinguished from intermittent streams by the presence of any species of fish for any duration. Many intermittent streams may be used as

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
33 (cont.)	<p>edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet total, including both sides of the stream channel), whichever is greatest.</p> <p>Wetlands Greater than 1 Acre, Constructed Ponds and Reservoirs</p> <ul style="list-style-type: none"> Riparian reserves consist of the body of water or wetland and: the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or the extent of unstable and potentially unstable areas, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the wetland greater than Standards and Guidelines C-31 1 acre or the maximum pool elevation of constructed ponds and reservoirs, whichever is greatest. <p>Lakes and Natural Ponds</p> <ul style="list-style-type: none"> Riparian reserves consist of the body of water and: the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or to the extent of unstable and potentially unstable areas, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance, whichever is greatest. <p>Seasonally flowing or intermittent streams, wetlands less than 1 acre, and unstable and potentially unstable areas</p> <ul style="list-style-type: none"> This category applies to features with high variability in size and site-specific characteristics. At a minimum, the riparian reserves must include: <ul style="list-style-type: none"> The extent of unstable and potentially unstable areas (including earthflows), The stream channel and extend to the top of the inner gorge, The stream channel or wetland and the area from the edges of the stream channel or wetland to the outer edges of the riparian vegetation, and Extension from the edges of the stream channel to a distance equal to the height of one site-potential tree, or 100 feet slope distance, whichever is greatest. Intermittent streams are defined as any nonpermanent flowing drainage feature having a definable channel and evidence of annual scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two physical criteria. <p><i>Outside of the NWFP boundary:</i> Management actions as described in Row 37 for specific management areas.</p>	<ul style="list-style-type: none"> Inner zone distance could be modified as needed to provide for the most effective protection and stabilization of soils and riparian vegetation. Any modification would be identified and verified at the site-specific project implementation level based on topography and surface drainage patterns. Do not thin stands, except for forest health treatments to reduce the risk of stand-replacing crown fires or to promote late seral conditions. Treatments will not result in a long-term reduction of instream shade that affects stream temperature. Consider individual tree cutting or tree tipping for restoration. No removal of riparian obligate species unless it meets riparian objectives. Maintain at least 70 percent canopy cover. Do not allow pile burning unless it meets riparian objectives. Keep broadcast burns and jackpot burns out of riparian management areas, unless prescribed for restoration purposes (e.g., sudden oak death sanitation, improve species composition, invasive weed control, and invigorate deciduous trees, reduce fuel loading). Heavy equipment would be restricted to existing roads unless it is necessary to maintain/improve riparian health. <p><u>Outer zone width:</u> One additional site potential tree height or an additional 100 feet, whichever is greater. Management would be as follows:</p> <ul style="list-style-type: none"> Goal is to manage vegetation in the outer zone to support inner zone riparian health. Silvicultural practices in the outer zone would be dedicated to maintaining riparian function. Management in this zone could include but is not limited to thinning stands as needed to promote the development of large, open grown trees, developing layered canopies and multi-cohort stands, developing diverse understory plant communities, and allowing for hardwood vigor and persistence. Apply silvicultural treatments to increase diversity of riparian species and develop structurally-complex stands. Maintain at least 50 percent or appropriate canopy cover to meet Aquatic Conservation Strategy goals. Allow pile burning. Allow broadcast/jackpot burning to promote riparian health. Thin stands as needed to ensure that stands are able to provide trees that would function as stable wood in the stream, promote wildlife habitat, and develop late-successional characteristics. 	<p>of soils and riparian vegetation. Any modification would be identified and verified at the site- specific project implementation level based on topography and surface drainage patterns.</p> <ul style="list-style-type: none"> Do not thin stands, except for forest health treatments to reduce the risk of stand-replacing crown fires or to promote late seral conditions. Treatments will not result in a long-term reduction of instream shade that affects stream temperature. Consider individual tree cutting or tree tipping for restoration. No removal of riparian obligate species unless it meets riparian objectives. Maintain at least 70 percent canopy cover. Do not allow pile burning unless it meets riparian objectives. Keep broadcast burns and jackpot burns out of riparian management areas, unless prescribed for restoration purposes (e.g., sudden oak death sanitation, improve species composition, invasive weed control, and invigorate deciduous trees, reduce fuel loading). Heavy equipment would be restricted to existing roads unless it is necessary to maintain/improve riparian health. <p><u>Outer zone width:</u> An additional 100 feet or the width extending from the edge of the inner zone to one site potential tree height from the channel (e.g., 120 additional feet if site potential tree height is 220 feet), whichever is greater. Management would be the same as listed under Alternative B.</p> <p>Wetlands Greater than 1 Acre, Constructed Ponds and Reservoirs</p> <p><u>Total width:</u> One site potential tree height or 200 feet, whichever is greater.</p> <p><u>Inner Zone width:</u> 100 feet</p> <ul style="list-style-type: none"> Management would be the same as the inner zone perennial riparian management area. <p><u>Outer zone width:</u> An additional 100 feet or the width extending from the edge of the inner zone to one site potential tree height from the pond or reservoir edge (e.g., 120 additional feet if site potential tree height is 220 feet), whichever is greater.</p> <ul style="list-style-type: none"> Management would be the same as the outer zone perennial riparian management area. <p>Intermittent Streams and Wetlands Less than 1 Acre</p> <p>Total width: 100 feet Inner Zone width: 50 feet</p> <ul style="list-style-type: none"> Management would be same as the inner zone perennial riparian reserve. <p><u>Outer zone width:</u> An additional 50 feet</p> <ul style="list-style-type: none"> Management would be the same as the outer zone perennial riparian management area. 	<p>spawning and rearing streams, refuge areas during flood events in larger rivers and streams or travel routes for fish emigrating from lakes. In these instances, the RMA boundaries for fish-bearing streams would apply to those sections of the intermittent stream used by the fish.</p> <p>Permanently Flowing (Perennial) Non Fish-bearing Streams</p> <ul style="list-style-type: none"> Riparian management areas consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet total, including both sides of the stream channel), whichever is greatest. <p>Wetlands Greater than 1 Acre, Constructed Ponds and Reservoirs</p> <ul style="list-style-type: none"> Riparian management areas consist of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or the extent of unstable and potentially unstable areas, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the wetland greater than 1 acre or the maximum pool elevation of constructed ponds and reservoirs, whichever is greatest. <p>Lakes and Natural Ponds</p> <ul style="list-style-type: none"> Riparian Management Areas consist of the body of water and the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or to the extent of unstable and potentially unstable areas, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance, whichever is greatest. <p>Seasonally flowing or intermittent (ephemeral) Streams, Wetlands Less than 1 Acre, and Unstable and Potentially Unstable Areas</p> <ul style="list-style-type: none"> This category applies to features with high variability in size and site-specific characteristics. At a minimum, the RMA must include: <ul style="list-style-type: none"> The extent of unstable and potentially unstable areas (including earthflows), The stream channel and extend to the top of the inner gorge, The stream channel or wetland and the area from the edges of the stream channel or wetland to the outer edges of the riparian vegetation, and Extension from the edges of the stream channel to a distance equal to the height of one site-potential tree, or 100 feet slope distance, whichever is greatest. <p>Intermittent streams are defined as any nonpermanent flowing drainage feature having a definable channel and</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
33 (cont.)	(see above)	<p>Wetlands Greater than 1 Acre, Constructed Ponds and Reservoirs <u>Total width:</u> Two site potential tree heights or 200 feet, whichever is greater. <u>Inner Zone width:</u> One site potential tree height or 100 feet, whichever is greater.</p> <ul style="list-style-type: none">Management would be the same as the inner zone perennial riparian management area. <p><u>Outer zone width:</u> One additional site potential tree height or an additional 100 feet, whichever is greater.</p> <ul style="list-style-type: none">Management would be the same as the outer zone riparian management area. <p>Intermittent Streams and Wetlands Less than 1 Acre <u>Total width:</u> One site potential tree height or 200 feet, whichever is greater. <u>Inner Zone width:</u> 100 feet</p> <ul style="list-style-type: none">Management would be same as the inner zone perennial riparian management area. <p><u>Outer zone width:</u> An additional 100 feet or the width extending from the edge of the inner zone to one site potential tree height from the channel or wetland edge (e.g., 120 additional feet if site potential tree height is 220 feet), whichever is greater.</p> <ul style="list-style-type: none">Management would be the same as the outer zone perennial riparian management area. <p>Ephemeral Streams <u>Total width:</u> 50 feet Management would be the same as the outer zone perennial riparian management area.</p>	<p>Ephemeral Streams <u>Total width:</u> 25 feet Management would be the same as the outer zone perennial riparian management area.</p>	<p>evidence of annual scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two physical criteria.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
34	<p>Management Direction: Northwest Forest Plan 1994 Timber Management TM-1. Prohibit timber harvest, including fuelwood cutting, in Riparian Management Areas, except as described below. Riparian Reserve acres shall not be included in calculations of the timber base.</p> <ol style="list-style-type: none"> Where catastrophic events such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions, allow salvage and fuelwood cutting if required to attain Aquatic Conservation Strategy objectives. Salvage trees only when watershed analysis determines that present and future coarse woody debris needs are met and other Aquatic Conservation Strategy objectives are not adversely affected. Apply silvicultural practices for Riparian Management Areas to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy objectives. <p>Roads Management RF-1. Federal, state, and county agencies should cooperate to achieve consistency in road design, operation, and maintenance necessary to attain Aquatic Conservation Strategy objectives. RF-2. For each existing or planned road, meet Aquatic Conservation Strategy objectives by:</p> <ol style="list-style-type: none"> minimizing road and landing locations in Riparian Management Areas. completing watershed analyses (including appropriate analyses) prior to construction of new roads or landings in Riparian Management Areas. preparing road design criteria, elements, and standards that govern construction and reconstruction. preparing operation and maintenance criteria that govern road operation, maintenance, and management. minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow. restricting sidecasting as necessary to prevent the introduction of sediment to streams. avoiding wetlands entirely when constructing new roads. <p>RF-3. Determine the influence of each road on the Aquatic Conservation Strategy objectives through watershed analysis. Meet Aquatic Conservation Strategy objectives by:</p> <ol style="list-style-type: none"> reconstructing roads and associated drainage features that pose a substantial risk. prioritizing reconstruction based on current and potential impacts to riparian resources and the ecological value of the riparian resources affected. closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to Aquatic Conservation Strategy objectives and considering short-term and long-term transportation needs. 	<p>Management Direction:</p> <ul style="list-style-type: none"> Management direction defines the boundaries of Riparian Management Areas and prohibits or regulates activities in Riparian Management Areas that retard or prevent attainment of the Aquatic Conservation Strategy objectives. Design and implement watershed restoration projects in a manner that promotes long-term ecological integrity of ecosystems, conserves the genetic integrity of native species, and attains Aquatic Conservation Strategy objectives. In disturbed areas, promote establishment, survival, and growth of desirable native species as appropriate to the site. Manage upland ecosystems adjacent to riparian areas to reduce the risk of high severity fire, as the health of adjacent upland vegetation plays a crucial role in the resiliency of riparian areas to fire and other disturbances. Apply BMPs as applicable to minimize disturbance and provide for riparian function. Surface-disturbing activities within riparian management areas (Map 2-1 in Appendix A) would only be allowed if they do not prevent the attainment of Aquatic Conservation Strategy objectives. Surface-disturbing activities include but are not limited to vegetation management, land use authorizations, and recreational facilities (sites, trails). Impacts would be minimized to the extent possible by applying BMPs and alternative options would be considered to limit impacts to riparian management areas. Remove invasive, nonnative species from riparian areas as necessary to maintain riparian health and function. Riparian management, including restoration and enhancement, would consider and implement measures to provide for the protection of cultural resources as appropriate. New recreational facilities within riparian management areas, including trails and dispersed sites, would be designed to meet Aquatic Conservation Strategy objectives. In existing recreation facilities or other developments within riparian management areas, evaluate and mitigate impacts to ensure that these do not prevent, and to the extent practicable contribute to, attainment of Aquatic Conservation Strategy objectives. Temporary crossings of riparian management areas with equipment or motor vehicles would only be allowed if they do not prevent the attainment of Aquatic Conservation Strategy objectives. BLM would identify appropriate stream crossing locations for new temporary routes. Apply silvicultural practices for riparian management areas to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy objectives. Forest Health treatments would consider the placement of coarse woody debris in riparian areas where identified, and wood is available. Design riparian and upslope fuel treatment strategies, practices, and activities to meet Aquatic Conservation Strategy objectives and to reduce the likelihood of severe fire impacts to riparian vegetation. Decommission or reconstruct roads and associated drainage features that pose a risk to riparian resources with priority based on the magnitude of their impact to riparian-dependent resources and water quality. Adhere to the standards and guidelines for rangeland health to protect riparian resources. If it is determined that permanent impacts to riparian management areas by BLM-permitted activities would be subject to compensatory mitigation in line with the requirements of other federal agencies, then any applicable mitigation requirements under federal law, regulation, or BLM policy would be applied. 		<p>Management Direction: Timber Management TM-1. Prohibit timber harvest, including fuelwood cutting, in Riparian Management Areas, except as described below.</p> <ol style="list-style-type: none"> Where catastrophic events such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions, allow salvage and fuelwood cutting if required to attain Aquatic Conservation Strategy objectives. Salvage trees only when site-specific analysis determines that present and future coarse woody debris needs are met and other Aquatic Conservation Strategy objectives are not adversely affected. Apply silvicultural practices for Riparian Management Areas to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy objectives. <p>TM-2. Forest Health treatments would consider the placement of coarse woody debris in riparian areas where benefits have been identified and wood is available. TM-3. Even-aged management would be prohibited.</p> <p>Roads Management RF-1. Federal, state, and county agencies should cooperate to achieve consistency in road design, operation, and maintenance necessary to attain Aquatic Conservation Strategy objectives. RF-2. For each existing or planned road, including temporary roads, meet Aquatic Conservation Strategy objectives by:</p> <ol style="list-style-type: none"> minimizing road and landing locations in Riparian Management Areas. completing site-specific analyses (including appropriate analyses) prior to construction of new roads or landings in Riparian Management Areas. preparing road design criteria, elements, and standards that govern construction and reconstruction. preparing operation and maintenance criteria that govern road operation, maintenance, and management. minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow. restricting sidecasting as necessary to prevent the introduction of sediment to streams. avoiding wetlands entirely when constructing new roads. <p>RF-3. Determine the influence of each road on the Aquatic Conservation Strategy objectives. Meet Aquatic Conservation Strategy objectives by:</p> <ol style="list-style-type: none"> reconstructing roads and associated drainage features that pose a substantial risk. prioritizing reconstruction based on current and potential impacts to riparian resources and the ecological value of the riparian resources affected.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
34 (cont.)	<p>RF-4. New culverts, bridges and other stream crossings shall be constructed, and existing culverts, bridges and other stream crossings determined to pose a substantial risk to riparian conditions will be improved, to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resources affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.</p> <p>RF-5. Minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is unfeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes.</p> <p>RF-6. Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.</p> <p>RF-7. Develop and implement a Road Management Plan or a Transportation Management Plan that will meet the Aquatic Conservation Strategy objectives. As a minimum, this plan shall include provisions for the following activities:</p> <ol style="list-style-type: none"> inspections and maintenance during storm events. inspections and maintenance after storm events. road operation and maintenance, giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources. traffic regulation during wet periods to prevent damage to riparian resources. establish the purpose of each road by developing the Road Management Objective. <p>Grazing Management</p> <p>GM-1. Adjust grazing practices to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives. If adjusting practices is not effective, eliminate grazing in Riparian Management Areas.</p> <p>GM-2. Locate new livestock handling and/or management facilities outside Riparian Management Areas. For existing livestock handling facilities inside the Riparian Management Area, ensure that Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, require relocation or removal of such facilities.</p> <p>GM-3. Limit livestock trailing, bedding, watering, loading, and other handling efforts to those areas and times that will ensure Aquatic Conservation Strategy objectives are met.</p> <p>GM-2. Locate new livestock handling and/or management facilities outside Riparian Management Areas. For existing livestock handling facilities inside the Riparian Management Area, ensure that Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, require relocation or removal of such facilities.</p>	(see above)		<p>c. closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to Aquatic Conservation Strategy objectives and considering short-term and long-term transportation needs.</p> <p>RF-4. New culverts, bridges and other stream crossings shall be constructed, and existing culverts, bridges and other stream crossings determined to pose a substantial risk to riparian conditions will be improved, to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resources affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.</p> <p>RF-5. Minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is unfeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes.</p> <p>RF-6. Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.</p> <p>RF-7. Develop and implement a multi-tier sediment source assessment that would identify watersheds and determine current watershed condition and sediment inputs. BLM would use this information to prioritize watersheds for treatment to address sediment sources and reduce sedimentation.</p> <p>Grazing Management</p> <p>GM-1. Adjust grazing practices to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives. If adjusting practices is not effective, eliminate grazing in Riparian Management Areas.</p> <p>GM-2. Locate new livestock handling and/or management facilities outside Riparian Management Areas. For existing livestock handling facilities inside the Riparian Management Area, ensure that Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, require relocation or removal of such facilities.</p> <p>GM-3. Limit livestock trailing, bedding, watering, loading, and other handling efforts to those areas and times that will ensure Aquatic Conservation Strategy objectives are met.</p> <p>Recreation Management</p> <p>RM-1. New recreational facilities within Riparian Management Areas, including trails and dispersed sites, should be designed to not prevent meeting Aquatic Conservation Strategy objectives. Construction of these facilities should not prevent future attainment of these objectives. For existing recreation facilities within Riparian Management Areas, evaluate and mitigate impact to ensure</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
34 (cont.)	<p>GM-3. Limit livestock trailing, bedding, watering, loading, and other handling efforts to those areas and times that will ensure Aquatic Conservation Strategy objectives are met.</p> <p>Recreation Management</p> <p>RM-1. New recreational facilities within Riparian Management Areas, including trails and dispersed sites, should be designed to not prevent meeting Aquatic Conservation Strategy objectives. Construction of these facilities should not prevent future attainment of these objectives. For existing recreation facilities within Riparian Management Areas, evaluate and mitigate impact to ensure that these do not prevent, and to the extent practicable contribute to, attainment of Aquatic Conservation Strategy objectives.</p> <p>RM-2. Adjust dispersed and developed recreation practices that retard or prevent attainment of Aquatic Conservation Strategy objectives. Where adjustment measures such as education, use limitations, traffic control devices, increased maintenance, relocation of facilities, and/or specific site closures are not effective, eliminate the practice or occupancy.</p> <p>RM-3. Wild and Scenic Rivers and Wilderness management plans will address attainment of Aquatic Conservation Strategy objectives.</p> <p>Minerals Management</p> <p>MM-1. Require a reclamation plan, approved Plan of Operations, and reclamation bond for all locatable minerals operations that include Riparian Management Areas. Such plans and bonds must address the costs of removing facilities, equipment, and materials; recontouring disturbed areas to near pre-mining topography; isolating and neutralizing or removing toxic or potentially toxic materials; salvage and replacement of topsoil; and seedbed preparation and revegetation to meet Aquatic Conservation Strategy objectives.</p> <p>MM-2. Locate structures, support facilities, and roads outside Riparian Management Areas. Where no alternative to siting facilities in Riparian Management Areas exists, locate them in a way compatible with Aquatic Conservation Strategy objectives. Road construction will be kept to the minimum necessary for the approved mineral activity. Such roads will be constructed and maintained to meet roads management standards and to minimize damage to resources in the Riparian Management Area. When a road is no longer required for mineral or land management activities, it will be closed, obliterated, and stabilized.</p> <p>MM-3. Prohibit solid and sanitary waste facilities in Riparian Management Areas. If no alternative to locating mine waste (waste rock, spent ore, tailings) facilities in Riparian Management Areas exists, and releases can be prevented, and stability can be ensured, then:</p> <ol style="list-style-type: none"> analyze the waste material using the best conventional sampling methods and analytic techniques to determine its chemical and physical stability characteristics. 	(see above)		<p>that these do not prevent, and to the extent practicable contribute to, attainment of Aquatic Conservation Strategy objectives.</p> <p>RM-2. Adjust dispersed and developed recreation practices that retard or prevent attainment of Aquatic Conservation Strategy objectives. Where adjustment measures such as education, use limitations, traffic control devices, increased maintenance, relocation of facilities, and/or specific site closures are not effective, eliminate the practice or occupancy.</p> <p>RM-3. Wild and Scenic Rivers and Wilderness management plans will address attainment of Aquatic Conservation Strategy objectives.</p> <p>Minerals Management</p> <p>MM-1. Require a reclamation plan, approved Plan of Operations, and reclamation bond for all locatable minerals operations that include Riparian Management Areas. Such plans and bonds must address the costs of removing facilities, equipment, and materials; recontouring disturbed areas to near pre-mining topography; isolating and neutralizing or removing toxic or potentially toxic materials; salvage and replacement of topsoil; and seedbed preparation and revegetation to meet Aquatic Conservation Strategy objectives.</p> <p>MM-2. Locate structures, support facilities, and roads outside Riparian Management Areas. Where no alternative to siting facilities in Riparian Management Areas exists, locate them in a way compatible with Aquatic Conservation Strategy objectives. Road construction will be kept to the minimum necessary for the approved mineral activity. Such roads will be constructed and maintained to meet roads management standards and to minimize damage to resources in the Riparian Management Area. When a road is no longer required for mineral or land management activities, it will be closed, obliterated, and stabilized.</p> <p>MM-3. Prohibit solid and sanitary waste facilities in Riparian Management Areas. If no alternative to locating mine waste (waste rock, spent ore, tailings) facilities in Riparian Management Areas exists, and releases can be prevented, and stability can be ensured, then:</p> <ol style="list-style-type: none"> analyze the waste material using the best conventional sampling methods and analytic techniques to determine its chemical and physical stability characteristics. locate and design the waste facilities using best conventional techniques to ensure mass stability and prevent the release of acid or toxic materials. If the best conventional technology is not sufficient to prevent such releases and ensure stability over the long term, prohibit such facilities in Riparian Management Areas. monitor waste and waste facilities after operations to ensure chemical and physical stability and to meet Aquatic Conservation Strategy objectives.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
34 (cont.)	<p>b. locate and design the waste facilities using best conventional techniques to ensure mass stability and prevent the release of acid or toxic materials. If the best conventional technology is not sufficient to prevent such releases and ensure stability over the long term, prohibit such facilities in Riparian Management Areas.</p> <p>c. monitor waste and waste facilities after operations to ensure chemical and physical stability and to meet Aquatic Conservation Strategy objectives.</p> <p>d. reclaim waste facilities after operations to ensure chemical and physical stability and to meet Aquatic Conservation Strategy objectives.</p> <p>e. require reclamation bonds adequate to ensure long-term chemical and physical stability of mine waste facilities.</p> <p>MM-4. For leasable minerals, prohibit surface occupancy within Riparian Management Areas for oil, gas, and geothermal exploration and development activities where leases do not already exist. Where possible, adjust the operating plans of existing contracts to eliminate impacts that retard or prevent the attainment of Aquatic Conservation Strategy objectives.</p> <p>MM-5. Salable mineral activities such as sand and gravel mining and extraction within Riparian Management Areas will occur only if Aquatic Conservation Strategy objectives can be met.</p> <p>MM-6. Include inspection and monitoring requirements in mineral plans, leases or permits. Evaluate the results of inspection and monitoring to affect the modification of mineral plans, leases and permits as needed to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives.</p> <p>Fire/Fuels Management</p> <p>FM-1. Design fuel treatment and fire suppression strategies, practices, and activities to meet Aquatic Conservation Strategy objectives, and to minimize disturbance of riparian ground cover and vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuels management activities could be damaging to long-term ecosystem function.</p> <p>FM-2. Locate incident bases, camps, helibases, staging areas, helispots and other centers for incident activities outside of Riparian Management Areas. If the only suitable location for such activities is within the Riparian Management Area, an exemption may be granted following review and recommendation by a resource advisor. The advisor will prescribe the location, use conditions, and rehabilitation requirements. Use an interdisciplinary team to predetermine suitable incident base and helibase locations.</p> <p>FM-3. Minimize delivery of chemical retardant, foam, or additives to surface waters. An exception may be warranted in situations where overriding immediate safety imperatives exist, or, following review and recommendation by a resource advisor, when an escape would cause more long-term damage.</p>	(see above)		<p>d. reclaim waste facilities after operations to ensure chemical and physical stability and to meet Aquatic Conservation Strategy objectives.</p> <p>e. require reclamation bonds adequate to ensure long-term chemical and physical stability of mine waste facilities.</p> <p>MM-4. For leasable minerals, prohibit surface occupancy within Riparian Management Areas for oil, gas, and geothermal exploration and development activities where leases do not already exist. Where possible, adjust the operating plans of existing contracts to eliminate impacts that retard or prevent the attainment of Aquatic Conservation Strategy objectives.</p> <p>MM-5. Salable mineral activities such as sand and gravel mining and extraction within Riparian Management Areas will occur only if Aquatic Conservation Strategy objectives can be met.</p> <p>MM-6. Include inspection and monitoring requirements in mineral plans, leases or permits. Evaluate the results of inspection and monitoring to affect the modification of mineral plans, leases and permits as needed to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives.</p> <p>Fire/Fuels Management</p> <p>FM-1. Design fuel treatment and fire suppression strategies, practices, and activities to meet Aquatic Conservation Strategy objectives, and to minimize disturbance of riparian ground cover and vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuels management activities could be damaging to long-term ecosystem function.</p> <p>FM-2. Locate incident bases, camps, helibases, staging areas, helispots and other centers for incident activities outside of Riparian Management Areas. If the only suitable location for such activities is within the Riparian Management Area, an exemption may be granted following review and approval by an authorized officer. The officer will prescribe the location, use conditions, and rehabilitation requirements. Use an interdisciplinary team to predetermine suitable incident base and helibase locations.</p> <p>FM-3. Minimize delivery of chemical retardant, foam, or additives to surface waters. An exception may be warranted in situations where overriding immediate safety imperatives exist, or, following review and approval by an authorized officer, when an escape would cause more long-term damage.</p> <p>FM-4. Design prescribed burn projects and prescriptions to contribute to attainment of Aquatic Conservation Strategy objectives.</p> <p>FM-5. Immediately establish an emergency team to develop a rehabilitation treatment plan needed to attain Aquatic</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
34 (cont.)	<p>FM-4. Design prescribed burn projects and prescriptions to contribute to attainment of Aquatic Conservation Strategy objectives.</p> <p>FM-5. Immediately establish an emergency team to develop a rehabilitation treatment plan needed to attain Aquatic Conservation Strategy objectives whenever Riparian Management Areas are significantly damaged by wildfire or a prescribed fire burning outside prescribed parameters.</p> <p>Other - In Riparian Reserves, the goal of wildfire suppression is to limit the size of all fires. When watershed and/or landscape analysis, or province-level plans are completed and approved, some natural fires may be allowed to burn under prescribed conditions. Rapidly extinguishing smoldering coarse woody debris and duff should be considered to preserve these ecosystem elements. In Riparian Reserves, water drafting sites should be located and managed to minimize adverse effects on riparian habitat and water quality, as consistent with Aquatic Conservation Strategy objectives.</p> <p>Lands</p> <p>LH-1. Identify in-stream flows needed to maintain riparian resources, channel conditions, and fish passage.</p> <p>LH-2. Tier 1 Key Watersheds: For hydroelectric and other surface water development proposals, require in-stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate state agencies and Tribes. During relicensing of hydroelectric projects, provide written and timely license conditions to the Federal Energy Regulatory Commission (FERC) that require flows and habitat conditions that maintain or restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate state agencies.</p> <p>For all other watersheds: For hydroelectric and other surface water development proposals, give priority emphasis to in-stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate state agencies. During relicensing of hydroelectric projects, provide written and timely license conditions to FERC that emphasize in-stream flows and habitat conditions that maintain or restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate state agencies.</p> <p>LH-3. Locate new support facilities outside Riparian Management Areas. For existing support facilities inside Riparian Management Areas that are essential to proper management, provide recommendations to FERC that ensure Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, provide recommendations to FERC that such support facilities should be relocated. Existing ancillary facilities that must be located in the Riparian Management Areas will be located, operated, and maintained with an emphasis to eliminate adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives.</p>	(see above)		<p>Conservation Strategy objectives whenever Riparian Management Areas are significantly damaged by wildfire or a prescribed fire burning outside prescribed parameters.</p> <p>FM-6. Manage upland ecosystems adjacent to riparian areas to reduce the risk of high severity fire, as the health of adjacent upland vegetation plays a crucial role in the resiliency of riparian areas to fire and other disturbances.</p> <p>FM-7. In areas at risk for high severity fire, apply fuels reduction treatments in Riparian Management Areas to manage the risk of high severity fire impacts in Riparian Management Areas while working towards desired vegetation characteristics needed to acquire Aquatic Conservation Strategy objectives.</p> <p>FM-8. Where RMA and fuels management "interface zone" overlap, projects would be designed to prioritize Interface Zone goals and objectives while not preventing or retarding the attainment of ACS objectives. On fish-bearing streams, these projects would be coordinated with the appropriate regulatory agency (NMFS or USFWS).</p> <p>FM-9. In Riparian Management Areas, the goal of wildfire suppression is to limit the severity of all fires. When fire management plans are completed and approved, some fires may be allowed to burn under prescribed conditions. Rapidly extinguishing smoldering coarse woody debris and duff should be considered to preserve these ecosystem elements. In Riparian Management Areas, water drafting sites should be located and managed to minimize adverse effects on riparian habitat and water quality, as consistent with Aquatic Conservation Strategy objectives.</p> <p>Lands</p> <p>LH-1. Identify in-stream flows needed to maintain riparian resources, channel conditions, and fish passage.</p> <p>LH-2. For hydroelectric and other surface water development proposals, require in-stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate state agencies and Tribes. During relicensing of hydroelectric projects, provide written and timely license conditions to the Federal Energy Regulatory Commission (FERC) that require flows and habitat conditions that maintain or restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate state agencies.</p> <p>LH-3. Locate new ancillary facilities outside Riparian Management Areas. For existing ancillary facilities inside Riparian Management Areas that are essential to proper management, provide recommendations to FERC that ensure Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, provide recommendations to FERC that such ancillary facilities should be relocated. Existing ancillary facilities that must be located in the Riparian Management Areas will be located, operated, and maintained</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
34 (cont.)	<p>LH-4. For activities other than surface water developments, issue leases, permits, rights-of-way, and easements to avoid adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives. Adjust existing leases, permits, rights-of-way, and easements to eliminate adverse effects that retard or prevent the attainment of Aquatic Conservation Strategy objectives. If adjustments are not effective, eliminate the activity. Priority for modifying existing leases, permits, rights-of-way and easements will be based on the actual or potential impact and the ecological value of the riparian resources affected.</p> <p>LH-5. Use land acquisition, exchange, and conservation easements to meet Aquatic Conservation Strategy objectives and facilitate restoration of fish stocks and other species at risk of extinction.</p> <p>General Riparian Area Management</p> <p>RA-1. Identify and attempt to secure in-stream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.</p> <p>RA-2 Fell trees in Riparian Management Areas when they pose a safety risk. Keep felled trees on-site when needed to meet coarse woody debris objectives.</p> <p>RA-3. Herbicides, insecticides, and other toxicants, and other chemicals shall be applied only in a manner that avoids impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives.</p> <p>RA-4. Locate water drafting sites to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows needed to maintain riparian resources, channel conditions, and fish habitat.</p> <p>Watershed and Habitat Restoration</p> <p>WR-1. Design and implement watershed restoration projects in a manner that promotes long-term ecological integrity of ecosystems, conserves the genetic integrity of native species, and attains Aquatic Conservation Strategy objectives.</p> <p>WR-2. Cooperate with federal, state, local, and Tribal agencies, and private landowners to develop cooperative agreements to meet Aquatic Conservation Strategy objectives.</p> <p>WR-3. Do not use mitigation or planned restoration as a substitute for preventing habitat degradation.</p> <p>Fish and Wildlife Management</p> <p>FW-1. Design and implement fish and wildlife habitat restoration and enhancement activities in a manner that contributes to attainment of Aquatic Conservation Strategy objectives and the recovery of threatened and endangered species.</p> <p>FW-2. Design, construct and operate fish and wildlife and other user enhancement facilities in a manner that does not retard or prevent attainment of Aquatic Conservation Strategy objectives. For existing fish and wildlife and other user enhancement facilities inside Riparian Management Areas, ensure that Aquatic Conservation Strategy objectives are met. Where Aquatic Conservation Strategy objectives cannot be met, relocate or close such facilities.</p>	(see above)		<p>with an emphasis to eliminate adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives.</p> <p>LH-4. For activities other than surface water developments, issue leases, permits, rights-of-way, and easements to avoid adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives. Adjust existing leases, permits, rights-of-way, and easements to eliminate adverse effects that retard or prevent the attainment of Aquatic Conservation Strategy objectives. If adjustments are not effective, eliminate the activity. Priority for modifying existing leases, permits, rights-of-way and easements will be based on the actual or potential impact and the ecological value of the riparian resources affected.</p> <p>LH-5. Use land acquisition, exchange, and conservation easements to meet Aquatic Conservation Strategy objectives and facilitate restoration of fish stocks and other species at risk of extinction.</p> <p>General Riparian Area Management</p> <p>RA-1. Identify and attempt to secure in-stream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.</p> <p>RA-2 Fell trees in Riparian Management Areas when they pose a safety risk. Keep felled trees on-site when needed to meet coarse woody debris objectives.</p> <p>RA-3. Herbicides, insecticides, and other toxicants, and other chemicals shall be applied only in a manner that avoids impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives.</p> <p>RA-4. Locate water drafting sites to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows needed to maintain riparian resources, channel conditions, and fish habitat.</p> <p>RA-5. Apply BMPs as applicable to minimize ground disturbance and meet Aquatic Conservation Strategy objectives.</p> <p>RA-6. Remove invasive, nonnative species from riparian areas as necessary to maintain riparian health and function.</p> <p>Watershed and Habitat Restoration</p> <p>WR-1. Design and implement watershed restoration projects in a manner that promotes long-term ecological integrity of ecosystems, conserves the genetic integrity of native species, and attains Aquatic Conservation Strategy objectives.</p> <p>WR-2. Cooperate with federal, state, local, and agencies, Tribes, and private landowners to develop cooperative agreements to meet Aquatic Conservation Strategy objectives.</p> <p>WR-3. Do not use mitigation or planned restoration as a substitute for preventing habitat degradation.</p> <p>WR-4. Use silvicultural practices to grow large trees in riparian areas. Appropriate practices may include planting unstable areas such as landslides along streams and flood terraces, thinning densely-stocked young stands to</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
34 (cont.)	<p>FW-3. Cooperate with federal and state fish management agencies and Tribes to identify and eliminate impacts associated with habitat manipulation, fish stocking, harvest and poaching that threaten the continued existence and distribution of native fish stocks occurring on federal lands.</p> <p>FW-4. Cooperate with federal, tribal, and state fish management agencies to identify and eliminate impacts associated with habitat manipulation, fish stocking, harvest and poaching that threaten the continued existence and distribution of native fish stocks occurring on federal lands.</p> <p>Research</p> <p>RS-1. A variety of research activities may be ongoing and proposed in Key Watersheds and Riparian Reserves. These activities must be analyzed to ensure that significant risk to the watershed values does not exist. If significant risk is present and cannot be mitigated, study sites must be relocated. Some activities not otherwise consistent with the objectives may be appropriate, particularly if the activities will test critical assumptions of these standards and guidelines; will produce results important for establishing or accelerating vegetation and structural characteristics for maintaining or restoring aquatic and riparian ecosystems; or the activities represent continuation of long-term research. These activities should be considered only if there are no equivalent opportunities outside of Kew Watersheds and Riparian Reserves.</p> <p>RS-2. Current, funded, agency-approved research, which meets the above criteria, is assumed to continue if analysis ensures that a significant risk to Aquatic Conservation Strategy objectives does not exist. Research Stations and other Forest Service and BLM units will, within 180 days of the signing of the Record of Decision adopting these standards and guidelines, submit a brief project summary to the Regional Ecosystem Office of ongoing research projects that are potentially inconsistent with other standards and guidelines but are expected to continue under the above research exception. The Regional Ecosystem Office may choose to more formally review specific projects, and may recommend to the Regional Interagency Executive Committee modification, up to and including cancellation, of those projects having an unacceptable risk to Key Watersheds and Riparian Reserves. Risk will be considered within the context of the Aquatic Conservation Strategy objectives.</p>	(see above)		<p>encourage development of large conifers, releasing young conifers from overtopping hardwoods, and reforesting shrub and hardwood-dominated stands with conifers. These practices can be implemented along with silvicultural treatments in uplands areas, although the practices will differ in objective and, consequently, design.</p> <p>WR-5. Thin dense non-riparian vegetation to reduce evapotranspiration and increase dry season low flows.</p> <p>WR-6. Prioritize restoration on guidance found in resources such as state and federal recovery plans, watershed assessments and plans developed by partner entities, current watershed restoration science, and through consultation with NMFS and USFWS. These resources will be used to identify areas of greatest benefit-to-cost relationships for restoration opportunities and greatest likelihood of success and can also be used as a medium to develop cooperative projects involving various landowners.</p> <p>Fish and Wildlife Management</p> <p>FW-1. Design and implement fish and wildlife habitat restoration and enhancement activities in a manner that contributes to attainment of Aquatic Conservation Strategy objectives and the recovery of threatened and endangered species.</p> <p>FW-2. Design, construct and operate fish and wildlife interpretive facilities in a manner that does not retard or prevent attainment of Aquatic Conservation Strategy objectives. For existing fish and wildlife interpretative facilities inside Riparian Management Areas, ensure that Aquatic Conservation Strategy objectives are met. Where Aquatic Conservation Strategy objectives cannot be met, relocate or close such facilities.</p> <p>FW-3. Cooperate with federal and state fish management agencies and Tribes to identify and eliminate impacts associated with habitat manipulation, fish stocking, harvest and poaching that threaten the continued existence and distribution of native fish stocks occurring on federal lands.</p> <p>Research</p> <p>RS-1. A variety of research activities may be ongoing and proposed in Riparian Management Areas. These activities must be analyzed to ensure that significant risk to the watershed values does not exist. If significant risk is present and cannot be mitigated, study sites must be relocated. Some activities not otherwise consistent with the objectives may be appropriate, particularly if the activities will test critical assumptions of these standards and guidelines; will produce results important for establishing or accelerating vegetation and structural characteristics for maintaining or restoring aquatic and riparian ecosystems; or the activities represent continuation of long-term research. These activities should be considered only if there are no equivalent opportunities outside of Riparian Management Areas.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
35	<p>Management Direction:</p> <p>Arcata RMP 1992</p> <p>Maintain and restore watershed and aquatic ecological functions and processes that operate in watersheds to create anadromous fish habitat in those watersheds with highest restoration potential (South Fork Eel River and Cedar Creek). Retain 40 acres at the confluence of Eubanks Creek and the Mattole River for its fisheries and riparian values. Continue to inventory of habitat conservation/critical habitat areas.</p> <p>Manage the South Fork Eel River and its tributaries from/including Low Gap Creek to Elder Creek as Key Watersheds. For all permanent and intermittent tributaries to the South Fork Eel that lie outside of the “wild” river designation, establish the following interim horizontal stream buffers as interim riparian management areas:</p> <ul style="list-style-type: none"> • Fish-bearing streams – 300 feet either side of the channel • Non-fish-bearing streams – 150 feet either side of the channel • Intermittent streams and landslide prone areas – 100 feet either side of the stream channel or to the extent of landslide or landslide-prone areas <p>Buffering applies to the South Fork Eel River and tributaries from/including Low Gap Creek to/including Elder Creek. Actual buffering widths will be determined by watershed analysis. Riparian management areas are subject to specific standards and guidelines to protect salmon and steelhead stocks. Manage Cedar Creek as a Key Watershed with interim riparian buffering as above.</p> <p>Actively pursue direct acquisition of high-priority habitats for anadromous fisheries habitat restoration, Key Watershed management, VWSR corridor management, and other specific endangered species habitats.</p> <p>Recognize permanent riparian buffers (300, 150, 100 feet) on all other streams in the management area. No watershed analysis is necessary.</p> <p>Prepare watershed analyses for South Fork Eel River and Cedar Creek that:</p> <ul style="list-style-type: none"> • Establish criteria for determining riparian management area widths. • Identify transportation needs and restoration priorities. • Refine management guidelines to fit specific landscape conditions and limitations. • Establish forestry and watershed restoration goals and priorities. <p>Establish monitoring programs to ensure riparian management objectives are met.</p> <p>Complete a South Fork Eel River Management Plan</p>	<p>Management Direction:</p> <ul style="list-style-type: none"> • Manage to maintain and/or restore the function of riparian systems, as described in Rows 33 and 34, above. 		<p>Management Direction:</p> <p>Manage to maintain and/or restore the function of riparian systems, as described in Rows 33 and 34, above</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
36	<p>Management Direction: Arcata RMP Forest Plan Amendment 1995 General Comment regarding the emphasis of anadromous fisheries, aquatic system restoration, and protection and riparian class.</p> <p>Covelo Vicinity MA Emphasize anadromous fisheries and cooperative watershed management on Eel River, Middle Fork Eel River, and North Fork Eel River and major tributaries. Re-establish the role of fire as a viable process for ecosystem management. Maintain and restore ecological functions and processes that operate in watersheds to create anadromous fish habitat in those watersheds with highest restoration potential (Thatcher Creek). Protect and enhance natural and recreational values along the federally designated “wild” and “scenic” segments of the Middle Fork Eel River as outlined in the Middle Fork Eel River Management Plan. Establish Thatcher Creek and its tributaries as a Tier-I Key Watershed. For all permanent and intermittent tributaries to Thatcher Creek, establish the following interim horizontal stream buffers as interim Riparian management areas:</p> <ul style="list-style-type: none"> • Fish-bearing streams – 300 feet either side of the channel. • Non-fish-bearing streams – 150 feet either side of the channel. <p>Intermittent streams and landslide prone areas – 100 feet either side of the stream channel or to the extent of landslide or landslide prone areas. Criteria for establishing actual buffering widths will be determined by watershed analysis. Riparian management areas are subject to specific standards and guidelines to protect salmon and steelhead stocks. Delineate permanent buffers (300, 150, 100 feet) on all other streams in the management area. No watershed analysis is necessary. Develop cooperative management relationships with private landowners, state, and other federal agencies to effect coordinated management consistent with restoration of anadromous fisheries of the Eel River, Middle Fork Eel River, and North Fork Eel River. Delineate quarter-mile “wild” and “scenic” buffers to designated segments of the Eel River, Middle Fork Eel River, and North Fork Eel River as identified in the Middle Fork Eel River Management Plan and in interim management provisions of the WSR Act. Develop MOU with Mendocino National Forest for management of the Thatcher and Cedar Creek watershed and development of watershed analysis. Prepare watershed analysis for Thatcher Creek that:</p> <ul style="list-style-type: none"> • Establishes criteria for establishing riparian management area widths. • Refines management guidelines to fit specific landscape conditions and limitations. 	<p>Management Direction: Manage to maintain and/or restore the function of riparian systems, as described in Rows 33 and 34, above.</p>		<p>Management Direction: Manage to maintain and/or restore the function of riparian systems, as described in Rows 33 and 34, above.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
36 (cont.)	<ul style="list-style-type: none">Establishes forestry and watershed restoration goals and priorities. Establish monitoring programs to ensure riparian management objectives. Implement Middle Fork Eel River Management Plan. Lacks Creek MA Minimize sedimentation into the hydrographic basin of Redwood Creek by consolidating ownership and through coordinated management consistent with the Redwood National Park Expansion Act of 1978 (Public Law 95-250). Complete a watershed analysis in coordination with Redwood National Park. Scattered Tracts MA Manage areas along all permanently flowing streams, lakes, wetlands, and intermittent streams. Establish permanent buffers (300, 150, 100 feet) on all streams in the management area. No watershed analysis is necessary. No fisheries or sensitive fishery management actions identified for this management area.	(see above)		(see above)
37	Management Direction: Redding RMP 1993 Klamath MA Consolidate and increase public landownership within the area by acquiring available unimproved lands that: adjoin the Trinity River Corridor, facilitate reforestation and other sustained yield forestry practices, protect anadromous fisheries, provide public access to public lands, protect sensitive species habitat, conserve regionally important cultural resources, provide access to identified Native American heritage resources, or enhance overall efficiency of public land administration. Acquire available, unimproved private land that contains important anadromous salmonid habitat. <u>Shasta and Klamath Rivers Canyon</u> Improve Chinook salmon spawning in the lower Shasta River. Restore riparian vegetation to Class II or better. Designate all public land in the Shasta River Canyon below the Highway 263 bridge crossing below Yreka Creek to the confluence with the Klamath River and within a quarter mile of the normal high-water mark as an ACEC. Withdraw all public lands within the 100-year flood zone of the Shasta River from mineral entry. The area is closed to livestock grazing.	Management Direction: <ul style="list-style-type: none">Manage to maintain and/or restore the function of riparian systems, as described in Rows 33 and 34, above.		Management Direction: Manage to maintain and/or restore the function of riparian systems, as described in Rows 33 and 34, above. Note: Management areas are not being carried forward under this alternative; management direction provided in Row 34 would apply to all BLM-administered lands in the decision area.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
37 (cont.)	<p>Develop an integrated resource activity plan for the Klamath River below RM 181 and the Shasta River Canyon that identifies high priority land acquisitions, designates appropriate roads and trails for recreational access, identifies management facility needs to protect the ACEC and riparian zone, and encourages cooperative actions with adjacent landowners.</p> <p>Acquire available unimproved lands within the area with priority given (in descending order) to unimproved lands within the ACEC, Klamath River corridor, and lands between Interstate 5 and the ACEC.</p> <p><u>Upper Klamath River</u></p> <p>Improve the condition of riparian vegetation to Class II or better. This portion of the Klamath River is considered eligible and suitable for inclusion in the National WSR System. All public land in the corridor bounded by the northern canyon rim and within a quarter mile of normal high water along the southern bank will be managed in a manner that will not impair the outstanding remarkable values and consistent with a preliminary classification as “Scenic.”</p> <p>Amend the existing river management plan for the Klamath River above Copco to reflect the Final Eligibility and Suitability Report for the Upper Klamath WSR Study and the recommendations of the Klamath Falls Resource Management Plan.</p> <p>The river corridor is closed to livestock grazing.</p> <p>Offer public lands within the river corridor for mineral leasing with no surface occupancy.</p> <p>Mineral materials disposals are not allowed within the river corridor.</p> <p><u>Mid-Klamath River</u></p> <p>Maintain existing public lands within the designated WSR corridor in present conditions.</p> <p>Establish a corridor for this segment of the Klamath River between Iron Gate Reservoir (RM 190) and the Klamath River Canyon (RM 181), which consists of the 100-year floodplain, within one-eighth mile of normal high water or the nearest paralleling road or railroad, whichever is least.</p> <p>Permit no actions on public land that would impair the quality or condition of this “Recreational” component of the National WSR System.</p> <p><u>Dry Creek</u></p> <p>Improve the steelhead spawning habitat in lower Dry Creek.</p> <p>Area is closed to motorized vehicles excepting the Siskiyou County-maintained Copco Road.</p> <p>Area is closed to livestock grazing.</p> <p>Mineral materials disposals are permitted only if such actions enhance the steelhead spawning potential within Dry Creek.</p> <p>Continue annual monitoring of steelhead spawning success along lower Dry Creek. Maintain the existing management facilities (i.e., gabions and fences) as needed.</p>	(see above)		(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
37 (cont.)	<p><u>Shasta Valley Wetlands</u> Provide long-term protection and enhancement of native wetlands. Improve water quality in the Shasta River basin. Enhance the native fisheries of Parks Creek, Big Springs Creek, and the Shasta River. Acquire available, unimproved private land that contains important anadromous salmonid habitat. Close the RNA/ACEC to livestock grazing. Acquire available unimproved lands within the area. Priority is given to land containing existing or historic native wetlands. Develop an integrated resource activity plan for the Shasta Valley Wetlands if BLM acquires available privately owned unimproved lands within the area. The plan will identify forage allocation and desired plant communities for domestic and native grazing, acquisition/cooperative management needs, a network of management facilities to protect the native wetlands, wildlife productivity targets, water quality base and target standards, and public access needs that do not adversely impact the native biota. Mineral materials disposals are permitted only if such actions enhance the long-term condition of riparian vegetation and the native fisheries habitat. Offer for mineral leasing with no surface occupancy within 300 feet of wetland habitat. Offer all other lands for mineral leasing with no surface-disturbing actions permitted between November 15 and April 15. Allow grazing as a management tool.</p> <p>Sacramento River MA Conduct special-status species inventories on lands available for exchange or administrative transfer.</p> <p><u>Sacramento Island</u> Improve anadromous salmonid habitat. Allow mineral materials disposals only if such actions are intended to enhance the natural values, including anadromous salmonid and waterfowl habitat. Develop an RNA/ACEC management plan for Sacramento Island that identifies and establishes acquisition and cooperative agreement needs for adjoining private lands, desired plant community, waterfowl and anadromous salmonid habitat improvement actions and necessary management facilities.</p> <p><u>Bend Area</u> Enhance anadromous fisheries. Ensure long-term survival of special-status species. Acquire available unimproved lands that (in descending priority) contain high priority habitat along the Sacramento River as depicted in the 1988 Sacramento River Riparian Atlas, front the Sacramento River, provide physical access to public land, contain known/potential wetland or special-status species habitat, contain important cultural resources, or facilitate overall public management within the area.</p>	(see above)		(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
37 (cont.)	<p><u>Cottonwood Creek and Sacramento River parcels</u> Mineral materials disposals are not permitted unless such actions benefit the natural values, such as aquatic environments or fisheries.</p> <p>Shasta MA Develop an integrated resource activity plan for Clear Creek that details habitat restoration needs for anadromous salmonids, delineates desired plant community and restoration needs for riparian vegetation, describes protective management facilities, and lists important cooperators and their responsibilities.</p> <p><u>Interlakes Special Recreation Management Area</u> Maintain special-status species habitat.</p> <p><u>Lower Clear Creek and Mule Mountain</u> Enhance anadromous salmonid habitat.</p> <p>Trinity MA <u>Trinity River</u> Protect and enhance the anadromous fisheries of the Trinity River. Maintain the riparian habitat in Class I or Class II condition. Mineral materials disposals are not allowed within the 100-year floodplain of anadromous fishery streams (including Canyon, Indian and Deadwood Creeks) unless such actions enhance anadromous fisheries habitat. Maintain existing withdrawals from mineral entry at Junction City and Douglas City campgrounds (58 acres and 140 acres respectively). Withdraw other proposed and developed public facilities from mineral entry. Withdraw specific cultural resources from mineral entry including Helena, Rush Creek, Ohio Flat, Salt Flat, and Montana Cabin. Withdraw anadromous fisheries habitat improvements from mineral entry including Steiner Flat and Cemetery Hole. New acquisitions in this area would not be opened for locatable mineral entry. Offer mineral materials disposals only to enhance riparian vegetation, anadromous fisheries habitat, or when not in conflict with the long-term protection of natural values. Actively participate in the Trinity River Task Force for implementing the Trinity River Basin Fish and Wildlife Restoration Act.</p> <p><u>Tunnel Ridge</u> Mineral materials disposals are not allowed within the 100-year floodplain of anadromous fishery streams (including Canyon, Indian and Deadwood Creeks) unless such actions enhance anadromous fisheries habitat.</p> <p><u>North of Trinity River/Deadwood/Indian Creek:</u> Maintain the riparian and fisheries habitat of anadromous fisheries streams including Canyon, Indian, and Deadwood Creeks. Mineral materials disposals are not allowed within the 100-year floodplain of anadromous fishery streams (including Canyon, Indian and Deadwood Creeks) unless such actions enhance anadromous fisheries habitat.</p>	(see above)		(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
37 (cont.)	<u>Grass Valley Creek Watershed</u> Reduce the sediment load entering the Trinity River via Grass Valley Creek for the improvement of anadromous fisheries. Ishi MA <u>Battle Creek</u> Enhance anadromous fisheries (below Manton Road) Mineral materials disposals are not permitted unless such actions enhance the natural values, including fisheries habitat recovery. <u>Deer Creek</u> Maintain and improve, if feasible, the fisheries habitat of Deer Creek <u>Forks of Butte Creek</u> Maintain the fisheries habitat.	(see above)		(see above)
38	Vegetation (Including Special Status Species and Invasive, Nonnative Species)			
39	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none">Identify the desired composition and range of conditions for vegetation communities throughout the decision area.Manage vegetation and native plant communities in order to optimize plant community health and resilience to landscape-wide impacts.Engage local, state, Tribes and federal partners in program and project design to address vegetation management issues while minimizing or avoiding impacts and proactively conserving special status plant species and their habitats across jurisdictional boundaries, or in Essential Connectivity Corridors (Map 2-3 in Appendix A).Inventory and monitor special status species and their habitats to contribute to a greater understanding of their abundance and distribution and facilitate implementation of conservation and recovery actions within the planning area.Implement recovery actions for listed species with USFWS recovery plans such that the measurable results of these actions contribute to meeting de-listing criteria for a given species.Limit impacts to sensitive plant species from OHV use in high-use OHV areas.Manage vegetation to support fish and wildlife habitat, and healthy watersheds.Manage vegetation to support sustainable resource uses and economic stimulation, such as recreational hunting and fishing, special forest products, forestry, livestock grazing use, or carbon offsets or credits.		
40	General Vegetation			
41	Management Direction: No similar management action.	Management Direction: <ul style="list-style-type: none">Vegetation cover types in the planning area would be managed for the following, a heterogenous patchwork of habitat types that provides for:<ul style="list-style-type: none">Conservation of common, federally listed, and BLM Sensitive plant species.Fire resistance and resilience in the face of catastrophic fire and low intensity fire.Resistance and resilience to disease and harmful insect outbreaks.Ability to shift structurally and compositionally in the face of climate change.Use landscape scale analysis to evaluate opportunities to collaborate on vegetation management projects occurring on lands adjacent to BLM. In areas where adjacent land uses do not meet BLM objectives, BLM will look for opportunities to offset or mitigate the effects of adjacent land uses.Where applicable and effective, implement vegetation management actions that reduce the likelihood of catastrophic wildfire that could drastically alter the type or trajectory of vegetation community composition.Work with Tribes to provide opportunity for Native American harvest of traditional-use plant materials and forest products. Incorporate native species that are culturally significant to Native American communities in restoration and enhancement projects. Permitted Surface-disturbing Activities <ul style="list-style-type: none">All surface-disturbing BLM-permitted activities must adhere to reclamation requirements described in detail under Management Actions Common to All Action Alternatives for locatable minerals and mineral materials, as necessary.When conducting restoration or reclamation, permittees must use species native to Northern California and propagules applicable for existing climatic conditions and desired ecosystem function as demonstrated by undisturbed areas and/or applicable vegetation out planting trials (planting of raised nursery plants or seeds into the natural environment). Use of locally sourced seed from within respective ecoregions is encouraged where applicable. Seed sourced from Seeds of Success Program, or equivalent program, is highly encouraged whenever feasible to meet project goals and objectives. Seed mixes and native plant material list would be approved by the BLM AO.For vegetation-removing permitted actions, BLM would request prioritized removal of certain vegetation community components determined on a case-by-case basis to maintain a balanced mosaic of successional states.Where practicable, the AO may require BLM-permitted operators to salvage and store the vegetative mat and topsoils for restoration/reclamation. These would include small scale projects where the vegetation mat can be kept alive and restored in a timely fashion (before the vegetation mat dies). If the AO decides that vegetative mat and topsoil cannot be salvaged, other		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
41 (cont.)	(see above)	<p>measures to protect vegetation and soils would be considered, including (but not limited to) emergency stabilization or importation of native weed-free topsoil and vegetative mat or material from an exterior source.</p> <ul style="list-style-type: none"> Existing roads and trails would be utilized for access where feasible, rather than creating new roads and trails. <p>Changing Vegetation Conditions and Adaptive Management</p> <ul style="list-style-type: none"> Consider climate change, shifts in habitat suitability, and species distribution shifts in project design and implementation. <p>BLM would use a combination of Assessment Inventory and Monitoring (AIM) methods, Rangeland Health Assessments (RHA), and legacy methods currently implemented by BLM for long term monitoring projects to assess vegetation condition on BLM-managed lands. State and transition models from approved Ecological Site Descriptions (ESDs) and RHAs could be used (if or when available) in addition to best available data to evaluate potential changes in vegetation communities, as necessary. Using the most up to date science and data available, management changes would be implemented to best address the vegetation trends. Accordingly, the management actions associated with each vegetation cover type described in the matrix below would consider variables associated with disturbance, climate change or other factors when implementing projects.</p>		
42	<p>Management Direction: Arcata RMP 1992 Butte Creek MA Enhance old-growth forest characteristics and related wildlife species, particularly the Enhance riparian condition in Butte Creek.</p>	<p>Management Direction: No similar management action.</p>		
43	<p>Management Direction: Arcata RMP Forest Plan Amendment 1995 Timber harvest may be undertaken on the forested matrix lands if suitable opportunities are identified, consistent with NVFP guidelines. Timber harvest may also be undertaken following fire or to improve forest health conditions of previously entered stands. Any herbicide use will be consistent with procedures and limitations outlined in the California Vegetation Management ROD (USDI BLM 1988b). Herbicide use will also comply with the applicable management objectives and standards and guidelines of the NVFP. Those standards and guidelines providing the greater benefits to late-successional forest-related species will apply.</p>	<p>Management Direction: No similar management action.</p>		
44	<p>Management Direction: Arcata RMP Samoa Amendment 1995 Peninsula (Area-wide) Monitor botanical and cultural resources. Conduct dune restoration and exotic plant removal. Continue to work with local governments in the management of the entire peninsula. Samoa Dunes Protect coastal wetlands, and other natural values. Manila Dunes Enhance natural values and dune ecosystem.</p>	<p>Management Direction: No similar management action.</p>		
45	<p>Management Direction: Redding RMP 1993 DPCs will be developed as specific activity plans are designed for the remainder of the Redding FO. Klamath MA Shasta and Klamath Rivers Canyon Restore riparian vegetation to Class II or better. Upper Klamath River Improve the condition of riparian vegetation to Class II or better.</p>	<p>Management Direction: No similar management action.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
45 (cont.)	<p>Shasta Valley Wetlands Provide long-term protection and enhancement of native wetlands. Develop an integrated resource activity plan for the Shasta Valley Wetlands if BLM acquires available privately owned unimproved lands within the area. The activity plan will be developed in cooperation with CDFW, Caltrans, the Siskiyou County, and interested organizations/individuals. The plan will identify forage allocation and DPCs for domestic and native grazing, acquisition/cooperative management needs, a network of management facilities to protect the native wetlands, wildlife productivity targets, water quality base and target standards, and public access needs that do not adversely impact the native biota.</p> <p>Trinity River MA Develop an integrated resource activity plan(s) within the area north of the Trinity River and within the lower Indian Creek and Deadwood Creek areas. The plan will identify priority land acquisitions and detail the DPCs for upland/riparian ecological sites assess reforestation needs. Maintain the riparian habitat in Class I or Class II condition.</p> <p>North of Trinity River/Deadwood/Indian Creek: Maintain the riparian and fisheries habitat of anadromous fisheries streams including Canyon, Indian, and Deadwood Creeks.</p> <p>Shasta MA Lower Clear Creek and Mule Mountain Restore the quality and quantity of riparian vegetation to Class I and Class II. Protect the native plant communities and associated fauna of the area.</p> <p>Sacramento River MA Sacramento Island Improve and increase the Great Valley – Valley Oak Riparian Forest.</p> <p>Cottonwood Creek and Sacramento River parcels Protect the riparian values of these scattered public lands.</p> <p>Bend Area Protect existing and improve degraded riparian vegetation to Class I and II. Enhance wetlands (native and human-made) and dependent species.</p> <p>Ishi MA Battle Creek (below Manton Road) Maintain and improve the quality and quantity of riparian vegetation.</p> <p>Forks of Butte Creek Improve the quality and quantity of riparian vegetation to Class I.</p> <p>Upper Ridge Nature Preserve Protect the mixed evergreen, riparian and oak woodland vegetation as well as the associated fauna.</p>	(see above)		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
46	Management Direction: No similar management action.	Management Direction: Vegetation resources would be managed by vegetation cover type as described below. Chaparral Shrubland: <ul style="list-style-type: none"> • Manage resilient, diverse, and heterogenous chaparral communities that provide wildlife habitat. • Treat to maintain heterogeneity of structure, age class, species where possible. • Prioritize retention of oaks where community types intermingle. • Implement strategic vegetation treatments (prescribed fire and mechanical) to promote regeneration and provide habitat heterogeneity where appropriate. • In developed recreation areas, manage for aesthetics and to reduce fuel loading. • Identify areas with a high likelihood for expansion of shrublands due to climate change and ecosystem type conversion following frequent, high severity wildfire and consider management actions as appropriate. 		
47	Management Direction: No similar management action.	Management Direction: Coastal Forests <ul style="list-style-type: none"> • Continue to manage coastal forest (Sitka spruce and beach pines) while maintaining recreational access. • Protect coastal grassland communities with targeted conifer removals, including converting forests in historic grassland areas to functioning prairies where appropriate. • Manage to maintain Sitka spruce and allow for natural processes to occur. • Allow dunes and associated vegetation communities to migrate into coastal forests in response to sea level rise. 		
48	Management Direction: No similar management action.	Management Direction: Coastal Prairies <ul style="list-style-type: none"> • Implement woody vegetation removal projects to enhance and restore coastal grassland communities. • Use prescribed burning to promote native grassland species and restoration outcomes. • Plant native grassland vegetation including native forbs which support pollinator habitat. • Where appropriate, promote below-ground carbon sequestration through the planting of native vegetation. • Utilize soil amendments such as woodchips and biochar, where feasible and appropriate, to increase soil fertility, promote root growth and increase carbon sequestration. 		
49	Management Direction: No similar management action.	Management Direction: Douglas Fir and Tanoak-dominated Forest <ul style="list-style-type: none"> • Where appropriate, implement restoration of Douglas-fir tanoak Forest type by conducting projects to promote late seral stand characteristics. • Areas with sudden oak death, and at risk of SOD spread, will be the focus for treatments to slow the spread of SOD, encourage resistance to SOD, and mitigate the effects of mortality. • Conduct proactive planting strategies for conifers to decrease hardwood component, where appropriate. • Conduct vegetation treatments to reduce evapotranspiration and provide for increased summer stream flows where appropriate. 		
50	Management Direction: No similar management action.	Management Direction: Dunes <ul style="list-style-type: none"> • Support restoration and maintenance of native plant vegetation and associated dune processes through nonnative and invasive plant management that is consistent with endangered species recovery recommendations and best available science relative to coastal resilience. • Allow for natural dune migration where appropriate. • Allow for heavy equipment use and integrated pest management techniques in coastal dune restoration activities as well as for snowy plover habitat creation and OHV trail construction and maintenance. • Manage OHV and recreation impacts to reduce impacts to native plant communities. 		
51	Management Direction: No similar management action.	Management Direction: Fallow Fields and Croplands (walnut orchards, abandoned fields, etc.) <ul style="list-style-type: none"> • Restore agricultural fields or areas of degraded habitat to healthy communities of native vegetation. • Utilize mechanical and chemical treatments to remove nonnative crop species. • Implement native seeding treatments to maintain or improve the native seed bank and natural regeneration. • Prescribed fire would be permitted to combat nonnative and invasive populations and promote native species regeneration. 		
52	Management Direction: No similar management action.	Management Direction: Oak Woodland <ul style="list-style-type: none"> • Reduce conifer encroachment and enhance regeneration of oak species and the associated understory plant communities. • Preserve patches of oak found in conifer forests. Retain mature, healthy oak trees as seed trees whenever possible. • Manage oak woodland, where appropriate, to maintain functionality of riparian habitat. 		
53	Management Direction: No similar management action.	Management Direction: General Riparian This cover type is a subset of all previously mentioned vegetation cover types. Refer to the Riparian Management Area section (below) for further detail.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
54	Management Direction: No similar management action.	Management Direction: Grasslands, Vernal Pools, and Wetlands <ul style="list-style-type: none"> Promote native species diversity to support pollinator and wildlife habitat. Implement prescribed fire treatments where applicable to stimulate native species recruitment and vigor. Maintain, enhance, and restore native perennial grassland community composition, including forbs and other grassland species. Address conifer encroachment through a mix of treatment methods. In grasslands connected to vernal pool habitat, maintain and improve hydrologic connectivity and flow, where appropriate. Fire suppression activities would be restricted in vernal pools to minimize resource damage, unless otherwise approved by the AO. Maintain and improve hydrologic connectivity and flow in wetland habitat and implement water projects as practicable to enhance and restore wetland habitat. 		
55	Management Direction: No similar management action.	Management Direction: Juniper and Sagebrush <ul style="list-style-type: none"> Control juniper expansion into historic sagebrush habitat. Maintain diverse ecosystem of sagebrush steppe with native perennial grass understory. Maintain old-growth juniper for wildlife habitat. 		
56	Management Direction: No similar management action.	Management Direction: Knobcone <ul style="list-style-type: none"> Where knobcone stands are close to communities and infrastructure, manage these stands to reduce the impact of high intensity wildfire to the communities and infrastructure. Manage vegetation communities to reduce the risk of high severity fire which could lead to the establishment of a knobcone monoculture. 		
57	Management Direction: No similar management action.	Management Direction: Late Successional Forest <ul style="list-style-type: none"> Manage for older, more, structurally complex multi-layered forests using or a mix of treatment methods as appropriate. Manage for snag and coarse woody debris components in the ecosystem. Manage late succession conifer forest, where appropriate, to maintain functionality of riparian habitat. 		
58	Management Direction: No similar management action.	Management Direction: Mixed Conifer <ul style="list-style-type: none"> Manage for stand growth and decreasing stem density to develop late successional forest characteristics where possible. Promote a heterogenous patchwork of structure types and compositions, maintaining oak components as appropriate. Implement projects that increase resilience to disturbance events. Conduct vegetation treatments to reduce evapotranspiration and provide for increased summer stream flows where appropriate. Manage upland vegetation to support riparian function. 		
59	Management Direction: No similar management action.	Management Direction: Oak Savannas and Open Woodlands <ul style="list-style-type: none"> In valley and blue oak areas focus on ensuring adequate regeneration, especially in converted agricultural fields where natural regeneration is extremely limited. Retain mature, healthy oak trees as seed trees whenever possible. Manage to encourage a healthy, heterogenous size class distribution of oak species. Reduce annual invasive species to the maximum extent possible, especially highly damaging species such as medusa head and cheatgrass. Continue the restoration, maintenance, and enhancement of native annual and perennial grass and forb populations where feasible. Manage conifer and shrub encroachment by performing a mix of treatment methods. Manage oak woodland, where appropriate, to maintain functionality of riparian habitat, including vernal pools. 		
60	Management Direction: No similar management action.	Management Direction: Rare Cypress Forest <ul style="list-style-type: none"> Manage to increase the frequency of disturbance to enhance regeneration and health. (See Baker Cypress ACEC, Eden Valley ACEC, and Eden Creek ACEC.) Manage for increased regeneration of rare cypress by addressing conifer encroachment through a mix of treatment methods. 		
61	Management Direction: No similar management action.	Management Direction: Valley Foothill Riparian: <ul style="list-style-type: none"> Restore areas of degraded habitat to healthy, diverse native vegetation communities. Manage for elderberry maintenance and restoration. Prioritize acquisition and restoration of land that creates habitat connectivity. Manage riparian areas to allow for natural stream processes including floodwater access to floodplains. Work with agency partners and surrounding landowners to mitigate and/or restore this habitat. Implement mechanical, chemical, and biological treatments to combat invasive plant populations. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
62	Other			
63	Management Direction: Nonnative and Invasive Terrestrial and Aquatic Species Any herbicide use will be consistent with procedures and limitations outlined in the Vegetation Treatments on Bureau of Land Management Lands in 17 Western States ROD (2007a); Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States ROD (2007b); Vegetation Treatments using Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States Final Programmatic Environmental Impact Statement (2016), and will follow state regulations and guidelines. Herbicide use will also comply with the applicable management objectives and standards and guidelines of the NVVFP. Those standards and guidelines providing the greater benefits to late-successional forest-related species will apply.	Management Direction: Nonnative and Invasive Terrestrial and Aquatic Species Same as Alternative A, with the following additions: <ul style="list-style-type: none">• Work with federal agencies, Tribes, state and county agencies, and private landowners with adjacent lands to coordinate invasive species management to effectively eradicate nonnative and invasive species populations that cross jurisdictional boundaries.• Utilize state and other databases (e.g., Cal IPC) to prioritize vegetation treatments.• Continue to participate in weed management areas.• Prioritize nonnative and invasive species treatments in existing ROWs, locations with smaller populations where early treatment would lead to successful eradication, ACECs, designated recreation areas, and sensitive habitat types as described in this RMP.• Survey for nonnative and invasive species in post-burn areas and disturbed areas (e.g., wildfire control/contingency lines, staging areas); prioritize for treatment if invasive species management specialist determines the vegetation community is at risk of substantial conversion to nonnatives.		
64	Management Direction: Arcata RMP 1992 Samoa Dunes Protect specific populations of Menzies’ wallflower (<i>Erysimum menziesii</i>) and beach layia (<i>Layia carnosa</i>). Manila Dunes Enhance natural values. Protect sensitive species according to the BLM Sensitive Species Policies (Appendices 2-3 and 2-4 in Arcata RMP 1992). T&E species management will follow Section 7 consultation procedures in accordance with the ESA. Species proposed for listing, such as the beach layia, will follow USFWS conferencing requirements concerning the conservation and recovery of proposed federally listed species. Designate the entire 150 acres of the Manila Dunes as an ONA\ACEC for protection and interpretation of natural values. Monitor Menzies’ wallflower and beach layia. Red Mountain MA Enhance and facilitate protection of unique botanical values – particularly <i>Arabis macdonaldiana</i> . Implement Arabis Recovery Plan	Management Direction: No similar management action.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
65	<p>Management Direction: Arcata RMP Samoa Amendment 1995 Samoa Peninsula Protect sensitive species according to the BLM Sensitive Species Policies (BLM Manual Section 6840). T&E species management will follow Section 7 consultation procedures in accordance with the ESA. Monitor botanical resources. Conduct dune restoration and exotic plant removal. Continue to work with local governments in the management of the entire peninsula.</p> <p>Samoa Dunes Protect specific populations of Humboldt Bay wallflower, beach layia, coastal wetlands, and other natural values.</p> <p>Manila Dunes Enhance natural values and dune ecosystem. Protect specific populations of Humboldt Bay wallflower and beach layia populations, and potential nesting sites for the western snowy plover. Maintain the entire 150 acres of the Manila Dunes as an RNA/ACEC for protection and interpretation of natural values.</p>	<p>Management Direction: No similar management action.</p>		
66	<p>Management Direction: Arcata RMP Forest Plan Amendment 1995 Covelo Vicinity MA Manage habitats for endangered plants and animals within larger ecosystems.</p> <p>Red Mountain MA Manage habitats for endangered plants and animals within larger ecosystems. Enhance and facilitate protection of unique botanical resources, particularly <i>Arabis macdonaldiana</i>.</p>	<p>Management Direction: No similar management action.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
67	<p>Management Direction:</p> <p>Redding RMP 1993</p> <p>A processing delay notice for fluid minerals leases will be used to protect sensitive plant species and their habitat from the surface-disturbing effects of fluid minerals development. The BLM's current knowledge of the location of these is due to a limited, but increasing, inventory base, and a constantly changing list of plant species that are considered sensitive species. This notice will be included in new mineral leases that occur on lands identified as having suitable habitat for these species. A fluid minerals lease notice for the protection of T&E species will be included on all leases where these species are thought to exist. Current inventory is not sufficient to define all these areas at the present time. When existing mineral leases expire, the affected lands will be subject to the requirements of this RMP for any new exploration, leasing, and development actions.</p> <p>Shasta MA</p> <p>Recognize certain special-status species of plants and wildlife that merit attention in the management of the public lands. Minimize the decline of those species designated as special status through the mitigation of resource management impacts. Promote the enhancement of special-status species through positive management of their habitats and populations.</p> <p>Sacramento River MA</p> <p><u>Bend Area</u></p> <p>Ensure long-term survival of special status species.</p> <p>Hawes Corner</p> <p>Ensure the long-term survival of <i>Orcuttia tenuis</i>.</p> <p>Acquire available, unimproved privately owned portion of <i>Orcuttia tenuis</i> habitat or develop cooperative management agreement to protect the habitat. Contact adjoining landowner(s) to help protect the <i>Orcuttia tenuis</i> habitat or to purchase the private interests. Secure an administrative easement to provide access for management and install necessary facilities to preclude vehicle or grazing usage of the habitat. Develop an RNA/ACEC management plan to identify protection and monitoring needs.</p> <p>Klamath MA</p> <p><u>Interlakes SRMA</u></p> <p>Acquire available unimproved lands that provide legal public access to adjoining public lands, complete segments of recreational trails, enhance protection of sensitive resources, provide opportunities for public interpretation, enhance reforestation efforts (including habitat improvement for sensitive species), or enhance long-term administration of the area.</p> <p>Maintain special-status species habitat.</p>	<p>Management Direction:</p> <p>No similar management action.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
67 (cont.)	<p><u>West of French Gulch</u> Acquire available unimproved lands that enhance long-term forestry management, possess critical habitat for wintering deer, contain significant cultural resources, enhance protection or restoration of special-status species habitat, provide physical access to public lands, or enhance long-term administration of the area.</p> <p><u>Shasta Valley Wetlands:</u> Develop an integrated resource activity plan for the Shasta Valley Wetlands if BLM acquires available privately owned unimproved lands within the area. The activity plan will be developed in cooperation with CDFW, Caltrans, Siskiyou County, and interested organizations/individuals. The plan will identify forage allocation and DPCs for domestic and native grazing, acquisition/cooperative management needs, a network of management facilities to protect the native wetlands, wildlife productivity targets, water quality base and target standards, and public access needs that do not adversely impact the native biota. Protect the habitat and existing stands of Baker cypress. Encourage research of this species in conjunction with genetic and habitat studies of other stands of Baker cypress.</p> <p>Ishi MA Protect the habitat and existing stands of Baker cypress. Encourage research of this species in conjunction with genetic and habitat studies of other stands of Baker cypress. Area is closed to grazing. Vehicles are limited to designated roads and trails. Offer for mineral leasing with no surface occupancy.</p>	(see above)		
68	<p>Management Direction: No similar management action.</p>	<p>Management Direction:</p> <ul style="list-style-type: none">• Vegetation cover types in the planning area would be managed for the following, a heterogenous patchwork of habitat types that provides for conservation of federally listed and BLM Sensitive plant species.• Incorporate protection measures for rare habitats into fire response activities.• Prioritize active management needs for BLM sensitive species, including those that are adapted to disturbance. Implement actions to promote recovery of Threatened and Endangered species.• Implement actions to prevent Sensitive Species from becoming Threatened or Endangered. Implement actions to prevent species from being added to BLM-sensitive or federally listed species list.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
69	Wildlife (including Special Status Species and Invasive, Nonnative Species)			
70	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none"> Engage local Tribes, state, and federal partners in program and project design to address management issues, develop and implement proactive conservation and recovery actions, and minimize or avoid impacts to special status wildlife species and their habitats across jurisdictional boundaries. Inventory and monitor special status species and their habitats to contribute to a greater understanding of their abundance and distribution and facilitate implementation of conservation and recovery actions within the planning area. Coordinate with FWS and CDFW (as necessary) in the reintroduction of native species in appropriate locations. Coordinate with CDFW and USFWS if any conflicts arise within grazing allotments. Conflicts would be addressed at the implementation level. Secure and improve wetland waterfowl habitat. Consolidate and create larger protected blocks of habitat through land tenure adjustments. Protect wildlife corridors through land tenure adjustments. Promote and restore healthy riparian habitat throughout the planning area. Manage for wildlife habitat resiliency to climate change, including management of refugia and Essential Connectivity Corridors of High Biological Value. Manage forest habitats for habitat heterogeneity rather than focusing on late-successional forest and mature forest. Identify key wildlife corridors to restore or protect habitat and consider corridors when making decisions on infrastructure changes and land uses. Protect areas with special value and unique character (Examples include coastal and near-coastal forest and plains, wetlands). Coordinate with CDFW in management of game species. Where applicable, preserve streamside properties that serve as natural wildlife corridors. Pursue water rights acquisitions to enhance wildlife habitat restoration and promote climate change resilience. Promote recovery of special status species through the development and implementation of proactive recovery and conservation actions. 		
71	Management Direction: Arcata RMP 1992 Contains planning decisions amended for lands affected by the NWFP: Continue avoiding jeopardizing the existence of any federally listed or state listed or proposed species, actively promote species recovery, and work to continue to improve the status of candidate and sensitive species. The NSO is federally listed as threatened. Management actions will comply with the protective measures of the Final Draft Recovery for the Northern Spotted Owl (USFWS 1992). A new recovery plan was published in 2011 (USFWS 2011). The marbled murrelet is federally listed as a threatened species. Management actions will comply with the recovery plan completed in 1997 (USFWS 1997). The American peregrine falcon is federally listed as endangered. Management actions will comply with the Pacific States Peregrine Falcon Recovery Plan protection measures (USFWS 1982). Peregrine falcons were delisted in 1999 (USFWS 1999). The northern bald eagle is federally listed as endangered in California. Management actions will comply with the Pacific States Bald Eagle Recovery Plan (USFWS 1986). Bald eagles were delisted in 2007.	Management Direction: <ul style="list-style-type: none"> Implement actions to prevent Sensitive Species from becoming Threatened or Endangered. Implement actions to prevent species from being added to BLM-sensitive or federally listed species list. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
72	<p>Management Direction:</p> <p>Northwest Forest Plan 1994</p> <p>Amended the Arcata and Redding plans within the range of the NSO including land use allocations and standard and guidelines. ESA requires consultation with USFWS for actions that may impact T&E species.</p> <p>BLM must carry out management consistent with multiple use for conservation of special-status species and their habitats and must ensure that actions authorized, funded, or carried out do not contribute to the need to list any species as threatened or endangered. Any federally authorized, funded, or implemented actions that may affect federally listed or proposed species are reviewed in coordination with USFWS.</p> <p>Pre-project protocol surveys for marbled murrelet. Protect 0.5-miles radius around existing and recruitment marbled murrelet habitat.</p> <p>Retain 100 acres of the habitat around NSO nest sites in matrix and adaptive management areas. Timber management within the retained areas should comply with LSR guidelines.</p> <p>Established pre-project survey requirements for marbled murrelets and buffer zones around marbled murrelet (0.5 mi) occupied habitat and known NSO territories.</p> <p>Established buffers and protection zones for great gray owls (<i>Strix nebulosa</i>).</p> <p>Established guidance for management of Siskiyou Mountain salamander and Del Norte salamander.</p>	<p>Management Direction:</p> <ul style="list-style-type: none">• Implement actions to prevent Sensitive Species from becoming Threatened or Endangered.• Implement actions to prevent species from being added to BLM-sensitive or federally listed species list.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
73	<p>Management Direction: Arcata RMP Forest Plan Amendment 1995 Management of 72,764 acres as LSRs would maintain and enhance habitat for late-successional and old-growth related species such as NSOs and marbled murrelets.</p> <p>Acquisition of 12,389 acres would enhance the long-term ability of the Lacks Creek DCA to support USFWS' draft final recovery plan numerical goals for pairs of NSOs.</p> <p>Direct acquisition of 5,480 acres and development of cooperative management partnerships for 8,500 acres of non-federal land would enhance the long-term ability of DCAs in the Red Mountain Management Area to support USFWS' draft final recovery plan numerical goals for pairs of NSOs.</p> <p>Known NSO activity centers within the matrix would be protected through management as "unmapped" LSRs.</p> <p>Nesting habitat for the federally threatened marbled murrelet would be protected through compliance with the ESA consultation requirements, future recovery plan, and NWFP land allocations and standards and guidelines.</p> <p>Habitat for the federally endangered peregrine falcon would be protected through compliance with the ESA and recovery plan.</p> <p>Acquisition of 1,720 acres in the Charlton Creek, Bell Springs, and Tenmile Creek watersheds (Red Mountain Management Area) would provide additional protection for peregrine falcon nesting and foraging sites.</p> <p>Habitat for the federally endangered northern bald eagle would be protected through compliance with the ESA and the Pacific Bald Eagle Recovery Plan. Improvements in riparian habitat and water quality (through implementation of Riparian Management Area standards and guidelines and management of Tier I Key Watersheds) would benefit bald eagle recovery by providing an increasing number of potential nest sites and an improved prey base.</p>	<p>Management Direction:</p> <ul style="list-style-type: none">• Use a habitat-based metric to track changes in habitat for sensitive or listed species (for example NSO and marbled murrelet). Where practicable, increase the available suitable habitat through forest health vegetation management in LSRs/late-successional forest.		
74	<p>Management Direction: Arcata RMP Samoa Amendment 1995</p> <p>Protect sensitive species according to the BLM sensitive species policies (USDI BLM Manual Section 6840). T&E species management will follow Section 7 consultation procedures in accordance with the ESA.</p>	<p>Management Direction: No similar management action.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
75	<p>Management Direction: Northwest Forest Plan Survey and Manage Amendment 2001 Rare Relative Rarity Pre-Disturbance Surveys Practical: Category 1A (57 species)</p> <ul style="list-style-type: none">• Manage All Known Sites• Pre-Disturbance Surveys• Strategic Surveys <p>Pre-Disturbance Surveys Not Practical: Category 1B (222 species)</p> <ul style="list-style-type: none">• Manage All Known Sites• N/A• Strategic Surveys <p>Status Undetermined: Category 1E (22 species) Manage All Known Sites N/A Strategic Surveys Uncommon Rarity Pre-Disturbance Surveys Practical: Category 1C (10 Species)</p> <ul style="list-style-type: none">• Manage High-Priority Sites• Pre-disturbance Surveys• Strategic Surveys <p>Pre-Disturbance Surveys Not Practical: Category 1D (14 Species)</p> <ul style="list-style-type: none">• Manage High-Priority Sites• N/A• Strategic Surveys <p>Status Undetermined: Category 1F (21 Species)</p> <ul style="list-style-type: none">• N/A• N/A• Strategic Surveys <p>Updated guidance for bat roosts and cavity nesting birds. Instituted survey guidelines for species survey and manage species identified in the NWFP.</p>	<p>Management Direction: No similar management action.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
76	<p>Management Direction: Arcata RMP Forest Plan Amendment 1995 Management of 72,764 acres as LSRs would maintain and enhance habitat for late-successional and old-growth related species such as NSOs and marbled murrelets.</p> <p>Acquisition of 12,389 acres would enhance the long-term ability of the Lacks Creek DCA to support USFWS' draft final recovery plan numerical goals for pairs of NSOs.</p> <p>Direct acquisition of 5,480 acres and development of cooperative management partnerships for 8,500 acres of non-federal land would enhance the long-term ability of DCAs in the Red Mountain Management Area to support USFWS' draft final recovery plan numerical goals for pairs of NSOs.</p> <p>Known NSO activity centers within the matrix would be protected through management as "unmapped" LSRs.</p> <p>Nesting habitat for the federally threatened marbled murrelet would be protected through compliance with the ESA consultation requirements, future recovery plan, and NWFP land allocations and standards and guidelines.</p> <p>Habitat for the federally endangered peregrine falcon would be protected through compliance with the ESA and recovery plan.</p> <p>Acquisition of 1,720 acres in the Charlton Creek, Bell Springs, and Tenmile Creek watersheds (Red Mountain Management Area) would provide additional protection for peregrine falcon nesting and foraging sites.</p> <p>Habitat for the federally endangered northern bald eagle would be protected through compliance with the ESA and the Pacific Bald Eagle Recovery Plan. Improvements in riparian habitat and water quality (through implementation of Riparian Management Area standards and guidelines and management of Tier I Key Watersheds) would benefit bald eagle recovery by providing an increasing number of potential nest sites and an improved prey base.</p>	<p>Management Direction:</p> <ul style="list-style-type: none">• Use a habitat-based metric to track changes in habitat for sensitive or listed species (for example NSO and marbled murrelet). Where practicable, increase the available suitable habitat through forest health vegetation management in LSRs/late-successional forest.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
77	<p>Management Direction:</p> <p>Arcata RMP Forest Plan Amendment 1995</p> <p>Covelo Vicinity MA Manage habitats for endangered plants and animals. Re-establish ecological processes such as fire to maintain terrestrial habitat. Promote mature forest characteristics for restoration and biodiversity.</p> <p>Lacks Creek MA Provide core habitat for wildlife to recover federally listed species and to conserve special-status species so that no BLM action contributes to the need for listing. Manage public lands to prevent deterioration of special-status species' habitat thereby precluding the need for state or federal listing of those species. This includes the following objectives:</p> <ul style="list-style-type: none">• Recognize certain special-status species of plants and wildlife that merit attention in the management of the public lands.• Minimize the decline of those species designated as special status through the mitigation of resource management impacts.• Promote the enhancement of special-status species through positive management of their habitats and populations. <p>Scattered Tracts MA Maximize contribution of public lands to regional plans for managing biodiversity. Protect sensitive species according to the BLM Sensitive Species Policies (BLM Manual Section 6840). T&E species management will follow Section 7 consultation procedures in accordance with the ESA. Sample vegetation and residual mulch for wildlife quality. Allocates forage for wildlife and livestock. Continue inventories of areas identified as HCA/critical habitat.</p> <p>Red Mountain MA Establish the management area as a lowland Douglas-fir population center for the NSO, maintaining habitat for a minimum of twenty pair sites. Re-establish and accelerate mature forest characteristic to promote biodiversity. Secure and enhance historic peregrine falcon nests by placing nest sites in public ownership. Protect sensitive species according to the BLM California Sensitive Species Policies. Monitor peregrine falcons, spotted owls and other unique resources. Continue inventory of habitat conservation/ critical habitat areas.</p>	<p>Management Direction:</p> <ul style="list-style-type: none">• Protect and restore important habitat for native wildlife (e.g., riparian areas, late-successional forest stands, oak woodlands, chaparral, native grasslands, vernal pools, healthy rivers).• Implement actions to promote recovery of Threatened and Endangered species.• Implement actions to prevent Sensitive Species from becoming Threatened or Endangered.• Implement actions to prevent species from being added to BLM-sensitive or federally-listed species list.• Protect migratory and resident bird populations, and the areas that provide habitats for these species.• Monitor wildlife and habitat to determine population and habitat trends.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
78	<p>Management Direction:</p> <p>Redding RMP 1993</p> <p>All public lands in the Redding Resource Area are considered for enhancement and protection of the wildlife habitat resource. The goal is to manage the public lands so as to prevent deterioration of special-status species' habitat thereby precluding the need for state or federal listing of those species. Recognize certain special-status species of plants and wildlife that merit attention in the management of the public lands. Minimize the decline of those species designated as special status through the mitigation of resource management impacts. Promote the enhancement of special-status species through positive management of their habitats and populations. Acquire approximately 17,500 acres of wetlands to benefit waterfowl. BLM will manage public lands in a manner that is consistent with the State of California's HCP and the USFWS's Recovery Plans. Releases and re-introduction of native wildlife species could be authorized by the BLM State Director, following proper compliance with the NEPA and coordination with the CDFW. The BLM is an active participant in the Trinity River Restoration Program (TRRP) for the purpose of implementing the Trinity River Basin Fish and Wildlife Restoration Act. Manage public lands to prevent deterioration of special-status species' habitat thereby precluding the need for state or federal listing of those species. This includes the following objectives:</p> <ul style="list-style-type: none">• Recognize certain special-status species of plants and wildlife that merit attention in the management of the public lands.• Minimize the decline of those species designated as special status through the mitigation of resource management impacts.• Promote the enhancement of special-status species through positive management of their habitats and populations. <p>Ishi MA</p> <p>Protect the wildlife habitat of the Battle Creek canyon. Ensure long-term protection of raptors within the Deer Creek canyon.</p> <p>Klamath MA</p> <p>Improve the existing public administered deer winter range habitat and afford long-term protection for additional privately owned deer winter range habitat. Enhance waterfowl production and terrestrial wildlife habitat in Shasta Valley Wetlands.</p> <p>Sacramento River MA</p> <p>Enhance existing and develop additional waterfowl habitats on Sacramento Island. Enhance wetlands (native and human made) and dependent species on the Bend Area. Ensure long-term survival of special-status species at the Bend Area.</p>	<p>Management Direction:</p> <ul style="list-style-type: none">• Implement recovery actions for listed species with USFWS and NMFS recovery plans such that the measurable results of these actions contribute to meeting de-listing and down-listing criteria for a given species.• Implement actions to promote recovery of Threatened or Endangered species.• Implement actions to prevent Sensitive Species from becoming Threatened or Endangered.• Implement actions to prevent species from being added to BLM-sensitive or federally listed species list.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
78 (cont.)	<p>Scott Valley MA Ensure the long-term protection of the deer winter range. Protect raptors, including spotted owls, within the area.</p> <p>Shasta MA Improve the long-term condition and protection of deer winter range habitat in the Interlakes and West of French Gulch areas. Maintain special-status species habitat in the Interlakes area. Protect the native plant communities and associated fauna in the Lower Clear Creek Area <u>Swasey Drive Area Implementation Plan Shasta County, CA</u> Management Actions: Ground-disturbing projects will maintain a 100-foot buffer from Olney Creek unless approved through project review. Federally protected anadromous species listed under the ESA and BLM sensitive species (foothill yellow-legged frog, terrestrial mollusk species, and bat species) will be evaluated for presence and potential impacts prior to project approval. Game species and other fish and wildlife species are managed under CDFW regulations and as mandated in BLM Manual 6840 (Special Status Species Management).</p> <p>Trinity MA Maintain and enhance if feasible the quality of spotted owl habitat on Tunnel Ridge. Maintain the quality of existing deer winter range habitat on Tunnel Ridge. Protect existing habitat for special-status species including bald eagle and spotted owl. Manage the Eastman Gulch Owl Habitat Area in cooperation with the Trinity National Forest.</p> <p>Yolla Bolly MA Conduct resource inventories for special-status species on lands available for exchange.</p>	(see above)		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
79	<p>Management Direction: No similar management action.</p>	<p>Management Direction:</p> <ul style="list-style-type: none"> Assess the geographic patterns of species migrations and develop a framework for land acquisitions to facilitate species migrations in response to climate change. Protect migratory and resident bird populations, and the areas that provide habitats for these species. Utilize scattered parcels of BLM-administered land to benefit wildlife habitat where possible. Manage coastal properties to maintain wildlife habitat for native species (western snowy plover, etc.) Follow apiary guidance as described in <i>Lands and Realty – Use Authorizations</i> section. Follow management of dune systems/vegetation cover type as described in the Vegetation Section – including allowing for active dune dynamics to continue to occur. Where practicable, implement forest health projects to benefit federally listed and BLM-sensitive wildlife species. Implement management actions to mitigate the impacts of climate change on wildlife populations and habitat. Assist state and federal wildlife agencies with wildlife relocations or reintroductions where necessary to promote functioning ecosystems. All federally listed critical habitats are ROW avoidance areas. Any development would be required to comply with ESA and BLM habitat management goals. Implement habitat treatments to enhance, restore, and maintain habitat in Essential Connectivity Corridors of High Biological Value. <p>Bats</p> <ul style="list-style-type: none"> Implement the following guidance for protection of caves and mines that are used as roost sites for bats: <ul style="list-style-type: none"> Conduct surveys of crevices in caves and mines for the presence of roosting bats, including fringed myotis, silver-haired bats, long-eared myotis, long-legged myotis, and pallid bats. If bats are found, identify the species using the site and determine for what purpose it is being used by bats. As an interim measure, timber harvest is prohibited within 250 feet of caves and mines containing bats. Management standards and guidelines that may be included as mitigation measures in project or activity plans will be developed for the site. These standards will be developed following an inventory and mapping of resources. The purpose of the standards and guidelines will be protection of the site from destruction, vandalism, disturbance from road construction or blasting, or any other activity that could change cave or mine temperatures or drainage patterns. The size of the buffer, and types of activities allowed within the buffer, may be modified through the standards developed for the specific site. Retention of abandoned bridges or buildings must be made contingent on safety concerns. When Townsend's big-eared bats are found occupying caves or mines on federal land, the appropriate agency should be notified, and management prescriptions for that site should include special consideration for potential impacts on this species. Implement any subsequent guidance issued by federal and state agencies as applicable. All BLM-permitted activities and mine closures with the potential to impact bat hibernacula would be required to perform bat surveys as per agency accepted protocols to determine presence/absence and habitat suitability for bats prior to project implementation. BLM-permitted activities would avoid disturbing bat hibernacula to the extent practicable. This would include (but may not be limited to) occupied cave/karst, abandoned mine adits and shafts, and abandoned structures. If not practicable, mitigation would be required to replace all habitat values removed by the project through on-site, off-site, or compensatory mitigation. White-nose syndrome decontamination protocol would be applied when working with bats. <p>Monarch Butterfly and Native Pollinators</p> <ul style="list-style-type: none"> Manage for monarch butterfly and other pollinator habitat in suitable areas. Where practicable, identify opportunities to restore previously farmed land to provide Monarch and other pollinator habitat including valley oak, elderberry, and sycamore wildlife habitat. Acquire administrative access to land-locked parcels for monitoring purposes. For BLM-permitted activities, implement guidelines regarding night sky resources described in the Visual Resources section. <p>Wildlife Habitat</p> <ul style="list-style-type: none"> Include BMPs or conditions in permits to avoid degradation of wildlife habitat from adverse effects of resource use and development. These include late-successional forests habitat (Northern spotted owl, fisher, and marbled murrelet), oak and conifer woodland and chaparral (critical deer winter range), wetland habitat (waterfowl, shorebirds), migration/movement corridors (big game, wolves), riparian (yellow-billed cuckoo, elderberry beetle), vernal pool (invertebrates), and cave and karst (bats). A list of BMPs is included in Appendix F. Pursue water rights and land for purposes of expanding both wildlife habitat and recreational opportunities and access. Protect, restore, and acquire wetlands and riparian habitat. Protect, restore, and acquire big game habitat. Prioritize land tenure adjustments, including Essential Connectivity Corridors of High Biological Value. Use vegetation treatments (including prescribed fire) to increase mosaic of vegetation seral stages to improve big game habitat (oak woodland and prairie, shrub management; Oak woodlands, prairies, shrublands). See <i>Vegetation</i> Section of this matrix. Work with government agencies, Tribes, educational institutions, and non-profits to conduct research on populations, habitat conditions, and other environmental factors. Activities with the potential to disturb or destroy active bird nests would be prohibited near active nests. These activities would be allowed during the nesting season if nesting surveys for migratory birds during this period indicate no active nests or buffers are established around nests. Nesting season dates and appropriate disturbance-free buffers around nests would be identified on a case-by-case basis. Develop and implement a management plan for the Paynes Creek Wetland Complex to manage habitat and recreation. Identify and protect Gilham Butte as a critical wildlife corridor and ensure that usable habitat and migration pathways will remain. When possible, implement woodland, shrubland, and grassland treatments to enhance critical deer range. During forest health and fuels reduction projects, some component of large woody debris (LWD) would be maintained on the landscape at a level sufficient to protect wildlife habitat. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
80	Management Direction: No similar management action.	Management Direction: Manage scattered small parcels to provide connected refugia for wildlife habitat and open space in an increasingly fragmented landscape.	Management Direction: Improve access to landlocked parcels via acquisitions and/ or land tenure adjustments.	Management Direction: Manage scattered small parcels to provide connected refugia for wildlife habitat and open space in an increasingly fragmented landscape, while improving access to landlocked parcels while minimizing impacts to habitat and refugia.
81	Management Direction: No similar management action.	Management Direction: Shasta salamander and other sensitive amphibians would be managed as follows: <ul style="list-style-type: none"> Establish buffers to protect when found, survey in their habitat (limestone) 100-foot disturbance buffer around limestone 	Management Direction: No amphibian buffers would be identified.	Management Direction: Same as Alternative B.
82	Management Direction: No similar management action.	Management Direction: BLM would not allow predator control to protect listed or otherwise sensitive species.	Management Direction: <ul style="list-style-type: none"> Manage predators to protect T&E species to the extent necessary to promote T&E species conservation. Consult with USFWS and Tribes regarding potential predator management. BLM would consider predator control to protect federal or state listed or otherwise sensitive species. 	Management Direction: <ul style="list-style-type: none"> Consult with USFWS and Tribes regarding potential predator management. BLM would consider predator control to protect federal or state listed or otherwise sensitive species.
83	Management Direction: No similar management action.	Management Direction: Manage the South Spit as follows: <ul style="list-style-type: none"> Manage for 15-mile per hour speed limit. Close the Plover breeding area when breeding behavior is active. Lift closure 14 days after the last chick fledges or after the current breeding season Require dogs be on leash west of road during plover breeding season. 	Management Direction: Manage the South Spit as follows: <ul style="list-style-type: none"> Allow for 15-mile speed limit. Allow for dogs off leash during breeding season outside of designated Plover protection areas. Allow recreational access to northern section of the wave slope of the South Spit during active breeding. Manage for increased recreational access through both north and south corridor. 	Management Direction: Same as Alternative B.
84	Management Direction: No similar management action.	Management Direction: Prioritize Valley Oak riparian restoration at Rancho Briesgau and Oak Slough (Yellow-billed Cuckoos, Raptors, Migratory Birds, and Valley Elderberry Longhorn Beetles). Prioritize restoration activities in degraded riparian zones; after large scale riparian restoration has occurred, sites would be managed as: <ul style="list-style-type: none"> Closed to leasable minerals. Closed to mineral materials development. Recommend for withdrawal from locatable mineral entry. ROW exclusion except for ROWs used for restoration. No permitted surface-disturbing activities subject to valid existing rights in active riparian zone, exception for permitted for river restoration activities (for example, Clear Creek, Trinity, Indian Creek).	Management Direction: Prioritize restoration activities in degraded riparian areas; after large scale riparian restoration has occurred, sites would be managed as: <ul style="list-style-type: none"> No surface occupancy for leasable minerals Closed to mineral materials development, unless for restoration purposes ROW avoidance, except for ROWs used for restoration. Surface-disturbing activities would be allowed if consistent with restoration or benefit riparian habitat. 	
85	Management Direction: No similar management action.	Management Direction: Manage 89,322 acres of critical deer winter range as follows: <ul style="list-style-type: none"> Where possible, pursue opportunities for acquisition of land with wetland habitat and migration/Essential Connectivity Corridors of High Biological Value. 	Management Direction: Manage 89,322 acres of critical deer winter range as follows: <ul style="list-style-type: none"> Pursue land tenure adjustments to improve recreational access for deer hunting. 	Management Direction: Manage 89,322 acres of critical deer winter range as follows: <ul style="list-style-type: none"> Where possible, pursue opportunities for acquisition of land in Essential Connectivity Corridors of High Biological Value. Pursue land tenure adjustments to improve recreational access for deer hunting.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
86	Fish (including Special Status Species and Invasive, Nonnative Aquatic Species)			
87	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none">• Manage the NCIP planning area to protect watershed condition to support populations of fish and other aquatic species.• Coordinate fisheries management with Tribes.• Promote recovery of special status species through the development and implementation of proactive recovery and conservation actions.• Riparian habitat objectives can be found in the <i>Riparian Management Areas</i> section.		
88	Management Direction: Existing management for fish and aquatic species can be found in the <i>Riparian Management Areas</i> section.	Management Direction: <ul style="list-style-type: none">• All BLM internal projects and all BLM-permitted activities would implement pertinent BMPs in Appendix F.• Continue to coordinate with the Trinity River Restoration Program (TRRP).• Work with Tribes to identify strategic land for future acquisition by BLM to protect anadromous fish habitat.• Continue to develop cooperative management relationships with private landowners, stakeholders, Tribes, and state and federal agencies to benefit fish habitat.• Continue to prioritize the removal and suppression of nonnative and invasive species where it can be effectively implemented to support native species populations.• Continue to prioritize restoration to maintain the health of aquatic ecosystems.• Riparian management areas (including stream buffers for fish-bearing and perennial streams) would be managed as described in the <i>Riparian Management Areas</i> section.		
89	Coastal Resources and Management			
90	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none">• Protect coastal habitats and resilient coastal systems in the Coastal Strip, which includes all BLM-managed land within 1,000 yards of the mean high tide line.• Restore coastal dunes to native vegetation to increase resiliency to rising sea levels and protect dunes from degradation.• Address coastal bluff erosion and vegetation management.• Allow for appropriate types and levels of coast-based recreation while protecting cultural and natural resources and processes.• Allow for the development of resilient coastal systems in light of ongoing sea level rise and climate change.• Identify opportunities for simplifying or communicating various coastal use practices and restrictions among various land managers and owners.		
91	Management Direction: Arcata RMP 1992 Samoa Peninsula MA Contact universities, local schools, and The Nature Conservancy for expression of interest in research and cooperative management of the Manila Dunes (Cooperative management plan developed in 1990 for portion of Manila Dunes area and the Mad River Slough and Dunes CMA). Continue to seek local government assistance for management. <u>Manila (Ma-le'i) Dunes:</u> <ul style="list-style-type: none">• Enhance natural values.• Facilitate research and educational uses of unique dune ecosystems.	Management Direction: <ul style="list-style-type: none">• Collaborate with other agencies and municipalities on ocean safety and coastal hazards.• Cooperate with agencies, Tribes, and other landowners to manage for the continued resilience and function of the coastal Strip.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
92	Management Direction: No similar management action.	Management Direction: <ul style="list-style-type: none"> Protect important resources in the Coastal Strip (BLM-managed lands within 1,000 yards of the mean high tide line) from motorized recreation or non-motorized visitation with fencing, signs, vegetative barriers, or other appropriate and effective method. Examples of important resources include: <ul style="list-style-type: none"> Snowy plover nesting habitat, vulnerable areas for critically imperiled plant communities (including federally listed T&E species), wetland marsh, and Waters of the United States. Cultural Resources <ul style="list-style-type: none"> Implement management actions that allow for various public uses while ensuring the conservation and recovery of sensitive species and habitats, along with preservation of coastal processes. Visual Resource Management <ul style="list-style-type: none"> Any existing or acquired BLM-managed lands within the Coastal Strip would be managed as VRM class III. Recreation, Interpretation and Education <ul style="list-style-type: none"> UAV taking off and landing would be prohibited within 300 feet snowy plover breeding areas during breeding season. US Fish and Wildlife regulations prohibit the take of T&E species which would include harm and harassment with a UAV. No permits would be issued that would allow UAV flights over plover protection areas. Monitor recreational experience (surveys, etc.) and where monitoring indicates that user conflict is occurring the following actions (including, but not limited to) would be used, as appropriate to reduce that conflict: segregating conflicting uses (geographically or temporally), closing areas to conflicting uses, education. Support development and connectivity of California Coastal Trail. Look for opportunities to work collaboratively with other agencies, Tribes, and landowners in the gathering of information to manage unique coastal resources at a landscape scale. Collaborate with Tribes to facilitate traditional and ceremonial use of coastal resources. Prioritize opportunities to interpret unique coastal resources through collaboration with adjacent landowners and partners. Public Health and Safety <ul style="list-style-type: none"> Work with local communities to facilitate installation of Tsunami warning sirens as necessary. Continue collaboration with National Weather Service and other partners to monitor conditions and provide for ocean and coastal safety. Climate Change <ul style="list-style-type: none"> Collaborate with partners to monitor physical and biological responses of dune systems to sea level rise and climate change to better understand natural values and processes. Relocate recreational facilities as needed in response to sea level rise. Monitor cultural resources for change in condition; if monitoring indicates potential loss of resources, initiate Tribal consultation and management response.. Decommission roads as necessary for public safety; if public access, recreation access, or habitat restoration become unattainable due to sea level rise, then recreational facilities would be decommissioned. Monitor dune function and implement vegetation treatments as necessary to maintain that function. Implement restoration of salt marsh and mud flats on acquired lands and acquire lands at risk of sea level rise that have potential to provide habitat. “Restoration” activities would include planned retreat of facilities, revegetation activities to promote sediment movement through coastal systems. Develop recreational facilities that are most appropriate to the future condition. Implement management actions that are consistent with promoting resilient coastal systems in the face of rising sea levels and changing climate. 		
93	Management Direction: Arcata RMP 1992 Samoa Peninsula MA Public lands are not available for mineral materials sales.	Management Direction: The following areas would be closed to mineral materials development: <ul style="list-style-type: none"> Ma-I’el Dunes ACEC Mike Thompson Wildlife Area South Spit¹ Humboldt Bay 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
94	Management Direction: Arcata RMP 1992 Samoa Peninsula MA <u>Manila (Ma-le'l)</u> Dunes: <ul style="list-style-type: none"> OHV Closed (65 acres) OHV Open (47 acres) <u>Samoa Dunes:</u> <ul style="list-style-type: none"> OHV Closed (175 acres) OHV Open (125 acres) 	Management Direction: <ul style="list-style-type: none"> The Samoa Dunes designated riding area (190 acres) would be managed as OHV open. The Mike Thompson Wildlife Area South Spit Humboldt Bay would be managed as OHV limited. The rest of the Coastal Strip not included in the Samoa Dunes designated riding area and Mike Thompson Wildlife Area South Spit Humboldt Bay would be managed as OHV closed. Newly acquired lands within the Coastal Strip would be managed as OHV closed. <p>OHV use would be directed to and encouraged in areas where it is consistent with, or where it could assist with management and restoration goals. This would be determined on case-by-case basis through implementation level planning and in collaboration with other agencies and local government partners.</p>	Management Direction: <ul style="list-style-type: none"> The Samoa Dunes designated riding area (190 acres) would be managed as OHV open. The Mike Thompson Wildlife Area South Spit Humboldt Bay would be managed as OHV limited. The rest of the Coastal Strip not included in the Samoa Dunes designated riding area and Mike Thompson Wildlife Area South Spit Humboldt Bay would be managed as OHV limited. Newly acquired lands within the Coastal Strip would be managed as OHV limited. <p>OHV use would be directed to and encouraged in areas where it is consistent with, or where it could assist with management and restoration goals. This would be determined on case-by-case basis through implementation level planning and in collaboration with other agency and local government partners.</p>	Management Direction: Same as Alternative C, with the following addition: <ul style="list-style-type: none"> Ma-le'l Dunes ACEC would be managed as OHV closed.
95	Management Direction: No similar management action	Management Direction: Existing and acquired BLM lands in the Coastal Strip would be managed as a ROW exclusion area.	Management Direction: Existing and acquired BLM lands in the Coastal Strip would be managed as a ROW avoidance area, with the exception of Ma-le'l Dunes which would be managed as ROW exclusion outside of existing ROWs.	Management Direction: Same as Alternative C.
96	Management Direction: No similar management action	Management Direction: Prioritize acquisition of coastal areas or work with partners to acquire lands for management of tidal wetland areas, areas of dune migration, sea level inundation, and tracts behind at-risk levees.	Management Direction: Prioritize acquisition of coastal areas or work with partners to acquire lands with dunes dominated by nonnative vegetation and low potential for restoration and make these areas available for recreational use. This would include equestrian and OHV use through implementation-level travel planning.	Management Direction: Prioritize acquisition of coastal areas or work with partners to acquire the following: <ul style="list-style-type: none"> Lands for management of tidal wetland areas Areas of dune migration Areas of sea level inundation Tracts behind at-risk levees Potential recreation sites

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
97	Wildland Fire Management			
98	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none"> Promote management of wildland fire that protects the Wildland-Urban Interface infrastructure, watershed function, forest health, cultural and Tribal cultural values, ecological and economic values, and promotes ecosystem diversity. Reduce or modify hazardous fuels buildup and associated wildfire risk of stand replacing or catastrophic wildfire. Employ development of a cost-effective and efficient fire and fuels management program that protects at-risk values and communities most vulnerable to wildfire impacts, while enhancing and maintaining the health of landscapes and providing the opportunity for vital ecological processes to occur. Manage wildland fire consistent with national policy directives. Establish priorities among the protection of human communities, property, infrastructure and natural resource objectives, Tribal heritage practices, and ecosystem function. Use varied methods (for example, mechanical and manual fuels reduction, prescribed fire, chemical or biological treatments, targeted grazing, fire managed for resource benefit, and thinning and harvesting), as appropriate to site conditions to reduce hazardous fuels contributing to catastrophic wildfire and to promote ecosystem health and resilience. Consider predicted climate change and incorporate into fire management priorities, planning, and hazard fuels implementation. Create contiguous BLM ownership and reduce fragmentation by purchasing adjacent parcels which would improve fire, fuels, and vegetation management opportunities on a landscape or watershed level. Dispose of fragmented BLM lands where fire, fuels, and vegetation objectives cannot be met based on access issues, management strategy on adjacent lands, and deviation from desired condition class on adjacent lands. Manage wildfire for multiple objectives, including protection and resource benefit. Naturally occurring wildfire would be used to protect, maintain, and enhance resources and, as nearly as possible, would be allowed to function in its natural ecological role as a disturbance agent (see 2009 Guidance for the Implementation of Federal Wildland Fire Management Policy [USDA and DOI 2009]). Work with Tribal Nations acting as cooperators to identify areas of significance that may benefit from protection during fuels treatments. Work with cooperating landowners to manage fire and fuels at a landscape scale across jurisdictions, when feasible. Conduct outreach and education programs to increase the public's understanding of wildfire prevention, management, and the natural role of wildfire in California's ecosystems. Manage wildfires cooperatively on BLM-managed public lands that threaten communities, Tribes, or other jurisdictions. Wildland fire management actions would take into account risks and benefits that span jurisdictional boundaries. The BLM would promote community and homeowner involvement in planning and implementing actions to mitigate wildfire risk in Wildland Urban Interface; would emphasize proactive wildfire risk mitigation where new development and expansion into natural vegetation is occurring; and would ensure that wildfire mitigation strategies consider protection of community infrastructure. Use wildland fire management as a tool to accomplish objectives for the following resources: <ul style="list-style-type: none"> Air and Air Quality Related Values Soils Water Resources and Fisheries Vegetation Wildlife Nonnative and Invasive Species Cultural and Tribal Resources Paleontological Resources Visual Resources Lands With Wilderness Characteristics Forestry and Woodland Products. Make wildland fire management decisions based on public and private values, natural resource objectives, risk of potential impacts, and the cost of protection. Wildfire management strategies and effectiveness, over time, would monitor and account for shifts in human development, vegetation distribution, and management priorities in response to a changing climate. Conduct wildland fire management and fire response activities that minimize damage to resources including the introduction and spread of nonnative and invasive species, introduction of suppression chemicals into waterways, disturbance to erodible soils or ecologically sensitive systems, and the degradation of air quality. Use Emergency Stabilization and Burned Area Rehabilitation (ES/BAR) efforts to identify and mitigate threats to life or property, or unacceptable degradation to natural and cultural resources resulting from the natural effects of a wildfire. Implement post-wildfire response that includes mitigation of hazardous fuels, standing and fallen dead vegetation, and hazard trees adjacent to infrastructure on or near public lands. Prevent unauthorized human ignitions through collaborative prevention efforts with interagency partners and other affected groups and individuals. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
99	<p>Management Direction:</p> <p>Arcata RMP 1992</p> <p>Due to the scattered nature, remoteness, and the relative inaccessibility of the public lands, CAL FIRE is responsible for general fire suppression. Deviations from CAL FIRE's fire policy will be made on a site-specific basis (Wilderness, ACECs). Prescribed fire is generally allowed and will be addressed on a site-specific basis through the demands of resource objectives.</p> <p><u>Lacks Creek MA</u></p> <p>Prepare a watershed activity plan to reflect:</p> <ul style="list-style-type: none">• Monitoring Redwood Creek in conjunction with Redwood National Park• Rehabilitation of Lacks Creek drainage• Fire management, including suppression.• Management of an old-growth ACEC/RNA. <p>Carry out forest management activities that improve, create or increase wildlife habitat and biodiversity, and provide protection to the forest resource (insects, disease, and fire).</p> <p><u>Butte Creek MA</u></p> <p>Fire, disease, and insects will be controlled to prevent spreading to other lands, and to protect the existing forest.</p> <p><u>Red Mountain MA</u></p> <p>Carry out forest management activities that improve, create or increase wildlife habitat and biodiversity, and provide protection to the forest resource (insects, disease, and fire).</p>	<p>Management Direction:</p> <p>No similar management action.</p>		
100	<p>Management Direction:</p> <p>Arcata RMP Forest Plan Amendment 1995</p> <p>CAL FIRE is responsible for fire suppression on BLM lands within the plan amendment area. Deviations from the existing suppression policy will be made on a site-specific basis for wilderness, ACECs, and NWFP-designated areas. Fire management evaluation and planning are required components of watershed analyses and LSR management assessments; until these are completed, fire prescriptions and suppression activities will be guided by the management area RCOs, existing activity plans, and NWFP land allocation objectives and standards and guidelines.</p> <p>Prescribed fire is generally allowed if consistent with RCOs and NWFP standards and guidelines. The use of prescribed fire to achieve management objectives would be subject to development of a watershed analysis, prescribed fire plan, and NEPA review prior to initiating the action. Specific decisions regarding the use of prescribed fire will not be made in the selected plan amendment.</p> <p><u>Covelo Vicinity MA</u></p> <p>Re-establish ecological processes such as fire to maintain terrestrial habitats emphasizing management of brushlands to maintain diversity and of forest communities to manage fir encroachment and maintain pine component.</p>	<p>Management Direction:</p> <p>No similar management action.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
101	<p>Management Direction: Redding RMP 1993 Any fire occurring on public lands would be suppressed. ACECs, special RMAs, Wilderness Areas, WSAs, WSR corridors, and certain other public lands will require modified suppression techniques to protect the known values. Vegetation management will occur as a secondary benefit or impact in many BLM activities such as grazing, timber harvest, wetland construction, firefighting, mining and special-status species management. The impacts or benefits to vegetation will either be insignificant or addressed in the site-specific EA for the parent action.</p>	<p>Management Direction: No similar management action.</p>		
102	<p>Management Direction: No similar management action.</p>	<p>Management Direction: Community Engagement and Partnerships:</p> <ul style="list-style-type: none"> Promote community and homeowner engagement in wildfire mitigation and involvement in planning. Prioritize actions to mitigate the risk posed by wildfire to communities and homes, such as ingress and egress routes for communities built within the WUI. Emphasize proactive wildfire risk mitigation actions, such as CWPPs, hazard mitigation planning, and other methods of comprehensive community planning where new development and expansion into wildland fuels is occurring. Participate in partnerships and agreements with other response agencies, such as CAL FIRE, USFS, and NPS in alignment with the current state and national fire protection agreements, operating plans, and strategies. Give priority to areas where projects can be implemented in a cooperative effort with Tribes, adjacent landowners, non-profit organizations, state, and federal partners. Apply cooperative decision making in all suppression actions between BLM and the protecting agency in BLM special designation areas such as ACECs, Wildland Scenic rivers, and Wilderness or Wilderness Study Areas. Ensure BLM approves of heavy equipment use and indirect or contingency suppression strategies effecting special designation areas. Consistent with federal policy, coordinate with Tribes to promote Tribal cultural fire management practices – this would include providing opportunities for cultural burning and vegetation management to promote traditional uses. Support and actively participate in the creation of Community Wide Protection Plans (CWPP) through collaborative planning with state and local governments, fire safe councils, resource conservation districts, and other adjacent stakeholders. CWPPs would identify communities at highest risk from catastrophic wildfire impacts, provide guidance on fuels reduction treatments in WUI and interface zones, plan community-based wildfire response such as the use of pre-establish evacuation routes, and facilitate the development of initial attack plans with local fire departments and first responders. <p>Vegetation Management:</p> <ul style="list-style-type: none"> Plan and implement vegetation management and fuels reduction treatments that meet multiple resource and fire protection objectives. Treatments would promote fire resilient vegetation communities that reduce the threat of adverse wildfire impacts to natural resources and human developments and values. Prioritize the development and utilization of programmatic NEPA products that address hazardous fuels reduction and post-wildfire actions in WUI or other high-priority areas. <p>Data collection and reporting:</p> <ul style="list-style-type: none"> Use current federal fuels planning and accomplishment tools and programs. Incorporate new spatial fire planning platforms and decision support tools that drive fire management planning. Identify and prioritize processes or tools that could be used to increase situational awareness ahead of and during fire seasons. These could include using camera systems or integrating other tools into the existing programs. <p>Multiple Resource Objectives:</p> <ul style="list-style-type: none"> Allow the use of prescribed fire as a tool to meet resource management objectives in all areas, unless otherwise restricted within this RMP. Fire suppression activities (e.g., Aviation or Equipment Drafting) would not allow inter-basin transfer of water from aquatic areas with known infestation of aquatic species. Evaluate fire control lines and other fire control features to identify those most appropriate for continued maintenance as control features instead of restoration to pre-disturbance conditions. Use fire as a management tool to improve vegetation and wildlife habitat and to address issues such as Sudden Oak Death (SOD). Coordinate with utility providers to identify ROW clearance requirements, vegetation management practices, and operations and maintenance and inspection protocols. In the following areas, restrict fire suppression activities to minimize resource damage, unless otherwise approved by the authorized officer: <ul style="list-style-type: none"> Vernal pools, wilderness, WSA, known cultural sites, lands with wilderness characteristics managed to protect wilderness characteristics as a priority over other multiple uses. Areas suitable for management of wildfires to meet resource objectives include the following: <ul style="list-style-type: none"> Areas that benefit Tribal interests and cultural practices or resources. Direct Protection Areas which support wildfire management for multiple resource benefit, as identified in local annual operating plans. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
102 (cont.)	(see above)	<ul style="list-style-type: none"> – Wilderness, Wilderness Study Areas, and lands managed for wilderness characteristics. – Within wildlife habitat that depends on or benefits from fire disturbance to promote biodiversity. – Within fire dependent vegetation communities where management objectives can only be met through fire disturbances. – Additional areas considered on a case-by-case, as determined by the BLM Authorized Officer. • Areas where vegetation treatments may not be an appropriate tool to meet resource management objectives include the following: <ul style="list-style-type: none"> – Prescribed fire would not be used in and around vernal pools during the desiccation period. – Cultural sites that are sensitive to wildfire or prescribed fire impacts. • The following would be priority areas for fuels reduction activities in WUI and non-WUI designations. <ul style="list-style-type: none"> – Areas within WUI community buffers identified on a case-by-case basis based on fuel loading and associated fire risk. – Critical infrastructure – Existing ROWs – WUI treatments would be identified through cooperation between BLM, other federal and state agencies, local Fire Safe Councils, Resource Conservation Districts, local fire departments, and adjacent landowners. – Non-WUI treatments would be implemented to emphasize vegetation health and ecosystem function. Multiple resource goals and objectives would be accounted for in non-WUI fuels planning, to include forest health and productivity, watershed protection and function, special status species habitat enhancement and stability, and protection of cultural resources. Treatments would favor reduction in stand densities, creating breaks in mid canopy or understory vegetation, enhancing hardwood stands and grasslands by reducing conifer encroachment, and reestablishing fire's natural disturbance cycle through the use of rotational prescribed burning. • Post fire management: <ul style="list-style-type: none"> – The BLM would consider post-fire impacts on resources, including erosion, infrastructure, and water supply; prioritize pre-fire planning for post-fire response; and identify and prioritize areas that have heightened vulnerability to post-fire flooding, debris flow, sediment transport, and related impacts on critical infrastructure. Consideration of post-fire impacts would include those from climate change. <p>Special Designation Areas:</p> <ul style="list-style-type: none"> • In all areas: <ul style="list-style-type: none"> – Manage vegetation, hazardous fuel loadings, and human usage to curtail catastrophic fires, where appropriate. • In the Grass Valley Watershed: <ul style="list-style-type: none"> – In the Direct Protection Area under NPS, manage unplanned fire for multiple resource management objectives. In SRA, all wildfires will be full suppression while ensuring firefighter and public safety are the highest priority. • In the Sacramento River Bend ACEC: <ul style="list-style-type: none"> – Use Minimum Impact Suppression Tactics (MIST) whenever possible. – Under extreme conditions and when approved by the BLM Authorized Officer, use appropriate suppression action to mitigate the threat to life or private property. • Wilderness and WSAs: <ul style="list-style-type: none"> – Wilderness and WSAs are managed for wildland fire in accordance with applicable laws and regulations. Specifically, when fighting wildfires in wilderness and WSAs: <ul style="list-style-type: none"> ○ The use of bulldozers for wildfire suppression requires BLM authorization from the BLM Authorized Officer. ○ Aircraft, motorboats, motorized vehicles, and mechanized equipment may only be used in special or emergency cases involving public welfare of wilderness visitors, protection of wilderness values, or situations that threaten life, property, and public welfare. Approval from the AO is required for use of aircraft, motorboats, motorized vehicles, chain saws and other mechanized equipment in designated wilderness areas. ○ Suppression actions must be executed to minimize surface disturbance and alterations of the natural landscape. Methods and equipment that least alter the landscape or disturb the land surface are considered the best. ○ Suppression structures and improvements must be located outside the wilderness, except those that are the minimum necessary to protect life, property, public welfare, and wilderness objectives. ○ Use MIST, as described in current Incident Response Pocket Guide. ○ All equipment used for fire suppression activities must be removed upon completion of use and all sites should be assessed and rehabilitated as appropriate. ○ Helibases, helispots, and camps requiring motorized access should be located outside of the wilderness area unless authorized by the BLM Authorized Officer. Where possible, avoid establishing spike or coyote camps in wilderness and WSAs while achieving desired ecological benefits. ○ FMPs may provide additional special considerations, including specific MIST guidelines for the area under consideration. ○ Agencies should avoid aerial application of retardant or foam within 300 feet of waterways and any ground application of wildland fire chemicals into waterways. A waterway is defined as any body of water—including lakes, rivers, streams and ponds—whether or not it contains aquatic life. This policy does not require the helicopter or air tanker pilot-in-command to fly in such a way as to endanger their aircraft, other aircraft, or structures or compromise ground personnel safety. ○ If any fire chemicals are aerially applied within 300 feet of a waterway, or ground applied or spilled with the potential to enter a waterway, incident management and the Agency Administrator will then complete and process the Wildland Fire Chemical Reporting Form (NIFC Form #9210-18) and report the occurrence to Wildland Fire Chemicals Systems in Missoula, Montana, 406-329-3900, or to the individuals listed on the Wildland Fire Chemicals Systems website: www.fs.fed.us/rm/fire. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
102 (cont.)	(see above)	<p>Fuels Management Zones (Map 2-3 [Alternative B], and Map 2-4 in Appendix A [Alternatives C and D])</p> <p>The planning area would be divided into three fuels management zone categories:</p> <ul style="list-style-type: none"> • WUI: Defined as the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels (IFWRMP 2009). These alternatives would use the 2022 CAL FIRE FRAP WUI influence zone which is generally 1 mile from communities; however, dataset(s) and definitions may be updated throughout the lifetime of the plan. The decision area contains 28,000 acres of WUI under Alternative B (Map 2-4 in Appendix A [Alternative B]), and 44,600 acres of WUI under Alternatives C and D (Map 2-5 in Appendix A [Alternatives C and D]). • Interface Zone: Defined as 200 feet from property lines within the WUI. The decision area contains 16,100 acres of Interface Zone (Map 2-4 in Appendix A [Alternative B], and Map 2-5 in Appendix A [Alternatives C and D]). The priority in this area is to reduce fire impacts to adjacent human development and to create pre-fire suppression features used in the suppression of wildfires within this zone. • Non-WUI: Defined as all other lands in the planning area, 321,500 acres. <p>Vegetation treatments for fuels management in Interface Zone and WUI would be prioritized over treatments in non-WUI. Vegetation treatments would be designed to reduce fuels, mitigate fire risk, increase fire suppression effectiveness and promote fire resiliency while considering other resource values.</p> <p>Interface Zone, WUI, and Non-WUI have different vegetation desired outcomes and management actions. Non-WUI outcomes and actions are described below and in the Vegetation section. Interface Zone and WUI outcomes and actions are described below.</p>		
103	<p>Management Direction:</p> <p>No similar management action</p>	<p>Management Direction:</p> <p>Treatments in the Interface Zone</p> <ul style="list-style-type: none"> • Oak Woodland <ul style="list-style-type: none"> – Establish and maintain collaborative fuel breaks (for example, with private landowners, CAL FIRE) (shaded manual and mechanical treatments) on property lines and strategic topographic features – primarily linear, for use as defensible space and suppression. – Utilize varied maintenance methods: Mechanical, manual, chemical, prescribed fire. • Mixed Conifer <ul style="list-style-type: none"> – Reduce, rearrange, or otherwise modify vegetation profiles to create gaps in understory, mid canopy and overstory fuels, increase overall stem spacing, and reduce biomass throughout. – Emphasize mechanical treatment methods, maintenance. – Establish and maintain collaborative fuel breaks (shaded manual and mechanical treatments) on property lines and strategic topographic features. These would be primarily linear and used for defensible space/ and/ or fire suppression features. – Mitigate standing hazardous trees (e.g., standing dead vegetation, beetle infested trees, pathogen-affected trees, trees immediately adjacent to infrastructure, etc.) along WUI corridors, boundaries, evacuation routes, and infrastructure. – Promote deciduous hardwoods components in these areas to foster reduced fire risk and increased fire resiliency. • Douglas Fir and Tannoak-dominated Forest <ul style="list-style-type: none"> – Emphasize mechanical treatment methods. – Reduce ladder fuels, regenerating conifers, overall biomass, increase canopy and stem spacing. – Establish and maintain collaborative fuel breaks (shaded manual and mechanical treatments) on property lines/strategic topographic features – primarily linear, for use as defensible space/fire suppression. – Mitigate standing dead conifers along WUI corridors, boundaries, evacuation routes, and infrastructure. • Knobcone <ul style="list-style-type: none"> – Identify continuous knobcone stands adjacent to infrastructure, along evacuation routes, and near other features for protection. Implement knobcone treatments to create discontinuous mid- and upper-level canopies. – Implement aggressive maintenance regime, utilizing varied methods targeting 1-3 years for retreatment or maintenance. – Establish as part of vegetation monitoring program. • Rare Cypress Forest <ul style="list-style-type: none"> – Manage as directed in the <i>Vegetation</i> section. • Dunes <ul style="list-style-type: none"> – Manage as directed in the <i>Vegetation</i> section. • Coastal Forests <ul style="list-style-type: none"> – Selectively thin fuels to retain older trees and a smaller component of younger age classes. • Valley Foothill Riparian <ul style="list-style-type: none"> – Manage as described in <i>Vegetation</i> section and determine any additional specific requirements for Interface Zone on a case-by-case basis. • Oak Savannas and Open Woodlands: <ul style="list-style-type: none"> – Fuels reduction treatments to establish or maintain well-spaced oak woodlands and grasslands. – Prescribed burning would be used to control fuels where applicable. Oak regeneration would be a secondary consideration to fuels control. – Reduce woody shrub or conifer encroachment by maintaining treatments to predetermined stem spacing. – Establish and maintain linear fuel breaks along property lines, infrastructure boundaries, and along evacuation routes. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I03 (cont.)	(see above)	<ul style="list-style-type: none"> • Late Successional Conifer Forest <ul style="list-style-type: none"> – In Interface Zone, manage this Vegetation type the same as the <i>Vegetation</i> Section. • Juniper and Sagebrush <ul style="list-style-type: none"> – Reduce shrub and brush component. – More aggressive fuels treatments may include masticating or other mechanical removal. – Manage for control of invasive annual grasses when planning and executing fuels treatments. • Chaparral Shrubland <ul style="list-style-type: none"> – Reduced brush component – Establish and maintain collaborative fuel breaks (shaded manual and mechanical treatments) on property lines and strategic topographic features. These would be primarily linear and used for defensible space and/ or fire suppression features. – Utilize varied maintenance methods: Mechanical, manual, chemical, prescribed fire. – More aggressive fuels treatments may include masticating or other mechanical removal. • Grasslands, Vernal Pools, and Wetlands <ul style="list-style-type: none"> – Use all available fuels treatment options as applicable to reduce fuel loading while maintaining a mosaic of vegetation. • General Riparian (as a subset of all the above vegetation cover types) <ul style="list-style-type: none"> – Manage as described in <i>Riparian Management Areas</i> section and determine any additional specific requirements for Interface Zone on a case-by-case basis. • Fallow Fields and Croplands (walnut orchards, abandoned fields, etc.) <ul style="list-style-type: none"> – Implement fuels projects (mowing, prescribed burning, etc.) to reduce flashy fuels from annual grasses. – Prioritize fuels projects for reduced wildfire risk immediately adjacent to existing residences and infrastructure. <p>Treatments in WUI</p> <ul style="list-style-type: none"> • Oak Woodland <ul style="list-style-type: none"> – Retain older/larger shrubs and understory components to promote heterogeneity. – Design and implement fuels reduction projects targeting non-linear contiguous treatments in WUI parcels - Manual and mechanical treatments mimicking natural fire return (mosaic effects in time/ space – non treatment areas, riparian exclusions, slope/ vegetation cover exclusions). – Implement linear defensible space treatments (fuel breaks) adjacent to infrastructure and along evacuation routes, where practicable. • Mixed Conifer <ul style="list-style-type: none"> – Where practicable, use shaded fuel break construction. <ul style="list-style-type: none"> ○ Contiguous treatments reducing fuel loading, promoting breaks in ladder fuels and crown spacing. ○ Treatments in WUI adjacent to infrastructure, roadways, and recreation sites would be maintained using varied methods in 1-3 year intervals or as needed to meet management objectives. ○ Address post timber harvest ground fuels, slash through pile, and broadcast burning, or mechanical reduction and removal. ○ Promote deciduous hardwoods components in these areas to foster reduced fire risk and increased fire resiliency. • Douglas Fir and Tanoak-dominated Forest <ul style="list-style-type: none"> – Contiguous treatments reducing fuel loading, promoting breaks in ladder fuels and crown spacing. – Where practicable, treatments in WUI adjacent to infrastructure, roadways, recreation sites should be maintained 1-3 years utilizing varied methods. – Post timber harvest ground fuels and slash maintained through pile and broadcast burning, or mechanical reduction and removal. • Knobcone <ul style="list-style-type: none"> – Establish and maintain discontinuous knobcone stands adjacent to values at risk or along strategic WUI features and fuel breaks. – Where practicable, maintain treatments 1-3 years using varied methods (mechanical, manual, prescribed fire) to maintain discontinuous canopy/ loading. • Rare Cypress Forest <ul style="list-style-type: none"> – Manage same as directed in the <i>Vegetation</i> section. • Dunes <ul style="list-style-type: none"> – Manage same as directed in the <i>Vegetation</i> section. • Coastal Forests <ul style="list-style-type: none"> – Manage same as directed in the <i>Vegetation</i> section. • Valley Foothill Riparian <ul style="list-style-type: none"> – Manage as described in <i>Vegetation</i> section and determine any additional specific requirements for WUI on a case-by-case basis. • Oak Savannas and Open Woodlands <ul style="list-style-type: none"> – Woody shrub and conifer encroachment maintained through fuels treatments, including mechanical, manual, and prescribed fire treatments. – Utilize Oak Savannah and Oak grassland treatment specifications when identified as part of larger fuel or forestry treatment (e.g., Oak Grassland patch within mixed conifer treatment). – Promote treatment (where appropriate) utilizing broadcast burning, reintroducing fire to fire dependent ecosystem. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I03 (cont.)	(see above)	<ul style="list-style-type: none"> • Late Successional Conifer Forest <ul style="list-style-type: none"> – In WUI, manage this vegetation type the same as the <i>Vegetation</i> section. • Chaparral Shrubland <ul style="list-style-type: none"> – Reduce, rearrange, or otherwise modify vegetation profiles to create breaks in fuel continuity, increase overall stem spacing, and reduce biomass throughout. – Treatments in WUI adjacent to infrastructure, roadways, and recreation sites would be implemented and maintained using varied methods in 1-3 year intervals or as needed to meet management objectives. • Grasslands, Vernal Pools, and Wetlands <ul style="list-style-type: none"> – Implement fuels treatments that use varied methods to reduce wildfire threat to WUI values, promote biodiversity in vernal pools and wetlands complexes, and establish treatment intervals consistent with fire dependent systems. • General Riparian (as a subset of all the above vegetation cover types) <ul style="list-style-type: none"> – Manage as described in <i>Riparian Management Areas</i> section. • Fallow Fields and Croplands (walnut orchards, abandoned fields, etc.) <ul style="list-style-type: none"> – Manage the same as the <i>Vegetation</i> section 		
I04	Management Direction: No similar management action	Management Direction: Treatments in Non-WUI <ul style="list-style-type: none"> • Oak Woodland <ul style="list-style-type: none"> – “No Treatment” or “Modified” treatment areas would be identified through implementation-level fuels reduction planning. – Plan vegetation treatments that are staggered in the time they are implemented, location of treatment units, and are implemented using a variety of methods. – Plan and implement vegetation treatments that are based on ecosystem restoration and multiple resource objectives, such as improving fire resilience, mitigating conifer encroachment, and promoting heterogeneous vegetation communities. – Initial treatments or maintenance entries (where appropriate) would emphasize prescribed broadcast burning. – Methods and timing of maintenance options would be determined on a case-by-case basis. • Mixed Conifer <ul style="list-style-type: none"> – Establish “No Treatment” or “Modified” treatment areas as part of implementation-level fuels reduction planning. – Plan vegetation treatments that are staggered in the time they are implemented, location of treatment units, and are implemented using a variety of methods. – Plan and implement vegetation treatments that are based on ecosystem restoration and multiple resource objectives, such as improving fire resilience, stand productivity, and Late Successional Reserve management strategies. – Initial treatments or maintenance entries (where appropriate) would emphasize prescribed broadcast burning with the goal of reintroducing fire into a fire-dependent ecosystems. – Methods and timing of maintenance options would be determined on a case-by-case basis. • Douglas Fir and Tanoak-dominated Forest <ul style="list-style-type: none"> – “No Treatment” or “Modified” treatment areas would be identified through implementation-level fuels reduction planning. – Plan vegetation treatments that are staggered in the time they are implemented, location of treatment units, and are implemented using a variety of methods. – Plan and implement vegetation treatments that are based on ecosystem restoration and multiple resource objectives, such as improving fire resilience, stand productivity, and Late successional Reserve management strategies. – Initial treatments or maintenance entries (where appropriate) would emphasize prescribed broadcast burning. – Methods and timing of maintenance options would be determined on a case-by-case basis. • Knobcone <ul style="list-style-type: none"> – Plan and implement vegetation treatments that include untreated or modified treatment patches, avoiding uniform treatment of knobcone stands in Non-WUI – Promote the use of variable intensity prescribed burning in Non-WUI knobcone stands to create a range of successional patches. – Include any treatment areas as part of a vegetation monitoring program. • Rare Cypress Forest <ul style="list-style-type: none"> – Manage the same as directed in the <i>Vegetation</i> section. • Dunes <ul style="list-style-type: none"> – Manage the same as directed in the <i>Vegetation</i> section. • Coastal Forests <ul style="list-style-type: none"> – Manage the same as directed in the <i>Vegetation</i> section. • Valley Foothill Riparian <ul style="list-style-type: none"> – Manage the same as directed in the <i>Vegetation</i> section. • Oak Savannas and Open Woodlands <ul style="list-style-type: none"> – Promote treatments for oak regeneration and reduction of encroachment on oak community edges. – Where appropriate, utilize broadcast prescribed fire as a preferred treatment method. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I04 (cont.)	(see above)	<ul style="list-style-type: none"> – Establish “no treatment” or “Modified” treatment areas. – Plan vegetation treatments that are staggered in the time they are implemented, location of treatment units, and are implemented using a variety of methods. This will be determined on a case-by-case basis. – Methods and timing of maintenance options would be determined on a case-by-case basis. • Late Successional Conifer Forest <ul style="list-style-type: none"> – Manage the same as directed in the <i>Vegetation</i> section. • Chaparral Shrubland <ul style="list-style-type: none"> – Manage the same as directed in the <i>Vegetation</i> section. • Grasslands, Vernal Pools, and Wetlands <ul style="list-style-type: none"> – Implement fuels treatments that use varied methods to reduce wildfire threat to resource and cultural values, promote biodiversity in vernal pools and wetlands complexes, and establish treatment intervals consistent with fire dependent systems. • General Riparian (as a subset of all of the above vegetation cover types) <ul style="list-style-type: none"> – Manage as described in <i>Riparian Management Areas</i> section. • Fallow Fields and Croplands (walnut orchards, abandoned fields, etc.) <ul style="list-style-type: none"> – Manage the same as directed in the <i>Vegetation</i> section. 		
I05	Management Direction: No similar management action	Management Direction: Post-fire treatments would consider the following options as practicable based on available funding and applicability to specific fuels and habitat management goals. These would be determined on a case-by-case basis. <ul style="list-style-type: none"> • Oak Woodland <ul style="list-style-type: none"> – Reduce standing and downed dead vegetation where practicable. – Promote heterogeneity, species diversity, and stand complexity in post-fire treatments while managing to reduce hazard fuel loading. – In post fire treatments consider and promote, as appropriate, maintenance and enhancement of wildlife habitat. – Treat regenerating shrubs and oaks post fire to reduce overall stems per acre and fuel loading, while maintaining diversity and ecosystem function <ul style="list-style-type: none"> ○ Plan and implement non-linear post-fire fuels treatments that vary in size, treatment location, time of implementation, and the methods utilized in order to promote a successional mosaic throughout project areas. – Evaluate fire control lines and other fire control features for continued maintenance to maintain these for future fire suppression. <ul style="list-style-type: none"> ○ Monitor and treat regenerating conifers to meet vegetation and fuel management objectives. • Mixed Conifer <ul style="list-style-type: none"> – Reduce standing and downed dead fuel loads. – Plan and implement understory and mid canopy fuels reduction treatments which target regenerating vegetation to reduce overall stems per acre and fuel loading. Treatments would promote heterogeneity, species diversity, and stand complexity while managing to reduce hazard fuel loading. – After Heavy Tree Mortality events (i.e., insect, drought, and disease) utilize the same or similar strategies as post fire management (timber disturbance response). – Post-fire treatment would include seeding/plantings as appropriate if natural revegetation is not reaching desired condition, with consideration of climate change to maximize post-fire treatment success. • Douglas Fir and Tannoak-dominated Forest <ul style="list-style-type: none"> – Reduce standing and downed dead fuel loads. – Plan and implement understory and mid canopy fuels reduction treatments which target regenerating vegetation to reduce overall stems per acre and fuel loading. Treatments would promote heterogeneity, species diversity, and stand complexity while managing to reduce hazard fuel loading. – After heavy tree mortality events (i.e., insect, drought, and disease) to utilize similar strategies as these post-fire actions. • Knobcone <ul style="list-style-type: none"> – Plan and implement post-fire fuels treatments to manage regenerating conifers and overall fuel loading. • Rare Cypress Forest <ul style="list-style-type: none"> – Implement intensive fuels management where feasible around the perimeter of the population to protect from subsequent high severity fire prior to cone maturation. – Remove seedlings of encroaching species. – Retain appropriate level of vegetation cover surrounding cypress stands to mitigate cypress blow down. • Dunes <ul style="list-style-type: none"> – Treat promptly after a fire to control or remove invasive species, when feasible. – Prioritize post-fire treatment in areas adjacent to native dune mat communities. • Coastal Forests <ul style="list-style-type: none"> – Post-fire treatments would be identified on a case-by-case basis. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
105 (cont.)	(see above)	<ul style="list-style-type: none"> Valley Foothill Riparian <ul style="list-style-type: none"> Whenever feasible inventory site for remnant structural components for each vegetation layer including overstory, subcanopy tree layer, understory shrub and forb and graminoids. If any vegetation layer is absent, it may be used as focal point in restoration efforts and planting on site. Oak Savannas and Open Woodlands <ul style="list-style-type: none"> Pursue planting to promote oak regeneration as appropriate (depending on oak species) Consider seeding or planting perennial grasses to reduce invasive species encroachment as determined necessary on a case-by-case basis. In post fire treatments, consider wildlife forage needs. Late Successional Conifer Forest <ul style="list-style-type: none"> Post-fire treatments would be identified on a case-by-case basis as necessary to meet DFC. Chaparral Shrubland <ul style="list-style-type: none"> Survey for nonnative and invasive species and determine applicable subsequent actions as necessary to meet DFC. Post-fire treatments would be identified on a case-by-case basis as necessary to meet DFC. Grasslands, Vernal Pools, and Wetlands <ul style="list-style-type: none"> Allow for natural regeneration of native species. If restoration is needed, focus on microhabitats that benefit sensitive species (vernal pools), potential use of enclosures to prevent disturbance and to allow for unhindered regeneration. Survey for nonnative and invasive species and determine applicable subsequent actions as necessary to meet DFC. Re-seeding or planting would be implemented as necessary to aid regeneration. General Riparian (as a subset of all of the above vegetation cover types) <ul style="list-style-type: none"> Whenever feasible inventory site for remnant structural components for each vegetation layer including overstory, subcanopy tree layer, understory shrub and forb and graminoids. If any vegetation layer is absent, it may be used as focal point in restoration efforts and planting on site. Fallow Fields and Croplands (such as, walnut orchards, abandoned fields) <ul style="list-style-type: none"> Treat for nonnative and invasive species immediately following disturbance events. 		
106	Management Direction: No similar management action	Management Direction: Annual Operating Plans will include the statement “no heavy equipment would be used for suppression in the following areas without approval from the BLM Authorized Officer; as needed, BLM will assign a resource advisor/ rep to coordinate heavy equipment use in all other areas.” <ul style="list-style-type: none"> Significant cultural sites Burial Grounds and Cemeteries Serpentine soils ACECs Designated WSR, Wilderness, WSAs, lands with wilderness characteristics managed as a priority 		
107	Management Direction: No similar management action	Management Direction: <ul style="list-style-type: none"> Restore suppression lines to original contour and vegetation to minimize visual contrast. Interface Zone outcomes and actions would not be changed, even in areas where Interface Zone space and the Essential Connectivity Corridors intersect. Where special designations and Interface Zones conflict, prioritize treatments to protect special designations. In areas where WUI and Essential Connectivity Corridors of High Biological Value intersect, the following modified outcomes and actions would be used to guide vegetation treatments for fuels reduction. Oak Woodland: <ul style="list-style-type: none"> Establish “no treatment” or “modified” treatment corridors as part of implementation-level fuels reduction planning. Non-linear contiguous treatments staggered in size, location, time, method of treatment (variable patches strategy). Mixed Conifer: <ul style="list-style-type: none"> Establish “no treatment” or “modified” treatment corridors as part of implementation-level fuels reduction planning. Non-linear contiguous treatments staggered in size, location, time, method of treatment (variable patches strategy). 	Management Direction: <ul style="list-style-type: none"> Maintain, as appropriate, suppression lines as long-term strategic fire breaks. Where special designations and Interface Zones conflict, prioritize treatments to protect Interface Zones. 	Management Direction: <ul style="list-style-type: none"> Interface Zone, WUI, and non-WUI would be managed as described in management common to all, even if it intersects with the Essential Connectivity Corridor. Treatments would be determined on a case-by-case basis in areas of overlap where WUI and special designations conflict. Where Interface Zone and special designations overlap, projects would be designed to prioritize Interface Zone goals and objectives while avoiding negative impacts to the special designation resources to the extent practicable During implementation level planning, modify treatments on a case-by-case basis in WUI and non-WUI to meet resource objectives in Essential Connectivity Corridors of High Biological Value. Maintain, as appropriate, suppression lines as long-term strategic fire breaks.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
107 (cont.)	(see above)	<ul style="list-style-type: none"> Fuels reduction treatments would include merchantable harvest as a means of fuels reduction – reducing canopy cover, stems per acre, creating variable aged stands. <p><u>Douglas Fir and Tanoak-dominated Forest:</u></p> <ul style="list-style-type: none"> Establish “no treatment” or “modified” treatment corridors. Non-linear contiguous treatments staggered in size, location, time, method of treatment... variable patches strategy. Fuels reduction treatments would consider merchantable harvest as a means of treatment – reducing canopy cover, stems per acre, creating variable aged stands. Fuels treatments and harvest areas maintained to meet multiple resource objectives, promote fire resilience in timber stands and establish gaps in percent canopy cover. <p><u>Knobcone:</u></p> <ul style="list-style-type: none"> Establish “no treatment” or “modified” treatment areas. Non-linear contiguous treatments staggered in size, location, time, method of treatment... variable patches strategy. Linear Treatments along protection features maintain an aggressive treatment prescription to reduce fire risk to values. <p><u>Rare Cypress Forest:</u></p> <ul style="list-style-type: none"> Manage the same as directed in <i>Vegetation</i> Section. <p><u>Dunes:</u></p> <ul style="list-style-type: none"> Manage the same as directed in <i>Vegetation</i> Section. <p><u>Coastal Forests:</u></p> <ul style="list-style-type: none"> Same as described under WUI section, above. <p><u>Valley Foothill Riparian:</u></p> <ul style="list-style-type: none"> Manage for 20-80 percent native canopy cover including subcanopy tree layer and understory shrub layer. Prioritize treatment to remove nonnative and invasive species. <p><u>Oak Savannas and Open Woodlands:</u></p> <ul style="list-style-type: none"> Promote treatments for oak regeneration and reduction of encroachment on oak community edges. Multiple resource benefit treatments include community or infrastructure protection where appropriate (reduced fire risk). Utilize where appropriate broadcast prescribed fire as treatment method. Establish “no treatment” or “modified” treatment corridors. Vegetation treatments staggered in time and locations (variable patches strategy). <p><u>Late Successional Conifer Forest:</u></p> <ul style="list-style-type: none"> Same as described under WUI section, above. <p><u>Grasslands, Vernal Pools, and Wetlands (such as, potholes, emergent wet marsh):</u></p> <ul style="list-style-type: none"> Same as described under WUI section, above. 	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
107 (cont.)	(see above)	<p><u>General Riparian (as a subset of all of the above vegetation cover types):</u></p> <ul style="list-style-type: none"> • Manage for 20-80 percent native canopy cover including subcanopy tree layer and understory shrub layer. • Prioritize treatment to remove nonnative and invasive species. • Clear dead vegetation and hazard trees along the riparian that do not provide for canopy cover or wildlife habitat. <p><u>Fallow Fields and Croplands (such as, walnut orchards, abandoned fields):</u></p> <ul style="list-style-type: none"> • See <i>Vegetation</i> section for management action related to restoring to historic vegetation conditions. 	(see above)	(see above)
108	Cultural Resources			
109	<p>Goals and Objectives: No similar goals and objectives.</p>	<p>Goals and Objectives:</p> <ul style="list-style-type: none"> • Continue to manage cultural resources in a manner that adheres to all pertinent laws and applicable standards. Management includes study, planning, coordination, and stewardship activities. • Avoid or mitigate impacts to historic properties. • Undertake interpretation and scientific study of cultural resources. • Identify and document cultural resources following professional standards. • Manage resources important to Tribes for cultural uses and provide access for traditional resource uses. • Integrate contemporary and traditional Tribal values with scientific-based research regarding cultural resources of Tribal interest. • Collaborate with Tribes and other descendent communities on cultural and natural resource interpretation. • Seek out agreements and contracts with Tribes, other agencies, private individuals and entities, or academic institutions as practicable to achieve cultural resource management and preservation goals. • Manage cultural resources consistent with their scientific and Indigenous Knowledge, educational, recreational, and traditional and contemporary Tribal uses and values. • Manage identified cultural resources and consider historic and traditional values in decision-making to ensure the planning area's cultural resource features and irreplaceable components are adequately protected. • Engage with interested groups and descendent communities on cultural resource management. 		
110	<p>Management Direction: Arcata RMP 1992 Conduct cultural resource inventories. Public lands will be managed in a manner that will protect the quality of scientific, scenic, historical, ..., and archaeological values that, where appropriate, will preserve and protect certain public lands in their natural condition...and that will provide for outdoor recreation and human occupancy and use. (pg. 5) Assess cultural resource values on a site-specific basis, generally in response to other resource objectives. An appropriate level of inventory will be done for all actions with a potential to affect these resources. The BLM will make a reasonable and good faith effort to identify and consider contemporary Native American concerns where projects might affect socio-cultural and religious values. Samoa Peninsula MA Monitor cultural resources.</p>	<p>Management Direction: No similar management action.</p>		
111	<p>Management Direction: Northwest Forest Plan 1994 Manage public lands in amendment management areas in a manner that will protect the quality of historical and archaeological values, according to FLMPA. Plan requires monitoring of resources, including, cultural resources.</p>	<p>Management Direction: Manage public lands in a manner that will protect the quality of historical and archaeological values, according to FLMPA, and current laws and policies.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
112	<p>Management Direction:</p> <p>Arcata RMP Forest Plan Amendment 1995</p> <p>Manage public lands in amendment management areas in a manner that will protect the quality of historical and archaeological values, according to FLMPA.</p> <p>Ensure that clearances for cultural resources are conducted as a part of the environmental review process.</p> <p>The Mineral Leasing Act of 1920, Geothermal Steam Act of 1970, and 43 CFR 3100 to 3500 provide the regulatory framework for issuing mineral leases. Where required, stipulations will be attached to mineral leases to mitigate impacts to cultural areas and other resources susceptible to impacts from leasing-related activities.</p> <p>Prior to disposal of public lands and interests, complete site-specific inventories and analyses for historic properties (cultural resources).</p>	<p>Management Direction:</p> <p><u>Mineral Leasing:</u> The Mineral Leasing Act of 1920, Geothermal Steam Act of 1970, and 43 CFR 3100 to 3500 provide the regulatory framework for issuing mineral leases. Where required, stipulations will be attached to mineral leases to mitigate impacts on cultural areas and other resources susceptible to impacts from leasing-related activities:</p> <ul style="list-style-type: none">• Before any specific permits are issued under leases, treatment of cultural resources will follow the procedures established by the Advisory Council on Historic Preservation for compliance with Section 106 of the NHPA. A pedestrian inventory will be undertaken of all portions that have not been previously surveyed or are identified by BLM as requiring inventory to identify properties that are eligible for the NRHP. Those sites not already evaluated for NRHP eligibility will be evaluated based on surface remains, subsurface testing, archival, and/or ethnographic sources. Subsurface testing will be kept to a minimum whenever possible if sufficient information is available to evaluate the site or if avoidance is an expected mitigation outcome. Recommendations regarding the eligibility of sites will be submitted to the BLM, and a treatment plan will be prepared to detail methods for avoidance of impacts or mitigation of effects. The BLM will make determinations of eligibility and effect and consult with SHPO as necessary based on each proposed lease application and project plans.• The BLM may require modification to exploration or development proposals to protect such properties or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized, or mitigated. Avoidance of impacts through project design will be given priority over data recovery as the preferred mitigation measure. Avoidance measures include moving project elements away from site locations or to areas of previous impacts, restricting travel to existing roads, and maintaining barriers and signs in areas of cultural sensitivity. Data recovery will be preceded by approval of a detailed research design, Tribal consultation (for sites with ancestral remains), and other requirements for BLM issuance of a permit under the Archaeological Resources Protection Act (USDI BLM 2004).		
113	<p>Management Direction:</p> <p>Arcata RMP Samoa Amendment 1995</p> <p>Comply with statutory requirements of the NHPA, NAGPRA agreement between the US Coast Guard and affiliated Tribes, and the Archeological Resource Protection Act to protect archeological sites that exist on federal land.</p> <p>Monitor cultural resources.</p>	<p>Management Direction:</p> <p>No similar management action.</p>		
114	<p>Management Direction:</p> <p>Northwest Forest Plan Survey and Manage Amendment 2001</p> <p>Facilitate occupancy and use of federal lands and resources traditionally used for cultural and spiritual purposes consistent with existing laws and regulations with all federally recognized Tribes.</p>	<p>Management Direction:</p> <p>No similar management action.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
115	<p>Management Direction:</p> <p>Redding RMP 1993</p> <p>Comply with the NHPA. Identify and fully consider any historic or archaeological sites located within a project area or on lands identified to transfer to any nonfederal entity.</p> <p>Significant archaeological or historic sites will not be damaged by BLM authorized undertakings or transferred from federal jurisdiction without appropriate impact mitigation measures 43 CFR 3809 specifically provides for the protection of cultural properties by initially prohibiting mining operators from knowingly disturbing or damaging them. The need for a cultural resources field inventory in response to a notice should be determined on the basis of professional judgment and is left to the discretion of the Redding Area Manager. Indirect impacts on cultural resources resulting from improving road access into formerly remote areas are recognized as potentially adverse. Current research will determine if and where these impacts are occurring. Impacts to cultural resources values in the form of artifact breakage or destruction of structural features resulting from vehicle activity associated with prospecting could also occur.</p> <p>Public education, research, the excavation of archaeological resources, and involvement of interested parties (principally American Indians) must conform to the Archaeological Resources Protections Act.</p> <p>Conform to the American Indian Religious Freedom Act.</p> <p>Administrative and physical measures to protect sites, monitoring of known sites on lands in long-term BLM administration, surveillance by law enforcement personnel in problem areas, and use of qualified organizations or the public in cooperative study of cultural resources.</p> <p>Prior to authorizing any surface-disturbing action or approval of land uses, BLM solicits appropriate consideration of American Indian concerns including any potential impact to traditional beliefs and heritage values. Analysis of these specific concerns is deferred to preparation of activity plans, project plans, and associated environmental analysis.</p> <p>The BLM will design livestock grazing and range improvement program to avoid adverse effects on properties included in, or eligible for inclusion in, the NRHP, unless it is not prudent or feasible. The BLM will consult with the SHPO for purposes of developing a mutually acceptable mitigation plan when avoidance is not prudent or feasible.</p> <p>All MAs</p> <p>Conduct resource inventories (archaeological, etc.) on lands available for exchange or administrative transfer.</p> <p>Trinity MA</p> <p>Increase interpretation and protection of key cultural and natural resources for the public, including the Bagdad Townsite, Rush Creek, Montana Cabin, and Salt Flat.</p>	<p>Management Direction:</p> <p>Conduct cultural resource inventories on lands available for exchange or administrative transfer. Manage land tenure adjustments (disposal and acquisition) so that significant cultural sites are retained in public ownership unless disposing to a Tribe.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
115 (cont.)	<p>Scott Valley MA Protect cultural resource values.</p> <p>Ishi MA Conserve the archaeological resources of the Deer Creek canyon. Protect the historic values of the Forks of Butte Creek canyon. Conduct resource inventories on lands available for exchange or administrative transfer.</p> <p>Klamath MA Protect historic and prehistoric resources within the project area, protect the cultural resources of the river corridor, and enhance traditional Native American Indian use opportunities.</p> <p>Sacramento River MA Conserve archaeological resources and provide research opportunities on selected threatened or damaged sites (in Bend Area). Acquire available unimproved lands that (in descending priority) contain high priority habitat along the Sacramento River as depicted in the 1988 Sacramento River Atlas, front the Sacramento River, provide physical access to public land, contain known/ potential wetland or special-status species habitat, contain important cultural resources, or facilitates overall public management within the area.</p> <p>Shasta MA Protect significant historic elements of the French Gulch and Deadwood mining districts. Conserve and interpret prehistoric and historic archaeological resources on public lands (in Swasey Drive ACEC) following the Swasey Area activity plan. Protect the historic values of the area. Develop an integrated resource activity plan that identifies high priority land acquisition, details habitat restoration needs for anadromous salmonids, delineates desired plant community and restoration needs for riparian vegetation, describes protective management facilities, lists important cooperators and their responsibilities, identifies important cultural resources, and describes the recreational opportunities for the public.</p>	(see above)		
116	<p>Management Direction: Geothermal Leasing in the Western United States RMP Amendment 2008 Manage public lands in amendment management areas in a manner that will protect the quality of historical and archaeological values, according to FLMPA. Before any specific permits are issued under leases, treatment of cultural resources will follow the procedures established by the Advisory Council on Historic Preservation for compliance with Section 106 of the National Historic Preservation Act. A pedestrian inventory will be undertaken of all portions that have not been previously surveyed or are identified by BLM as requiring inventory to identify properties that are eligible for the NRHP. Those sites not already evaluated for NRHP eligibility will be evaluated based on surface remains, subsurface testing, archival, and/or ethnographic sources. Subsurface testing will be</p>	<p>Management Direction: Manage public lands in a manner that will protect the quality of historical and archaeological values, according to FLMPA, and current laws and policies.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I 16 (cont.)	<p>kept to a minimum whenever possible if sufficient information is available to evaluate the site or if avoidance is an expected mitigation outcome. Recommendations regarding the eligibility of sites will be submitted to the BLM, and a treatment plan will be prepared to detail methods for avoidance of impacts or mitigation of effects. The BLM will make determinations of eligibility and effect and consult with SHPO as necessary based on each proposed lease application and project plans. The BLM may require exploration or development proposals to protect such properties or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated. Avoidance of impacts through project design will be given priority over data recovery as the preferred mitigation measure. Avoidance measures include moving project elements away from site locations or to areas of previous impacts, restricting travel to existing roads, and maintaining barriers and signs in areas of cultural sensitivity. Data recovery will be preceded by approval of a detailed research design, Native American Consultation (for site with ancestral remains), and other requirements for BLM issuance of a permit under the Archaeological Resources Protection Act (USDI BLM 2004). If cultural resources are present at the site, or if areas with a high potential to contain cultural material have been identified, a CRMP will be developed. This plan will address mitigation activities to be taken for cultural resources found at the site. Avoidance of the area is always the preferred mitigation option. Other mitigation options include archaeological survey and excavation (as warranted) and monitoring. If an area exhibits a high potential, but no artifacts or features were observed during an archaeological survey, monitoring by a qualified archaeologist could be required during all excavation and earthmoving in the high-potential area. A report will be prepared documenting these activities. The CRMP will (1) establish a monitoring program, (2) identify measures to prevent potential looting/vandalism or erosion impacts, and (3) address the education of workers and the public to make them aware of the consequences of unauthorized collection of artifacts and destruction of property on public land (USDI BLM 2005). Unexpected discovery of cultural or paleontological resources during construction will be brought to the attention of the responsible BLM authorized officer immediately. Work will be halted in the vicinity of the find to avoid further disturbance to the resources while they are being evaluated and appropriate mitigation measures are being developed.</p>	(see above)		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
117	<p>Management Direction: No similar management action</p>	<p>Management Direction:</p> <ul style="list-style-type: none"> • Comply with statutory requirements of all applicable cultural resource laws, and BLM policy, such as the National Historic Preservation Act (NHPA), the Archeological Resource Protection Act (ARPA), the Antiquities Act, the Native American Graves Protection and Repatriation Act (NAGPRA) and others to manage cultural resources that exist on federal lands administered by the BLM. • Coordinate with BLM, local and state law enforcement personnel, and Tribes, as appropriate to resource type, in the enforcement of the ARPA, NAGPRA, and other appropriate laws and regulations. • Use the BLM NW California Class I Overview in management decisions, and the resultant predictive models to help prioritize surveys, including areas of risk, scientific investigations, and interpretive actions. • Prioritize future surveys and research on projects that would refine and ground-truth the BLM NW Class I cultural resource predictive model. • Follow Protocol guidance and supplemental procedures and amendments contained in the State Protocol Agreement among the California State Director of the Bureau of Land Management and the California State Historic Preservation Officer and the Nevada State Historic Preservation Officer Regarding The Manner in which the Bureau of Land Management Will Meet Its Responsibilities Under The National Historic Preservation Act and the National Programmatic Agreement Among The BLM, The Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (hereafter referred to as the “Protocol”). • Establish procedures for how to co-manage historic properties that are located partially on public or private lands to ensure protection of resources on public lands. BLM will work cooperatively with other landowners to manage significant cultural properties that cross on and off BLM lands (e.g., California National Historic Trail) and look for easements to protect regionally significant resources until land can be formally acquired if necessary. • BLM will work cooperatively with other land management agencies with a goal of protection and cohesive management of historic properties on a landscape level. Work with Society for California Archaeology, Tribes, and other partners to train volunteer stewards as monitors of sensitive or vulnerable cultural sites. • Coordinate with BLM, local and state law enforcement and Tribes, as appropriate to resource type, in the enforcement of the ARPA, NAGPRA, and other appropriate laws and regulations. Evaluate sites in the broader context of historic landscapes and townsites. • Improve facilitation of use of federal lands and resources traditionally used for cultural, sacred, and religious purposes consistent with existing laws and regulations with all Tribes and other descendent communities. • Coordinate with the Tribes in gathering ethnographic information regarding Tribal areas of concern, including TCPs, areas of sacred or religious significance, subsistence use areas, and areas of historic use. Consider Tribal concerns where projects might affect socio-cultural and religious values, consistent with applicable laws, Executive Orders, Secretarial Orders, and administration or agency instruction. This information will be subject to restricted use to assist Tribal consultation and protect and manage these areas. • Prioritize areas for survey that are sensitive or vulnerable based on the Class I Overview and associated predictive model. These include, but are not limited to the following: <ul style="list-style-type: none"> – ACECs with cultural resources as a relevance and importance value – Areas at risk due to climate change or other environmental factors – Areas where scientific interest for new or continued research exist. – Areas with potential for future surface-disturbing activities • Either as an integrated component of the existing USDI inter-agency, university-based Cooperative Ecosystem Study Unit (CESU) Program or using other avenues, the BLM would work toward establishing a network of university and college partners, and enter into heritage management partnerships or agreements, with partners such as Tribes, other descendent communities, private companies, and NGOs to assist in cultural resource inventories, scientific and humanities-based research and study, documentation, public interpretation, publication, web-based outreach, and education. • Improve site monitoring and condition assessment processes where necessary. Prioritize sites where protection or stabilization has been, or could be, an issue. This program would be rigorous and tied to the cultural data base files and other information sources. • Restore, maintain, and interpret, cultural resources and protect them from looting, vandalism, erosion, and other impacts. • Manage to minimize or eliminate potential cultural resource conflicts in the planning area, such as between human uses and the geographic characteristics of sacred sites, historic properties, and cultural landscapes (e.g., springs, ridges, peaks, caves, waterfalls, rock shelters, mined ground, tailing fields). • Balance retention of historic mining remains and landscapes with reclamation and restoration efforts to protect fisheries, water, and other resources while maintaining, where possible, the integrity of these cultural sites. • Work collaboratively with partners to develop management plans for restoration areas, including identification of BMPs for the protection of cultural resources, and priorities for survey and protection. • Incorporate Indigenous Knowledge, also commonly referred to as Traditional Ecological Knowledge (TEK), Native Science, and Traditional Resource and Environmental Management (TREM) into land use planning and subsequent implementation-level decisions. • Implement requirements from existing regulatory mandates, Executive Orders, Secretarial Orders and agency direction with regards to Tribal consultation, Agency-Tribal co-stewardship/co- management of land, and addressing impacts to and management of Tribal cultural places, Tribal sacred sites and areas of concern. • Pursue acquiring access through private lands to public lands when appropriate and possible for the purpose of archaeological research, scientific studies, educational opportunities, and Tribal and other descendant communities’ interests and values. • Coordinate with partners and Tribes regarding Bend ACEC habitat restoration projects 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I 17 (cont.)	(see above)	<ul style="list-style-type: none"> If significant or sensitive cultural resources are found, BLM would determine whether a CRMP would be required to manage those resources. The determination on whether a CRMP is required would be made on a case-by-case basis and may require consultation with the SHPO and/or the Tribes as appropriate. Prioritize fuels reduction and the management of hazardous fuels within cultural site boundaries to make sites more resilient to fire. Additionally, coordinate with Tribes to provide opportunities for Tribal involvement and incorporating traditional cultural burning techniques at cultural sites, as appropriate. Work cooperatively with Tribes to conduct appropriate vegetation and wildlife management treatments (including cultural burning) to facilitate their ability to gather and use traditional plants and wildlife. Select historic mining locations in the Trinity Watershed should be earmarked for interpretative signing and education purposes (including Ohio Flat). Coordinate with BOR archaeologists regarding mining sites' management within proposed Trinity River restoration locations. Work with miners and mining and prospector groups to protect heritage resources while accommodating mineral exploration and recovery. Provide public safety while considering AML heritage values and remediation. 		
I 18	Management Direction: No similar management action	Management Direction: <ul style="list-style-type: none"> Prioritize significant heritage sites for protection, scientific study, reclamation, or restoration. Manage visitation to those sites as needed to protect site integrity. If monitoring indicates damage to site integrity from visitation, implement restrictions on visitation as necessary to protect the resource. This could include permitted access or docent-led tours only. If damage continues, close sites to public access. Work with Tribes to protect traditional uses and ecosystems. 	Management Direction: <ul style="list-style-type: none"> Identify sites for education and interpretation to support heritage tourism. At sites identified for education and interpretation, develop a strategy to “harden the site” to protect it and work with interpretive staff and Tribal partners to enhance and develop interpretive opportunities for visitors. Provide educational materials to the public emphasizing the importance of cultural resources and the appropriate ways to enjoy those resources without damaging them. Use educational outreach to educate the public about mining and western heritage sites. Develop for motorized and non-motorized cultural interpretative spur destinations and loops. Where appropriate, use signage to inform visitors of the range of information we have of the lifeways of local pre-Colonial human communities. Coordinate interpretive efforts with Tribal partners. Install kiosks where appropriate to educate the public about the history and ethnography of the area, and to promote proper stewardship of heritage resources. Examples of priority interpretation sites include: <ul style="list-style-type: none"> Create interpretative trail elements along Butte Creek Trail to highlight mining history and operations in Butte County as well as complete restoration projects to protect historical sites. Present the Trinity River’s gold mining history to the public at select locations. Develop a presentation of the water ditches sources, systems, locations, holding ponds for overnight accumulations, etc. in the Clear Creek area. Retain the Salmon and heritage Information Boards at the Clear Creek Gorge Overlook. Retain or enhance interpretive signs and materials at the Samoa Dunes Recreation Area pertaining to the various cultural themes that are represented there. 	Management Direction: Same as Alternative C for sites that experience heavy visitation, which include: <ul style="list-style-type: none"> Boswell Mine Clear Creek and Princess Ditches Horsetown Ponderosa Way (and associated bridges, structures) Sacramento River Rail Trail Baghdad Cemetery Pioneer Baby Grave Yreka Trail Lost Emigrant Trail Swasey Archaeological District Forks of Butte Archaeological District West Weaver Creek Mining Landscape Humboldt Harbor Lighthouse Samoa Dunes World War II bunkers Same as Alternative B for all other sites.
I 19	Paleontological Resources			
I 20	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none"> Identify and evaluate areas containing, or likely to contain, vertebrate or noteworthy invertebrate or plant fossils prior to authorizing surface-disturbing activities. Promote scientific, educational, and recreational uses of fossils consistent with applicable laws, policies, and regulations. Identify, evaluate, study, interpret, and manage paleontological resources in the planning area. Identify and protect paleontological resources on all BLM lands where practicable. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
121	<p>Management Direction: Management of paleontological resources does not vary by alternative. There is no existing management direction included in the current RMPs.</p> <ul style="list-style-type: none"> The 2017 paleontological inventory report (Shapiro 2017) and any subsequent applicable studies will be used to inform where the need for paleontological research or the preservation of paleontological resources is highest. Prioritize scientific research as appropriate in Potential Fossil Yield Classification (PFYC) 4 and 5 areas. Prioritize fuels and vegetation management projects in areas with known or high probability of vertebrate fossils or significant non-vertebrate fossils to prevent damage to those resources from the impacts of wildfire, such as increased erosion. Inadvertent discovery stipulation would be included on all ROW grants, leases, and authorizations (BLM-permitted use). These stipulations would be consistent with Chapter III of BLM Handbook 8270-I and would include the following steps: <ul style="list-style-type: none"> An assessment by a BLM paleontologist (or other qualified paleontologist approved by the BLM) of the threat of damage to the resource. A determination of whether avoidance of the resource is possible. If avoidance is not possible, an assessment of appropriate mitigation for project impacts to the resource. BLM would identify criteria or use restrictions to ensure that: <ul style="list-style-type: none"> Areas containing, or that are likely to contain, vertebrate or noteworthy occurrences of invertebrate or plant fossils are identified and evaluated prior to authorizing surface-disturbing activities; Management recommendations are developed to promote the scientific, educational, and recreational uses of fossils as appropriate; and Threats to paleontological resources are identified and mitigated as appropriate. Collection, removal, excavation, or casting of vertebrate fossils would be prohibited unless allowed under a scientific/research permit issued by the BLM California State Office. Lands identified for disposal would be evaluated to determine whether such actions would remove important fossils from federal ownership. If it is determined that important fossils would be removed, then any applicable mitigation requirements under federal law, regulation, or BLM policy would be applied. Promote the stewardship, conservation, and appreciation of paleontological resources through appropriate educational and public outreach programs. In areas with high potential for considerable fossil discovery (PFYC 4 and 5): <ul style="list-style-type: none"> BLM would educate on-the-ground personnel conducting ground disturbing activities on the identification of significant fossil resources and require reporting of discoveries. All permit administrators would provide applicable regulatory and curation requirements related to paleontological resources to permittees as a condition of their permit. BLM permittees undertaking ground-disturbing activities would be required to contact the BLM if they encounter vertebrate fossils or significant invertebrate fossils, and document and inform the BLM of the discovery. In those cases where vertebrate or considerable invertebrate fossils are reported to the BLM, the following options would be considered: <ul style="list-style-type: none"> Leaving the discovery as-is in its original location. Partnering with or contracting a qualified paleontologist to further assess or excavate the find. Collecting and sending the specimens to appropriate universities or museums for curation. Collecting for BLM interpretive use, if appropriate. <p>Public/Recreational Fossil Collecting</p> <ul style="list-style-type: none"> Recreational collectors may collect up to 25 pounds/day with a maximum of 250 pounds total annually of petrified wood. This is for personal non-commercial use. Surface disturbance must be minimal, and collectors may only use non-power hand tools. As allowed under existing regulations, recreational collectors may collect and retain reasonable amounts of common invertebrate and plant fossils for personal, non-commercial use. Surface disturbance must be minimal, and collectors may only use non-power hand tools. Recreational collecting of vertebrate fossils is not allowed. <p>Permitted Research Collection</p> <ul style="list-style-type: none"> Anyone engaging in research or salvage collection of paleontological resources must have a paleontology permit issued by the BLM. Collection would be done as per professional research standards, and all collected items would be stored in qualified repositories and made available for research and education. <p>Permitted Projects</p> <ul style="list-style-type: none"> Before surface-disturbing activities begin, the need for paleontological mitigation would be assessed. This would be done by determining what geologic units are to be affected by the work, and their PFYC rankings, as presented in the inventory report GIS products (Shapiro 2017). All surface-disturbing activities in PFYC 4 and 5 areas would require a paleontological survey as part of the permitting process. All permitted surface-disturbing projects would be required to conduct paleontology surveys in PFYC 3 areas prior to approval if area has a known potential for significant paleontological resources. Paleontological monitors would be required during project construction if pre-construction surveys find significant paleontological resources (e.g., vertebrate fossils) BLM would work with project applicant and/or other parties (if applicable) to develop a mitigation plan to address resource impacts. 			
122	Visual Resources			
123	<p>Goals and Objectives: No similar goals and objectives.</p>	<p>Goals and Objectives: Manage public lands in a manner which would protect the quality of the scenic (visual) values of these lands for present and future generations.</p> <ul style="list-style-type: none"> Manage public lands administered by the BLM according to VRM classes that are determined based on land use allocation decisions made in this RMP. Maintain the overall integrity of visual values in accordance with visual resource management class objectives while allowing for development of existing and future uses. Maintain natural and cultural scenic values with the application of all appropriate Best Management Practices (BMPs) in Appendix F. Reduce visual impacts with reclamation of landscapes, restoration of native habitats, and rehabilitation of waterways and riparian areas. Manage the visual resource management class objectives of specially designated areas as required by legislation or administrative decision. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
124	Management Direction: <ul style="list-style-type: none"> The following acreage is managed as VRM class I (Map 2-6): 59,000 The following acreage is managed as VRM class II: 24,600 The following acreage is managed as VRM class III: 297,000 The following acreage is managed as VRM class IV: 1,600 	Management Direction: <ul style="list-style-type: none"> The following acreage would be managed as VRM class I (Map 2-7): 70,600 The following acreage would be managed as VRM class II: 72,400 The following acreage would be managed as VRM class III: 237,800 The following acreage would be managed as VRM class IV: 1,400 	Management Direction: <ul style="list-style-type: none"> The following acreage would be managed as VRM class I (Map 2-8): 58,500 The following acreage would be managed as VRM class II: 20,900 The following acreage would be managed as VRM class III: 301,900 The following acreage would be managed as VRM class IV: 900 	Management Direction: <ul style="list-style-type: none"> The following acreage would be managed as VRM class I (Map 2-9): 59,000 The following acreage would be managed as VRM class II: 61,600 The following acreage would be managed as VRM class III: 260,800 The following acreage would be managed as VRM class IV: 800
125	Management Direction: No similar management action	Management Direction: The following areas would be managed as VRM class I: <ul style="list-style-type: none"> Wilderness Areas and Section 603 WSAs Section 202 WSAs The following areas would be managed as VRM class II: <ul style="list-style-type: none"> WSR suitable river segment corridors with a tentative classification of Wild or Scenic Eel River WSR segment corridors with a classification of Wild and Scenic National Historic Trails: Nobles and Yreka Trail routes for the California National Historic Trail Lands with wilderness characteristics managed as a priority. Deer Creek ACEC Forks of Butte Creek ACEC Ma-le'l Dunes ACEC Sacramento River Bend ACEC (lands with wilderness characteristics areas only) Grass Valley Creek ACEC (south of Highway 299) Sheep Rock ACEC Eden Valley ACEC (WSAs only) Beegum Creek Gorge ACEC North Fork Eel ACEC (WSR corridor only) The following areas would be managed as VRM class III: <ul style="list-style-type: none"> WSR suitable river segment corridors with a tentative classification of Recreational Eel River WSR segment corridors with a classification of Recreational Klamath River WSR segment corridors Existing or acquired BLM-managed lands within the Coastal Strip All SRMAs and ERMAs (except Iron Mountain Shooting Area) The following ACECS: <ul style="list-style-type: none"> Baker Cypress ACEC Butte Creek ACEC Gilham Butte ACEC Hawes Corner ACEC Iaqua Butte ACEC Lacks Creek ACEC Sacramento Island ACEC Sacramento River Bend ACEC (portion) Shasta and Klamath River Canyon ACEC Grass Valley Creek ACEC (north of Highway 299) 	Management Direction: The following areas would be managed as VRM class I: <ul style="list-style-type: none"> Wilderness Areas and Section 603 WSAs The following areas would be managed as VRM class II: <ul style="list-style-type: none"> WSR suitable river segment corridors with a tentative classification of Wild or Scenic Eel River WSR segment corridors with a classification of Wild and Scenic National Historic Trails: Nobles and Yreka Trail routes for the California National Historic Trail Lands to protect wilderness characteristics as a priority. Gilham Butte ACEC Eden Creek ACEC (WSR corridor only) The following areas would be managed as VRM class III: <ul style="list-style-type: none"> WSR suitable river segment corridors with a tentative classification of Recreational Eel River WSR segment corridors with a classification of Recreational Klamath River WSR segment corridors Existing or acquired BLM-managed lands within the Coastal Strip All SRMAs and ERMAs Sacramento River Bend ACEC Swasey Drive Area ACEC Grass Valley Creek ACEC (north of Highway 299) Eden Creek ACEC (outside WSR corridor) The following areas would be managed as VRM class IV: <ul style="list-style-type: none"> Designated Communication Sites Iron Mountain Target Shooting SRMA Designated corridors Washington Mine All other BLM-managed lands not identified above would be managed as VRM class III.	Management Direction: Same as Alternative B.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
125 (cont.)	(see above)	<ul style="list-style-type: none"> – Swasey Drive Clear Creek Greenway ACEC – Black Mountain ACEC – Upper Klamath Bench ACEC – Upper Mattole ACEC – Eden Valley ACEC (outside of WSA) – North Fork Eel ACEC (outside of WSR corridor) – Willis Ridge ACEC – South Spit ACEC – Corning Vernal Pools ACEC – North Table Mountain ACEC <p>The following areas would be managed as VRM class IV:</p> <ul style="list-style-type: none"> • Designated Communication Sites • Iron Mountain Target Shooting Recreation Area • Designated utility corridors • Washington Mine • All other BLM-managed lands not identified above would be managed as VRM class III. 	(see above)	(see above)
126	Management Direction: Arcata RMP 1992 Due to the scattered nature and remoteness of the public lands, visual resource management classes are considered to be inventory standards rather than planning decisions; VRM classes will be determined on a site-specific basis through standard VRM inventories, and contrast ratings will be used to mitigate projects which may significantly impact visually sensitive areas.	Management Direction: No similar management action	Management Direction: No similar management action	Management Direction: No similar management action
127	Management Direction: Redding RMP 1993 All BLM management actions must conform to the objectives of the assigned VRM Class. BLM will ensure that BLM-approved or authorized actions meet these long-term objectives. VRM prescriptions, however, will be limited to only those areas assigned VRM Class I and Class II. Prescriptions will not be assigned to areas where lower visual resource management classes have been determined. Visual resource management within designated wilderness and wilderness study areas must conform to the protection of wilderness values including scenic quality. Ishi MA <u>Battle Creek (below Manton Road)</u> Maintain the scenic quality of the area. Manage the corridor as VRM Class II. <u>Deer Creek</u> Protect the scenic quality of the canyon. Manage as VRM Class I. <u>Forks of Butte Creek</u> Protect and enhance the scenic quality of the canyon. Manage as VRM Class II. Klamath MA <u>Shasta and Klamath Rivers Canyon</u> Manage future developments outside of public highway rights of way as VRM Class II. <u>Upper Klamath River</u> Manage Area as VRM Class II. <u>Shasta Valley Wetlands</u> Manage as VRM Class II.	Management Direction: No similar management action	Management Direction: No similar management action	Management Direction: No similar management action

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
127 (cont.)	<p>Sacramento River MA <u>Sacramento Island</u> Manage as VRM Class II. Cottonwood Creek and Sacramento River Parcels Manage as VRM Class II. <u>Bend Area</u> Maintain and improve, if feasible, scenic quality. Manage as VRM Class II. Scott Valley MA <u>Quartz Hill</u> Maintain the existing scenic quality of BLM administered lands. Shasta MA <u>Interlakes Special Recreation Management Area</u> Maintain the existing scenic quality of the area. <u>Lower Clear Creek and Mule Mountain</u> Maintain the scenic quality of the canyon above Clear Creek Road Bridge. Manage all public land upstream of Clear Creek Road Bridge as VRM Class II. Trinity MA <u>North Of Trinity River/Deadwood/Indian Creek</u> Maintain the existing scenic quality of BLM lands. Maintain existing Visual Resource Management classes. <u>Grass Valley Creek Watershed</u> Manage as VRM Class II.</p>	(see above)	(see above)	(see above)
128	<p>Management Direction: Trinity MA Trinity River Maintain the scenic quality along the river corridor. Manage all public lands as VRM class II.</p>	<p>Management Direction: Trinity River WSR</p> <ul style="list-style-type: none"> Entire Trinity River WSR managed as VRM class II. 	<p>Management Direction: Trinity River WSR</p> <ul style="list-style-type: none"> Limekiln Gulch to Steel Bridge would be managed as VRM class II. Douglas City Campground to Sky Ranch would be managed as VRM class II. The remainder of the Trinity River WSR would be managed as VRM class III. 	<p>Management Direction: Same as Alternative C.</p>
129	<p>Management Direction: No similar management action.</p>	<p>Management Direction: Manage night sky resources for the NCIP area by setting management prescriptions on a site-specific basis:</p> <ul style="list-style-type: none"> Permanent outdoor lighting in VRM class I areas would not be allowed. Impacts to dark night skies would be prevented or reduced through the application of specific mitigation measures identified in activity level planning and NEPA review. These measures may include directing all light downward, using shielded lights, using only the minimum illumination necessary, using lamp types such as sodium lamps (less prone to atmospheric scattering), using circuit timers, and using motion sensors. Any BLM-authorized facilities would use the best technology available to minimize light emissions. Implement any future BMPs related to the protection of night sky resources. 	<p>Management Direction: No similar management action.</p>	<p>Management Direction: Same as Alternative B.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
130	Cave and Karst			
131	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none">Prioritize the review of identified caves to determine appropriate protection.Manage to preserve the integrity of caves of ecological or cultural importance.Identify significant caves as mandated by the Federal Cave Resources Protection Act of 1988. Caves meeting criteria must be designated as significant as set forth in 43 CFR 37.11(f). For each designated significant cave, consider whether management action is needed to provide adequate protection for significant caves. Best management practices objectives and prescriptions should be set for each designated significant cave.		
132	Management Direction: Management for cave and karst resources does not vary by action alternative. There is no existing management direction included in the current RMPs. <ul style="list-style-type: none">If significant cultural or natural resources are discovered in a cave, the BLM may allow access to the cave by permit only as needed to protect the resource. If monitoring shows that impacts continue to occur or if BLM determines the cave presents a health or safety risk, the BLM may close the caves to all public access.Caves containing sensitive species (invertebrates, plants) would be managed to maintain habitat for those organisms.Prioritize cave inventories in ACECs for biological and cultural resources.Identify caves with important bat resources.Consider restricting access to caves, with a targeted approach that prioritizes locations where significant bat populations are found or where illegal excavations have occurred.BLM would assess cultural significance and eligibility of rock shelters and caves for NRHP and would provide for bat passage and other wildlife uses as appropriate.Recommend locations to test for white nose syndrome as a subset of sites where important bat resources are located.If evidence of white nose syndrome is found, rock shelter or cave would be closed to public access and mitigation efforts attempted if feasible. Closures would be coordinated with public, local, state, federal, and Tribal landowners.During implementation-level travel management planning, consider travel management limitations around threatened cave and karst resources.Control, and if necessary, prohibit grazing in and around threatened cave and karst as necessary to protect these resources.Restrict and, if necessary, prohibit timber harvest around threatened cave and karst as necessary to protect these resources.Do not permit mineral materials development at locations of significant cave and karst resources.Emphasize cave surveys to identify new locations and map the interior where safe and prudent to do so.BLM-permitted activities would be required to relocate where practicable to avoid impacts to significant cave and karst resources.Identify caves that have public interpretive value and manage for those values.No research or public interpretation would be conducted in or about caves with cultural resources without Tribal consultation.			
133	Forestry			
134	Goals and Objectives: <ul style="list-style-type: none">No similar goals and objectives.	Goals and Objectives: Refer to the <i>Vegetation</i> section for additional goals and objectives that may pertain to forestry management. Enable forests to: <ul style="list-style-type: none">Recover from inadequate past management measures.Respond beneficially to climate-driven stresses, wildfire, and other disturbance with resilience.Ensure beneficial or neutral ecological impacts from wildfire.Contribute to recovery of federally listed species, including NSO and marbled murrelet. To enable forests to meet these goals, BLM would: <ul style="list-style-type: none">Identify the desired composition and desired range of forest health conditions throughout the forests and woodlands.Identify which characteristics (indicators) the BLM should use to describe healthy forest conditions (i.e., desired outcomes) for forest/woodland types found within the planning area.Continue to place emphasis on a proactive fuels management program.Allow fire to play a more natural role in the planning area’s ecosystems.Reduce and/or modify fuel loads to prevent harm caused by catastrophic wildfires.Reduce the potential for conversion of forests to non-forests.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
135	<p>Arcata RMP 1992</p> <p>Butte Creek MA</p> <p>Objective: Enhance old-growth forest characteristics and related wildlife species, particularly the northern spotted owl.</p> <p>Management Direction:</p> <ul style="list-style-type: none"> Remove all suitable CFL from the timber production base. This is currently about 2,100 acres. Tree planting, brush and hardwood release, and some pre-commercial thinning will be allowed to improve, create or increase wildlife habitat and biodiversity, as well as to enhance old-growth forest characteristics (See Management Objectives) and protect the forest resource from insect, disease, and fire. All forest stands are available for non-consumptive research and cone collecting. Fire, disease, and insects will be controlled to prevent spreading to other lands, and to protect the existing forest. Monitor northern spotted owls and other old-growth characteristics. Continue to inventory habitat conservation/critical habitat areas. <p><u>King Range and Vicinity</u></p> <p>Objective: Enhance the watershed condition and visual quality of coastal streams. Improve, create, or increase wildlife habitat and biodiversity and provide protection to the forest resources.</p> <p>Management Direction:</p> <ul style="list-style-type: none"> Continue inventory of habitat conservation/critical habitat areas. Remove 900 acres of suitable commercial forest land west of Cooskie Ridge from the timber production base. Include all other suitable commercial forest land in the management area, except for streamside buffers, in the CFL production base. No annual allowable cut is planned for the next 100 years. Forest management activities include tree planting, brush/hardwood release and pre-commercial thinning as part of the forest improvement program. <p>Lacks Creek MA</p> <p>Objective: Protect significant old-growth stands:</p> <ul style="list-style-type: none"> From influences that could alter or disrupt the intrinsic values or ecological systems of these areas. To preserve the full range of genetic and behavioral diversity for old-growth associated plants and animals and special status species. To provide research and higher education opportunities for scientists and teachers. To allow natural physical and biological processes to prevail. To re-establish and accelerate development of mature forest structural characteristics on previously entered stands for long-term restoration of this element of biological diversity 	<p>Management Direction:</p> <ul style="list-style-type: none"> The boundaries of mapped Late Successional Reserves (LSRs) (78,600 acres) would not change (Map 2-10 in Appendix A). Late Successional Reserves would be managed to protect and enhance conditions of late successional forest ecosystems, which serve as habitat for late-successional related species, including the NSO. The concept of the “unmapped LSR” from the NWFP would not be carried forward. Prioritize forest health and fuels treatments to increase resilience of stands from disturbance events, improve forest health, and reduce tree mortality. Special consideration would be given to ACECs and late successional forest communities. Implement forest health and fuels treatments that promote fire resiliency, recognizing the role that natural fire regimes historically played in protecting forest stands from catastrophic fire. Consider climatic shifts in vegetation and identify reforestation plantings to best maintain ecosystem health and function. Consider climatic shifts in vegetation when determining what type of planting should be done. Prioritize restoring minor habitat types across the landscape. In harvested or disturbed areas, ensure the establishment and survival of desirable trees appropriate to the site and enhance their growth. Provide for complex early successional ecosystems. Provide for a variety of forest structural stages distributed both spatially and temporally. Increase diversity of stocking levels and size classes within and among stands. Personal or commercial firewood collection would be authorized by permit only. 		<p>Management Direction: Same as Alternatives B and C, with the following addition:</p> <ul style="list-style-type: none"> Criteria for allowable wood gathering areas would be as follows, unless otherwise specified: <ul style="list-style-type: none"> Dead and downed Near existing roads Collection area closures could occur due to fire, weather, seasonal (based on resource constraints and potential for severe impacts [wet conditions]), or road conditions, on a case-by-case basis. Collection of green materials would be collected on a case-by-case basis.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
135 (cont.)	<ul style="list-style-type: none">To provide minor forest products to the public as they become available through facility/road maintenance and forest development as described in bullet above. <p>Management Direction:</p> <ul style="list-style-type: none">Manage the area for various forest values. About 200 acres of streamside buffers and old-growth reserve areas will be removed from the suitable CFL of 3,300 acres for a net available CFL of about 3,100 acres.Tree planting, brush and hardwood release and pre-commercial thinning will be concentrated on these 3,100 acres as part of the forest improvement program.Manage 4,100 acres as an LSR as part of a regional network of existing older forests providing a distribution, quantity, and quality of old-forest habitat and to provide habitat for viable, well distributed populations of species. These late successional forest areas are not subject to programmed timber harvest. Management standards and guidelines are designed to improve habitat in younger stands or to produce stand structure and components associated with late-successional conditions.On previously entered forest stands (including acquired cutover lands), actively regenerate new stands and promote forest development in established young stands on approximately 550 acres that do not currently provide mature forest structure. Minor forest products such as poles, firewood, and seeds will be made available in conjunction with habitat improvement projects. <p>Manage 72,764 acres as LSRs to comply with the USFWS's recovery guidelines for the northern spotted owl and to allow critical habitat to perform the biological function for which it was designated. Acquire 12,389 acres to enhance the long-term ability of the Lacks Creek area to support the USFWS's draft final recovery plan numerical goals for pairs of northern spotted owl.</p> <ul style="list-style-type: none">Prepare a watershed activity plan that includes:<ul style="list-style-type: none">Silvicultural activities in previously entered stands for developing suitable habitat for late-successional forest species where those conditions do not now exist (5-year LSR development/improvement plan.Management actions, which could include silvicultural activities, for protecting or enhancing old-growth values within the RNA/ACEC. <p>Red Mountain MA</p> <p>Objectives:</p> <p>Protect existing old-growth stands from influences that could alter or disrupt the intrinsic values, stability, or ecological processes of these systems.</p> <p>Re-establish and accelerate development of mature forest structural characteristics on previously entered stands and acquired cutover lands for long-term restoration of this element of biological diversity.</p>	(see above)		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
135 (cont.)	<p>Establish the management area as a lowland Douglas-fir population center for the NSO, maintaining habitat for a minimum of twenty pair sites.</p> <p>Restore ecological processes that maintain late successional forest ecosystems.</p> <p>Provide minor forest products (firewood, seeds, and poles) to the market in accordance with NVFP objectives and standards and guidelines for LSR and matrix.</p> <p>Management Direction:</p> <p>Remove suitable commercial forest land in the following areas from the timber production base:</p> <ul style="list-style-type: none">Northern California Coast Range Preserve.Cedar Creek portion of the Red Mountain ACEC (T.23N., R.17W., MDM, Section 1).Wild and Scenic River Corridor.Stream buffers as specified in SYU 13 environmental impact statement. <p>Implement forest management activities on about 16,000 acres which includes tree planting, brush and hardwood release, and pre-commercial thinning as part of the forest improvement program.</p> <p>Manage 34,344 acres (approximately 97 percent) as LSR as part of a regional network of existing older forests providing a distribution, quantity, and quality of old-forest habitat and to provide habitat for viable, well distributed populations of species. These late- successional forest areas are not subject to programmed timber harvest. Management standards and guidelines are designed to improve habitat in younger stands or to produce stand structure and components associated with late-successional conditions.</p> <p>Manage 1,320 acres as matrix.</p> <p>Manage 22,000 acres key watersheds.</p> <p>Employ a concept/strategy of ecosystem management that includes late-successional forest/NSO core habitat and other private lands that lie within a zone of influence of the existing pattern of public landownership. Participate with private landowners to provide habitat management options to meet both federal and state habitat conservation strategies and improve public land management. Through cooperative management planning, use acquisition/exchange, cooperative management agreements, conservation easements, direct financial incentives, mitigation banking, and so forth to meet habitat management objectives. These areas include:</p> <ul style="list-style-type: none">Approximately 8,500 acres of potential late successional forest/NSO core habitat in the McCoy Creek, East Branch South Fork Eel River, Tom Long Creek, Charlton Creek, Tenmile Creek, and South Fork Eel River watersheds.Approximately 2,500 acres of endangered plant habitat adjacent to the Red Mountain ACEC in the Cedar Creek and Red Mountain Creek watersheds.	(see above)		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
135 (cont.)	<ul style="list-style-type: none">Approximately 50,000 acres of private lands, providing potential connectivity between late successional forest blocks on acquired lands and previously entered forest stands actively regenerate new stands and promote forest development in established young stands that do not currently provide mature forest structure. <p>Identify opportunities to re-create, to the extent possible, the structural and compositional features of late-successional forests in even-aged stands through silviculture.</p> <p>Develop cooperative management partnerships to meet habitat improvement objectives and provide incidental forest products. These products may result from thinnings of overstocked conifer or hardwood stands, site preparation for small-scale conversion of young hardwood stands to increase the conifer component, road and other facility maintenance, or salvage following catastrophic events.</p> <p>Complete 5-year project planning schedule for late-successional forest development.</p> <p>Establish cooperative management partnerships for sustainable forestry practices in South Fork Eel River watershed to promote habitat development projects and provide local supply of alternative forest products.</p> <p>Covelo Vicinity MA</p> <p>Objectives:</p> <p>Implement forest management activities on approximately 9,450 CFL acres which include tree planting, brush and hardwood release, and pre-commercial thinning as part of the forest improvement program. Investment in forest improvement activities will be kept to a minimum to maintain the health of the forest.</p> <p>Protect existing old-growth stands from influences that could alter or disrupt the intrinsic values, stability, or ecological processes of these systems.</p> <p>Re-establish ecological processes such as fire to maintain terrestrial habitats emphasizing management of brushlands to maintain diversity and forest communities to manage fir encroachment and maintain pine component.</p> <p>Re-establish and accelerate development of mature forest structural characteristics on previously entered stands and acquired cutover lands for long-term restoration of this element of biological diversity.</p> <p>Restore ecological processes that maintain late-successional forest ecosystems.</p> <p>Identify opportunities to re-create, to the extent possible, the structural and compositional features of late-successional forests in even-aged stands through silviculture.</p> <p>Management Direction:</p> <p>Manage 24,000 acres as LSR as part of a regional network of existing older forests providing a distribution, quantity, and quality of old-forest habitat and to provide habitat for viable, well distributed populations of species. These late- successional</p>	(see above)		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I 35 (cont.)	<p>forest areas are not subject to programmed timber harvest. Management standards and guidelines are designed to improve habitat in younger stands or to produce stand structure and components associated with late- successional conditions. These blocks of land include:</p> <ul style="list-style-type: none">• Casoose Creek 2,700 acres• White Rock Creek 2,400 acres• Woodman Creek 1,800 acres• Dingman 3,700 acres• Willis Ridge 4,500 acres• Brushy Mountain 7,000 acres• Little Darby 1,100 acres• Lake Mountain 900 acres <p>Manage 3,152 acres as a key watershed.</p> <p>Manage 42,500 as matrix lands.</p> <ul style="list-style-type: none">• On acquired lands and previously entered forest stands, actively regenerate new stands and promote forest development in established young stands that do not currently provide mature forest structure. <p>Develop cooperative management partnerships to meet habitat improvement objectives and provide incidental forest products. These products may result from thinnings of overstocked conifer or hardwood stands, site preparation for small-scale conversion of young hardwood stands to increase the conifer component, road and other facility maintenance, or salvage following catastrophic events.</p> <p>Participate in watershed associations and private/public cooperative resource management planning to secure habitats for late successional forest species, implement regional forest ecosystem management, and consolidate management on large watersheds with multiple ownership.</p> <p>Complete 5-year project planning schedule for late-successional forest development.</p> <p>Scattered Tracts MA</p> <p>Objectives:</p> <p>Implement minimal forest improvement practices on approximately 1,200 acres to maintain the forest in a healthy state until such time as parcels are disposed of or identified as critical threatened and endangered habitat.</p> <p>Maximize contribution of public lands to regional plans for managing biological diversity.</p> <p>Management Direction:</p> <p>Manage 10,320 acres as LSR as part of a regional network of existing older forests providing a distribution, quantity, and quality of older forest habitat and to provide habitat for viable,</p>	(see above)		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
135 (cont.)	<p>well- distributed populations of species. These late successional forest areas are not subject to programmed timber harvest. Management standards and guidelines are designed to improve habitat in younger stands or to produce stand structure and components associated with late- successional conditions. These blocks of land include:</p> <ul style="list-style-type: none">• Gilham Butte - 2,550 acres• Jaqua Butte - 1,080 acres• Coleman Creek - 440 acres• Cameron Creek - 40 acres• Greenough Ridge/Montgomery Woods - 960 acres• Impassable Rocks/Eagle Peak - 1,880 acres• Pine Ridge - 3,370 acre Manage 5,785 as matrix lands. <p>Provide minor forest products to the public as they become available through facility/road maintenance and forest development.</p> <p>Prepare RNA/ACEC Activity Plans for Gilham and Jaqua Buttes to address site specific needs, access, and so forth.</p> <p>The Gilham Butte and laqua Butte RNA/ACECs are available for non-consumptive research and cone collecting. Control fire, disease, and insects to prevent spreading to other lands and to protect the existing forest conditions.</p> <p>Arcata RMP Forest Plan Amendment 1995</p> <p>Objective:</p> <p>Control fire, disease, and insects to prevent spreading to other lands and to protect the existing forest conditions.</p> <p>Management Direction:</p> <p>Watershed Management Old Growth Retention: Manage 72,764 acres as LSRs, manage 49,605 acres as Matrix, apply silvicultural prescriptions (timber stand improvement) on improvement) on previously entered forest stands to develop habitat for late-successional forest species and successional forest species.</p> <p>Designate approximately 36,000 acres as closed to vehicle use.</p> <p>Acquisition of 18,669 acres of private land in the Lacks Creek, Red Mountain, and Scattered Tracts (Gilham Butte) Management Areas would increase the total acreage of LSRs in the plan amendment area by 26 percent. Land acquisitions and cooperative partnerships would enhance the viability of the NWFP LSR network by providing greater potential ecological diversity, increased opportunity for maintenance of natural ecological processes and functions, and greater connectivity.</p> <p>Development of cooperative partnerships for management of late-successional habit on an additional 8,500 acres of private land would further enhance the viability of the LSRs.</p> <p>Late-successional/old-growth fragments in the matrix would be managed in accordance with matrix standards and guidelines.</p> <p>Known northern spotted owl activity centers within the matrix would be protected through management as “unmapped” LSRs.</p> <p>Minor forest products would be made available as a by-product of forest improvement activities in LSRs and the matrix.</p>	(see above)		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I 35 (cont.)	<p>Any herbicide use will be consistent with procedures and limitations outlined in the California Vegetation Management ROD (BLM 1988b). Herbicide use will also comply with the applicable management objectives and standards and guidelines of the NWFP. Those standards and guidelines providing the greater benefits to late-successional forest-related species will apply. Forest resources, including timber and minor forest products, will be managed in accordance with NWFP land allocations, standards and guidelines, and Aquatic Conservation Strategy. Incorporate the NWFP by reference adopting all wording.</p> <p>Redding RMP 1993</p> <p>Objectives:</p> <p>The Redding Resource Area forest management program is operating under the “Timber Management Environmental Assessment for Sustained Yield 15” referred to as SYU-15. Lands classified under the Timber Production Capability Classification (TPCC). This system was used to determine the CFL base.</p> <p>Disposal lands are managed as restricted management. The restricted management actions on the disposal lands would not permit any long-term investment or commitments but would allow actions needed to protect or maintain current or potential value of resources. No green timber sales would be permitted. Allowed would be pre-commercial thinning, seedling protection and release, and salvage timber harvest.</p> <p>Woodlands are to be managed for limited harvest of minor wood forest products, and only when it does not conflict with management of other resources.</p> <p>Management Direction:</p> <p>Salvage logging may be instituted following catastrophic events such as fire, insect epidemics or landslides.</p> <p>Intensive managed areas should be set on a rotational age of 80-100 years for return entry.</p> <p>Restricted lands would have longer rotation periods as they would be subject to wide array of biological, visual, cultural, and social controls. These areas may not be optimal for the production of timber.</p> <p>Areas termed not available will have no timber harvest.</p> <p>When forest management is not directly mentioned in the alternative description, timber harvest may only occur for the enhancement of other resources, or if not in conflict with the management of natural or cultural resources.</p> <p>Large or extensive clear cuts are not planned; however, some may be clear-cut as a result of fire, insect or disease salvage, or silvicultural requirements.</p> <p>Herbicides are not planned for use in forest management, but are not precluded if the need arose.</p>	(see above)		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I 35 (cont.)	<p>The NWFP is to be instituted FO-wide where it applies. Designations within the NWFP and management requirements for those designated areas will be applied to proper areas. The NWFP was written after the Redding RMP, and an amendment was not conducted to incorporate the language into the Redding RMP. As such, the NWFP is incorporated in full where applicable. Total acreage within the NWFP in the Redding FO is 89,643 acres.</p> <p>Scott Valley MA Management Direction: All available commercial forest lands will be managed as “restricted” until transferred from SLM administration. Within the Scott Valley MA there are 9,468 acres of Matrix designated in the NWFP. All acres with NWFP designations will be managed according to NWFP guidelines for each type of designation.</p> <p>Klamath MA Objective: Maintain or improve the long-term sustained yield of forest products from the available commercial forest lands. Management Direction: The majority of the available commercial forest land would be managed as restricted. Within the Klamath MA, there are 49 acres of LSR, 137 acres of Matrix and 329 acres of adaptive management areas, as designated in the NWFP. All acres with NWFP designations will be managed according to NWFP guidelines for each type of designation.</p> <p>Trinity River MA Objective: Within the Trinity Management Area, there are 3,624 acres of LSR, 26,172 acres of Matrix and 1,407 acres of adaptive management areas, as designated in the NWFP. All acres with NWFP designations will be managed according to NWFP guidelines for each type of designation. Management Direction: Allow forest management practices consistent with VRM Class II guidelines and special status species protection. All available commercial forest land would be managed for the enhancement of other resource values. The majority of the commercial forest land would be managed as restricted.</p> <p><u>Trinity River</u> Objective: Maintain a limited supply of forest products from available CFL, if not in conflict with the other resource values.</p> <p><u>North of Trinity River/Deadwood/Indian Creek</u> Objective: Maintain or improve the long-term sustained yield of forest products from the available CFL.</p>	(see above)		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
135 (cont.)	<p><u>Tunnel Ridge</u></p> <p>Management Direction: The majority of the available commercial forest land would be managed as restricted.</p> <p>Shasta MA</p> <p>Objectives: Within the Shasta Management Area, there are 28,077 acres of Matrix designated in the NWFP. All acres with NWFP designations will be managed according to NWFP guidelines for each type of designation. Maintain a sustained yield harvest from the available commercial forest land.</p> <p>Management Direction: The majority of the available commercial forest land would be managed as restricted.</p> <p><u>West of French Gulch</u></p> <p>Objective: Maintain or improve the long-term sustained yield of forest products from the available CFL.</p> <p>Management Direction: The majority of the available commercial forest land would be managed as restricted.</p> <p>Ishi MA</p> <p>Objective: Maintain the long-term sustained yield of forest products from the available CFL outside the Butte Creek canyon.</p> <p>Management Direction: The available commercial forest land would be managed as restricted.</p> <p>Yolla Bolly MA</p> <p>Management Direction: The majority of available commercial forest land would be managed as restricted.</p>	(see above)		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
136	<p>Management Direction:</p> <p>Forested Areas (Not LSR) Matrix lands identified under the NWFP is the area in which most timber harvest and other silvicultural activities will be conducted. However, the matrix does contain non-forested areas as well as forested areas that may be technically unsuited for timber production.</p> <p>Matrix – In the planning area 3,975,300 acres total are managed as matrix lands. Most of the timber harvest will occur on matrix lands. Standards and guidelines assure appropriate conservation of ecosystems as well as provide habitat for rare and lesser-known species. Some of the major standards and guidelines for matrix lands are:</p> <ul style="list-style-type: none"> • A renewable supply of large down logs must be in place. • 100 acres of late-successional habitat around NSO activity centers that were known as of January 1, 1994, must be protected. <p>Adaptive Management Areas – In the planning area, 1,521,800 acres total are managed as Adaptive Management Areas. These areas are designed to develop and test new management approaches to integrate and achieve ecological, economic, and other social and community objectives. The Forest Service and BLM will work with other organizations, government entities and private landowners in accomplishing those objectives. Specific Standards and Guidelines can be found in the NWFP.</p>	<p>Management Direction:</p> <p>Forested Areas (Not LSR) Priority would be to promote late seral characteristics or speed up the development of such characteristics. Managing for and promoting a web of ecological benefits that support aquatic health and wildlife and botanical species is the main priority of management actions including:</p> <ul style="list-style-type: none"> • Promote late successional characteristics development by increasing stand growth and decreasing density. • Prepare stands for the reintroduction of fire into historically fire dependent ecosystems. • Increase pest and pathogen resiliency. • Increase stand and landscape level heterogeneity, including species, size, and age class diversity. • Consider climate change, shifts in habitat suitability, and species distribution shifts. • Post-treatment canopy cover will be maintained to promote late seral characteristics and wildlife habitat. • Maintain sufficient snag and downed woody debris to provide nesting, roosting, and foraging habitat for federally listed species. • Maintain complexity of habitat types within stands and across the landscape. Avoid uniform treatment of stands. • Prioritize removal of suppressed and intermediate trees and retention of trees with higher crown ratio. 	<p>Management Direction:</p> <p>Forested Areas (Not LSR) Forest management would manage for fire resiliency as a priority in areas where public health and safety or critical infrastructure is at risk.</p> <p>Forested lands would also be managed on a sustainable basis for multiple uses including wildlife and riparian habitats, recreational needs, cultural resources, community stability, and commodity production, including commercial timber and other forest products.</p> <p>Forest management outside of WUI areas would still prioritize increased fire resiliency of stands while also prioritizing other stand conditions including:</p> <ul style="list-style-type: none"> • Development of late successional characteristics. • Increase stand productivity. • Promote development of fire-resilient forests • Where feasible, recover economic value from timber following disturbances, such as fires, windstorms, disease, or insect infestations to align with fuels and/or wildfire goals. • Primary goal(s) of all thinning treatments are to create and maintain forest health and fire resiliency, while protecting wildlife habitat and/or corridors or plant habitat, which could include increasing stand heterogeneity. • When thinning green trees, canopy cover will be maintained for recreation and fire resilience and infrastructure protection when necessary. • Early to mid-seral stage stands would be moderately thinned to accelerate the growth of the remaining trees, thus developing them into structurally diverse, more open stands dominated by large trees that are more resilient to fire, insects, disease, and wind. • Late seral stands that are not designated as LSRs would be lightly thinned to reduce fuel loads and protect the large overstory tree layer from stand replacing fire. • Create vertical and horizontal heterogeneity and develop spatial heterogeneity, including creation of small gaps (less than 0.25 acres). 	<p>Management Direction:</p> <p>Forested Areas (Not LSR) Priority would be to promote late seral characteristics that collectively benefit wildlife and riparian habitats, recreational needs, cultural resources, community stability, and commodity production, including commercial timber and other forest products.</p> <p>Forest management would be as follows:</p> <ul style="list-style-type: none"> • Promote late successional characteristics by increasing stand growth and decreasing density. • Prepare stands for the reintroduction of fire into historically fire dependent ecosystems. • Increase stand and landscape level heterogeneity, including species, size, and age class diversity. • Consider climate change, shifts in habitat suitability, and species distribution shifts. • Primary goal(s) of all thinning treatments are to create and maintain forest health and fire resiliency, while protecting wildlife habitat and/or corridors or plant habitat, which could include increasing stand heterogeneity. • Increase stand and landscape level heterogeneity, including habitat type, species, size, and age class diversity. • Maintain sufficient snag and downed woody debris to provide nesting, roosting, and foraging habitat for federally listed species. Maintain complexity of habitat types within stands and across the landscape. Avoid uniform treatment of stands. • Post-treatment canopy cover would be maintained to promote late seral characteristics and wildlife habitat. • In areas adjacent to infrastructure, thinning treatments may be conducted, where necessary, to reduce risk of catastrophic fire. • No even-aged management. • Early to mid-seral stage stands would be moderately thinned to accelerate the growth of the remaining trees, thus developing them into structurally diverse, more open stands dominated by large trees that are more resilient to fire, insects, disease, and wind. • Late seral stands that are not designated as LSRs may be thinned to increase resilience to fire and protect late seral stand characteristics. • Create vertical and horizontal heterogeneity and develop spatial heterogeneity, including gap creation. • Where feasible, recover economic value from timber following disturbances, such as fires, windstorms, disease, or insect infestations. • Provide for complex early successional ecosystems.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
137	<p>Management Direction:</p> <p>LSRs</p> <p>In the planning area, 7,430,800 acres total are managed as LSRs. In combination with the other allocations and standards and guidelines, will maintain a functional, interactive, late successional and old-growth forest ecosystem. They are designed to serve as habitat for late-successional and old-growth related species including the NSO.</p> <p>Late-successional reserves are to be managed to protect and enhance old-growth forest conditions.</p> <p>No programmed timber harvest is allowed inside the LSRs. However, thinning or other silvicultural treatments inside these reserves may occur in stands up to 80 years of age if the treatments are beneficial to the creation and maintenance of late-successional forest conditions.</p> <p>Salvage guidelines are intended to prevent negative effects on late successional habitat. Thinning or other silvicultural activities must be reviewed by the Regional Ecosystem Office and the Regional Interagency Executive Committee.</p> <p>Specific Standards and Guidelines can be found in the NWFP.</p>	<p>Management Direction:</p> <p>LSRs</p> <ul style="list-style-type: none"> No commercial timber harvests allowed in LSRs unless needed to maintain or protect wildlife habitat and/or corridors or plant habitat. Primary goal(s) of all thinning treatments must be to maintain or protect wildlife habitat and/or corridors or plant habitat, which could include increasing stand heterogeneity. Post-treatment canopy cover will be maintained to promote late seral characteristics and wildlife habitat. Maintain sufficient snag and downed woody debris to provide nesting, roosting, and foraging habitat for federally listed species. Maintain complexity of habitat types within stands and across the landscape. Avoid uniform treatment of stands. 	<p>Management Direction:</p> <p>LSRs</p> <ul style="list-style-type: none"> Management activities could include commercial timber harvest and harvest of special forest products to ensure LSRs remain resilient to fire, pests, pathogens, and climate change. Increase fire resiliency through the reduction of canopy bulk density and increase in the height to live crown. When thinning green trees, canopy cover will be maintained for recreation and fire resilience and infrastructure protection when necessary. Maintain vertical and horizontal heterogeneity and develop spatial heterogeneity, including gap creation. 	<p>Management Direction:</p> <p>LSRs</p> <ul style="list-style-type: none"> Management activities could include commercial timber harvest and harvest of special forest products to ensure LSRs remain resilient to fire, pests, pathogens, and climate change. Harvest of timber and other forest products is only allowed as a byproduct of restoration projects. Thinning treatments must maintain or protect wildlife habitat and/or corridors or plant habitat, which could include increasing stand heterogeneity. Post-treatment canopy cover will be maintained to promote late seral characteristics, fire resilience, and wildlife habitat. Maintain sufficient snag and downed woody debris to provide nesting, roosting, and foraging habitat for federally listed species. Maintain complexity of habitat types within stands and across the landscape. No even-aged management in LSRs.
138	Lands and Realty – Land Tenure			
139	<p>Goals and Objectives:</p> <p>No similar goals and objectives.</p>	<p>Goals and Objectives:</p> <ul style="list-style-type: none"> Continue acquisition of land or interest in lands (i.e., access easements or conservation easements) through donation, exchange, or purchase utilizing Land and Water Conservation Fund (LWCF), the Federal Land Transaction Facilitation Act (FLTFA), and various other funds or grants. Continue targeting acquisition of land that has a high resource value or provides public access. Dispose of lands identified as having low resource value and difficult and uneconomic to manage for public use. Plan acquisition, disposal, or exchange actions to maximize the effective management of urban interface, river corridors, wildfire, cultural resources, natural resources, and recreation. Acquire and maintain access to public lands to improve management efficiency, facilitate multiple use, and promote the public's recreational enjoyment of these lands in coordination with federal agencies, Tribes, private landowners, stakeholders, and state and local agencies. Consider opportunities to purchase contiguous properties around BLM-administered lands and manage fuels to protect resources on BLM lands, where it does not conflict with other land tenure goals and objectives. Dispose of fragmented BLM-administered lands that help alleviate fuels management issues, where it does not conflict with other land tenure goals and objectives. Maintain records of acquired lands with deed restrictions. Identify existing and potential future easements (i.e., reciprocal, exclusive, nonexclusive, etc.) for access (i.e., road or trail) or conservation purposes. Determine if existing access easements still meet the public and administrative needs. If it is determined through an internal and public review process that existing access easements and/or road use agreements are no longer needed, the BLM may pursue disposal of the unneeded interest. Acquire easements for public or administrative access or for resource protection. Acquired lands would be managed similarly to adjacent BLM-administered lands unless BLM determines specific management needs unique to those acquired lands. As funds and staffing are made available, ascertain the boundaries of the public lands, land tenure adjustments, designated areas, and easements, by survey and marking, giving priority to protect resources in coordination with federal agencies, Tribes, private landowners, stakeholders, and state and local agencies (per 43 U.S.C. 1711, 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-1, Cadastral Survey Handbook). 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
140	Management Direction: No similar management action.	Management Direction: Land Tenure Adjustments <ul style="list-style-type: none"> Retain all public lands or interests (such as easements) in land that enhance multiple use management. Acquire lands or interests in land that complement important resource values and further management objectives. Acquire administrative access to land-locked parcels. Comply with all deed restrictions associated with lands BLM acquires and manages. Dispose of lands or interests in lands in accordance with criteria found under Section 203 of FLPMA (see Appendix J). All lands identified for disposal meet one or more of the following criteria: <ol style="list-style-type: none"> Such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another Federal department or agency; or Such tract was acquired for a specific purpose and the tract is no longer required for that or any other Federal purpose; or Disposal of such tract will serve important public objectives, including but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land, and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in federal ownership. Sales of public lands shall be made at a price not less than their fair market value as determined by the Secretary under Section 203 of FLPMA and 43 CFR 2710. Transfer to another public agency if management would be more effective and better serve the public interest. Conveyances of federally owned mineral interest under Section 209 of FLPMA would be considered on a case-by-case basis, and consistent with existing regulations and policy. Lands identified for disposal would be evaluated to determine whether such actions would remove appreciable resources from federal ownership. If it is determined that adverse impacts would result if resources were removed, then any applicable mitigation requirements under federal law, regulation, or BLM policy would be applied. Comply with all DOI and BLM policies and guidance related to Standards for Boundary Evidence risk assessments and Management of Land Boundary Plans for significant transactions and projects (per 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-1, Cadastral Survey Handbook) 		
141	Management Direction: Lands Identified as Potentially Suitable for Disposal 101,000 acres (Map 2-11)	Management Direction: Lands Identified as Potentially Suitable for Disposal 6,000 acres would be identified as potentially suitable for disposal (Map 2-12).	Management Direction: Lands Identified as Potentially Suitable for Disposal 49,400 acres would be identified as potentially suitable for disposal (Map 2-13).	Management Direction: Lands Identified as Potentially Suitable for Disposal 5,900 acres would be identified as potentially suitable for disposal (see Map 2-14).
142	Management Direction: No similar management action.	Management Direction: Criteria for Land Potentially Suitable for Disposal BLM would consider disposals for BLM lands not identified for retention. BLM would pursue disposals through exchanges, State selections, cadastral survey boundary adjustments, Recreation and Public Purpose Act patents, sale of public lands under Section 203 of FLPMA, reservation and conveyance requirements and procedures for mineral interests under Section 209 of FLPMA, and leases under Section 302 of FLPMA. The following criteria would be considered: <ul style="list-style-type: none"> Disposal of the land would not adversely impact the manageability of remaining BLM-managed lands or interest in lands. If it is determined that a disposal parcel contains a valid mining claim, the Authorized Officer will determine whether to continue with the disposal. Under certain circumstances as outlined in Section 209 of FLPMA and 43 CFR 2720, the BLM may convey federally-owned mineral interests to prospective or current surface owners. Disposal of the land would not adversely impact recreational public access to remaining BLM-managed lands. Parcels or portions thereof, which have survey or inadvertent trespass related issues that cannot be resolved through enforcement actions or other means. R&PP Act leases that are pending patenting (for example, Junction City Firing Range, French Gulch Transfer Site, Siskiyou County Dropbox Disposal Site, Hornbrook Disposal Site). Reversionary interest in a R&PP Act patents would be disposed of under Section 203 of FLPMA and would require a compliance review. Lands that pose environmental liability to BLM due to existing contamination from past or present activities. Isolated BLM parcels fully surrounded by private lands. Prior to any decision to dispose of public land, the BLM would review the proposed disposal with an interdisciplinary team, complete NEPA, conduct any required resource surveys, conduct any required Standards for Boundary Evidence Certificate(s), complete an environmental site assessment for hazardous materials, and follow other requirements in the disposal process (per Department of Justice Regulations of the Attorney General Governing the Review and Approval of Title from Federal Land Acquisitions (2016), 600 DM 5, Standards for Federal Lands Boundary Evidence, and (c) H-9600-1, Cadastral Survey Handbook). BLM will consider the following on a case-by-case basis when evaluating surface lands for disposal: <ul style="list-style-type: none"> Resource values as described in the retention and acquisition sections. Amount of public investment in facilities or improvements and the potential for recovering those investments. Difficulty or cost of administration (manageability). Suitability of the land for management by another government agency or Tribe. Encumbrances, including: <ul style="list-style-type: none"> Recreation and public purposes Withdrawals ROWs Other leases or permits. Consistency of the decision with cooperative agreements and plans or policies of other agencies. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I 42 (cont.)	(see above)	• Suitability and need for change in landownership or use for such purposes as community expansion or economic development, such as industrial, residential, or agricultural (other than grazing) development.		
I 43	Management Direction: No similar management action.	Management Direction: Additional Disposal Criteria The following parcels adjacent to and within Tribal lands are available for transfer or disposal to appropriate federally-recognized Tribe(s), APNs: HUM 530-071-007-000, 530-071-008-000, 530-071-012-000, 530-071-013-000, excluding the WSR corridor.	Management Direction: Additional Disposal Criteria <ul style="list-style-type: none">• Dispose of isolated parcels without access to consolidate BLM land management into larger manageable tracts of land. Dispose of lands that are too small to manage effectively.• Dispose of BLM inholdings within USFS land or isolated parcels immediately adjacent to USFS lands. Disposal would be to USFS only to consolidate management.• BLM lands adjacent to NPS boundaries would only be disposed to the NPS to consolidate management.• R&PP Act lease applications for low-income or homeless housing or other associated facilities would be considered on a case-by-case basis on lands identified for disposal. The proposed use would need to comply with this RMP; Section 212 of FLMPA; and 43 CFR 2740 and 2912.	Management Direction: Additional Disposal Criteria Same as Alternative B.
I 44	Management Direction: Existing Withdrawals Existing withdrawals include: <ul style="list-style-type: none">• Trinity Wild and Scenic River (3,123 acres) – withdrawn from location and entry under the United States mining laws (30 U.S.C. Ch. 2 (1994)), but not from leasing under the mineral leasing laws or the Materials Act of 1947. These lands were withdrawn under Public Land Order 7839.• Forks of Butte Creek (Butte County) (2,070 acres) – this withdrawal from mineral entry protects water quality and casual use (recreational) mining (as defined in 43 CFR 3809) opportunities. These lands were withdrawn in perpetuity under Public Land Order 5329. Existing withdrawals which have expired <ul style="list-style-type: none">• Trinity River and Clear Creek Acquisition Areas (344 acres) – withdrawn from location and entry under the United States mining laws (30 U.S.C. Ch. 2 (1994)), but not from leasing under the mineral leasing laws or the Materials Act of 1947. These lands were withdrawn under Public Land Order 7308.	Management Direction: Existing Withdrawals Existing withdrawals would be continued and renewed, where appropriate. Existing FERC withdrawals (65 total throughout the planning area) are recommended to continue, unless the use would result in impacts that cannot be mitigated.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
145	Management Direction: No similar management action.	Management Direction: Withdrawals <ul style="list-style-type: none"> Withdrawal proposals would continue to be recommended to the Secretary of the Interior on a case-by-case basis. Withdrawals must be for the purpose of protecting specific existing or proposed uses when other applicable laws and regulations will not provide the opportunity for protection of the surface resources and uses. All withdrawals would be analyzed on a case-by-case basis. This process would include public participation process and coordination with agencies as applicable. If additional lands are identified outside of special designation areas or protections by other Acts, which contain special or sensitive resources, or lands containing government investments (e.g. developed campgrounds or river restoration sites) are identified for withdrawal after completion of the RMP, the BLM will pursue plan maintenance or plan amendments for new proposed withdrawals. All withdrawals would be analyzed on a case-by-case basis with complete Standards for Boundary Evidence risk assessment certificate(s) (per DM 5, Standards for Federal Lands Boundary Evidence, and (b) H-9600-I, Cadastral Survey Handbook). When lands or interests in lands are no longer needed for the purpose for which they were withdrawn, these lands would be recommended for relinquishment or revocation (in accordance with 43 CFR 2370) by the BLM or other agencies. The agency requesting revocation or relinquishment will need to file a notice of intention to relinquish such lands with the appropriate field office. If determined suitable to return to the BLM and meet criteria identified in Title 43 CFR 2372 and 2374, the BLM would manage these lands in accordance with the management described in this document for adjacent or nearby BLM lands. If these lands or interests are determined non-suitable for return to the BLM as a result of a substantial change in character by improvements or otherwise, then these lands would become surplus property and would be subject to disposal under the general public land laws. For BLM lands included in a withdrawal (i.e., Public Land Order, Executive Order, Secretarial Order, or older agency orders), but management identifies lands to be disposed of in order to resolve survey or trespass related issues that cannot be resolved otherwise, the BLM would recommend a partial revocation of the withdrawal to remove those lands from the withdrawal and open them to disposal under the general public land laws, if other special designations allow. Other agency requests for withdrawal, relinquishment, extension, or modification will be considered on a case-by-case basis. In some cases, withdrawals may transfer jurisdiction from one federal agency to another. Withdrawals designated by Congress, Executive Order, or other method not within BLM jurisdiction to modify are not evaluated in this document (i.e., national monuments, wilderness areas, military purposes, forest service withdrawals). Existing withdrawals would be continued. <ul style="list-style-type: none"> Trinity Wild and Scenic River (3,123 acres) – withdrawn from location and entry under the United States mining laws (30 U.S.C. Ch. 2 (1994)), but not from leasing under the mineral leasing laws or the Materials Act of 1947. These lands were withdrawn under Public Land Order 7839. Forks of Butte Creek (Butte County) (2,070 acres) – this withdrawal from mineral entry protects water quality and casual use (recreational) mining opportunities (as defined in 43 CFR 3809). These lands were withdrawn in perpetuity under Public Land Order 5329. New recommendations for withdrawals from mineral entry under the General Mining Law of 1872, as amended, and in accordance with Section 204 of FLPMA, would include: <ul style="list-style-type: none"> Helena Site Indian Creek Townsite Cemeteries and burial grounds. Listed Traditional Cultural Places (TCPs) All developed recreation sites and communication sites Trinity River and Clear Creek Acquisition Areas (344 acres) – as defined under Public Land Order 7308. Eel River WSR (Mainstem Eel, North Fork Eel, Middle Fork Eel, South Fork Eel, Van Duzen) New river segments managed as suitable for inclusion in the NWSRS categorized as Wild. WSAs Lands with wilderness characteristics identified in this RMP to be managed as a priority over other uses. Ma-le'I Dunes ACEC Grass Valley Creek ACEC Upper Klamath Bench ACEC Eden Valley ACEC 		
146	Management Direction: Lands Identified for Retention 281,400 acres	Management Direction: Lands Identified for Retention 376,500 acres	Management Direction: Lands Identified for Retention 333,100 acres	Management Direction: Lands Identified for Retention 376,600 acres

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
147	<p>Management Direction: Arcata RMP 1992 Pursue acquisition of 1,800 acres of commercial forest land within the management area for forest and wildlife habitat management. Acquire nonexclusive/permanent access to all public lands without access for forest enhancement, protection and rehabilitation. Contact surrounding landowners about acquisitions (re: Land Use Allocation No. 2). Prepare land reports(s) to address:</p> <ul style="list-style-type: none">• Specific acquisition methods• Site-specific requirements and problems.	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>
148	<p>Management Direction: Arcata RMP Forest Plan Amendment 1995 It is BLM policy to make public land and its resources available for use and development to meet national, regional, and local needs, consistent with national objectives. FLPMA provides authority for land ownership adjustments by sale, exchange, withdrawal and other means. The act further requires that adjustments conform to existing land use plans. Manageability of Public Lands will consider:</p> <ul style="list-style-type: none">• Safety of the public and BLM personnel with regard to road maintenance, illegal land uses, and other considerations• Relative cost-effectiveness of managing individual tracts• Fiscal ability of BLM to effectively manage lands and interests (including easements) in the long term• Alternative management scenarios, such as creative partnership with other agencies and organizations• Willingness of other organizations and agencies to implement their land use plan decisions• Site-specific inventories and analyses for T&E species, historic properties (cultural resources), and mineral values will be completed prior to disposal of public lands and interests. <p>The BLM will not dispose of lands with resources of high national interest, including WSAs, RNAs, and ACECs, to non-federal agencies. Disposal of the habitat of endangered, threatened, or sensitive species to non-federal agencies or non-profit organizations (e.g., county and state agencies or The Nature Conservancy) may be considered only if the protection and conservation that would be afforded the habitat following transfer of title equals or exceeds the level afforded by federal ownership. Such determination would be made by the state director. Disposal of the habitat of officially listed endangered or threatened species would occur only after consultation with the USFWS pursuant to Section 7 of the ESA. Land exchanges involving LSRs will be considered if they provide benefits equal to or better than current conditions. Land exchanges will be considered to improve area, distribution, and quality (e.g., connectivity, shape, contribution to biodiversity) of</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I 48 (cont.)	<p>LSRs, especially where public and private lands are intermingled. Such exchanges would require an LSR assessment for conformance with NWFP standards and guidelines.</p> <p>Disposal refers to surface rights only. Every effort will be made to avoid creating split-estate when selling or exchanging lands. A policy of simultaneous disposal of subsurface rights will be followed with exceptions. Subsurface rights will be evaluated and appraised in each exchange proposal. These rights will be retained where known significant resources are present or exchanged with consideration in the appraisal price.</p> <p>The acquisition areas identified under the alternatives in this plan amendment are high priority areas that give the BLM direction for land and resource consolidation in order to improve manageability and cost-effectiveness. These proposed acquisitions are not intended to be an exhaustive list of every acquisition target. Acquisition depends on willingness for sale or exchange. Opportunities that arise and meet the RCOs will be considered.</p> <p>In instances where the legal descriptions for Special Designations are down to section only, the intent is to automatically include under the designation lands that may be acquired in those sections.</p> <p>No public lands in the planning area are suitable or available for agricultural entry, including Indian Allotments (43 CFR 2530) because of the rugged topography, small tract size, unsuitable soils, and lack of access. No public lands are desert in character (43 CFR 2520); therefore, no public lands are available for disposal under the desert lands laws.</p> <p>BLM's general goal is to obtain access to all public lands when feasible. Where specific access routes have not been identified in the plan amendment alternatives, access that is necessary to meet the RCOs and fully implement the land use allocations will be acquired.</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
149	<p>Management Direction:</p> <p>Arcata RMP 1992</p> <p>Samoa Peninsula MA Public lands not available for disposal. Cooperative management agreements with local government or interest groups may be acceptable. 40 acres on Samoa Dunes available for temporary use on a periodic basis by the U.S. Army Corps of Engineers for jetty construction and maintenance.</p> <p>King Range Vicinity MA Retain 3,780 acres surface, 3,200 acres subsurface mineral estate (split estate). Retain all public lands between the King Range NCA and the Mattole River, except 120 acres of public land within the boundary of the Sinkyone Wilderness State Park, which will be available for acquisition by the California Department of Parks and Recreation to enhance management of the state park or a Tribal group. Retain 40 acres at the confluence of Eubanks Creek and the Mattole River for its fisheries and riparian values. Dispose 120 acres of public land within the boundary of the Sinkyone Wilderness State Park, which will be available for acquisition by the California Department of Parks and Recreation to enhance management of the State Park. Actively pursue acquisition of 1,200 acres of land along Four Mile Creek and Cooskie Creek to enhance the riparian values and visual resources. Actively pursue acquisition of 1,000 acres of forest land adjacent to Zone 6 in the King Range NCA (Jewett Ridge and Bear Creek) for long-term forest and wildlife habitat management. Actively pursue any opportunity to acquire lands in the Mattole River estuary and adjacent corridor of the Mattole River.</p>	<p>Management Direction:</p> <p>No similar management action.</p>	<p>Management Direction:</p> <p>No similar management action.</p>	<p>Management Direction:</p> <p>No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
150	<p>Management Direction: Arcata RMP Forest Plan Amendment 1995 Covelo Vicinity MA Retain 56,670 acres surface, 30,000 subsurface. Retain and manage the area known as Little Darby Acquire 0 acres. Dispose 9,830 acres. Improve management efficiency on the public lands and between agencies through administrative transfer and through disposal of scattered lands considered nonessential in regional strategies for ecosystem management. Land Acquisition and Disposal-Retain lands in public ownership with the following exceptions:</p> <ul style="list-style-type: none"> • Transfer administration of 9,400 acres in the Big Butte wilderness and adjacent Section 202 WSA parcels to the Mendocino National Forest to improve management efficiency. • Offer 11 parcels of public land for disposal totaling approximately 430 acres. <p>Contact potential selectors for disposal of public lands and resources (not exclusively):</p> <ul style="list-style-type: none"> • U.S. Forest Service • Surrounding landowners. <p>Pursue legislation modifying boundaries of the Mendocino National Forest. Manage contiguous lands under cooperative agreements until legislation is consummated. Prepare Land Report(s) to address:</p> <ul style="list-style-type: none"> • Specific disposal methods and time frames (regarding management action No. 1 above) • Site-specific inventories and requirements: <ul style="list-style-type: none"> – Cultural resources – Mineral reports – T&E species. 	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>
151	<p>Management Direction: Arcata RMP Forest Plan Amendment 1995 Lacks Creek MA Retain all lands in public ownership. Identify a Lacks Creek acquisition project boundary that includes the entire Lacks Creek watershed.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>
152	<p>Management Direction: Arcata RMP 1992 Butte Creek MA Retain 2,500 acres of surface. Acquire 900 acres. Actively pursue acquisition of 900 acres of land in the Butte Creek watershed to enhance old-growth dependent wildlife species and riparian condition. Dispose 0 acres. Public lands within the management area are not available for disposal. Contact surrounding landowners about acquisitions. Prepare land report(s) to address specific acquisition methods and site-specific inventories and requirements.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
153	<p>Management Direction: Arcata RMP Forest Plan Amendment 1995 Retain 14,055 acres surface and 82,800 subsurface mineral estate (split estate). Improve cost effectiveness of public land management by consolidation of federal ownership. Acquire 800 acres around Gilham Butte for recreational uses. Dispose of 2,050 acres Subject to clearances for special resources, dispose of scattered tracts of public lands considered nonessential in the LSR forest system:</p> <ul style="list-style-type: none">• Gilham Butte (2,550 acres)• laqua Butte (1,080 acres)• Coleman Creek (440 acres)• Cameron Creek (40 acres)• Greenough Ridge/Montgomery Woods (960 acres)• Impassable Rocks/Eagle Peak (1,880 acres)• Pine Ridge (3,370 acres)	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>
154	<p>Management Direction: Arcata RMP 1992 Retain Gilham Butte and laqua Butte, in the Arcata Resource Area, and Eagle Peak/Greenough Ridge and The Cedars, in the Clear Lake Resource Area. Public lands (6,900 acres) initially identified for disposal are to be retained in public ownership. After consideration of the State of California HCP effort and the USFWS identification of critical habitat, an RMP amendment will be completed which re-analyzes land tenure of this acreage. Contact potential selectors for disposal of public lands and resources. Contact surrounding landowners for acquisition regarding Land Use Allocation No. 2. Prepare Land Report(s) to address specific disposal acquisition methods (regarding Nos. 2 and 3 above). Acquire public access and construct a trail between Humboldt Redwoods State Park, Gilham Butte and the King Range National Conservation Area for recreational and educational uses. Acquire public access into Eagle Peak for recreational and educational uses.</p> <p>Red Mountain MA Retain 34,484 acres surface and 14,000 acres subsurface mineral estate (split estate). Retain all lands in public ownership except for approximately 1,180 acres lying in nine parcels outside of identified LSRs and Key Watersheds. These parcels of public land are identified as matrix lands in the NWFP. Acquire 5,680 acres.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
154 (cont.)	<p>Actively pursue direct acquisition of high-priority habitats for anadromous fisheries habitat restoration, Key Watershed management, WSR Corridor management, and other specific endangered species habitat. These include up to 1,240 acres of land in the Charlton Creek and Bell Springs Creek watershed and 480 acres in the Tenmile Creek watershed to protect peregrine falcon nesting sites and foraging areas; 3,960 acres of land along in the South Fork Eel River watershed between and including Low Gap Creek and Elder Creek (acreage includes 2,480 acres within the watershed ACEC boundary).</p> <p>Actively pursue acquisition of:</p> <ul style="list-style-type: none">• Approximately 3,500 acres of commercial forest land within the management area for forest management. This would include wildlife habitat enhancement and biodiversity as outlined in Objective #8 and Land Use Allocation #4.• Up to 2,600 acres of land in the Charlton Creek and Bell Springs Creek watersheds to protect peregrine falcon nesting sites and foraging areas.• 900 acres of land along the South Fork Eel River between Elkhorn Ridge and Brushy Mountain to protect riparian values. <p>Identified acquisitions will be consistent with regional conservation planning and the identification of critical habitat effort.</p> <p>Contact surrounding landowners about acquisitions. Dispose 1,180 acres.</p> <p>Pursue a general goal of obtaining public access to all public lands when feasible. Specific access on existing roads for public and/or administrative purposes will be pursued as follows:</p> <ul style="list-style-type: none">• North Jewett parcel• South Jewett parcel• Island Mountain parcel• Red Mountain (trail access)• South Fork Eel River <p>Prepare land reports and easement justification reports to address specific acquisition needs and site-specific requirements and problems.</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
155	<p>Management Direction: Redding RMP 1993 The goal of the lands program is to transform the scattered land base of the Redding Resource Area into consolidated resource management units to meet the needs of the public land users. This goal will be pursued through exchange, sale, and acquisition, followed by some R&PP leases and patents in support of the objectives of the RMP. Disposal of small-acreage, low-value parcels will be considered only in some cases to resolve inadvertent trespass or when subject parcels cannot reasonably be exchanged.</p> <p>All lands identified for transfer to another agency or qualified organization, are for long-term stewardship by the receiving entity. These lands are not available for disposal by the receiving entity. The lands will return to BLM for disposal if not administered for long-term stewardship.</p> <p>All lands acquisitions will be through exchange, purchase, or donation. Acquisitions will be from willing sellers for available, unimproved property. Available unimproved property is defined for the purposes of this plan as lands that are willingly offered to the BLM for acquisition and that contain improvements that represent less than 20 percent of the total value of the land. Acquisition of real property, other than easements, by exercising the power of eminent domain (condemnation) will not be used. The acquisition boundaries that are shown on the maps are based upon resource information not on property lines.</p> <p>If only a part of a property is identified for acquisition and the remaining part would leave the owner with an uneconomic remnant, then the BLM will acquire the entire property as required by the Uniform Relocation Assistance and Land Acquisition Policies Act of 1970 (PL 91-646, 84 Stat. 1904 Sec 301(9)). Therefore, there may be some acquisition of property outside of the areas designated on the maps. Conversely, not all property that is within the areas identified will be acquired either because the property is improved, or the property owner does not want to sell.</p> <p>In all acquisitions the BLM will strive to gain the local support and understanding for the action, especially the support of the Board of Supervisors in the affected county.</p> <p>All land identified for disposal through exchange, Recreation and Public Purposes Act transfer or sale in this RMP meets the criteria set forth in the FLPMA of 1976.</p> <p>BLM's ability to dispose of land in this RMP may be constrained by the existence of withdrawals. BLM will not dispose of withdrawn land until the withdrawal designation has been lifted. FLPMA Section 240 (K)(1) requires review of all withdrawals affecting public lands. Land that becomes unencumbered through the withdrawal review process will then come under the guidance of decisions made for the surrounding public land in this RMP.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
155 (cont.)	<p>Currently it is BLM policy not to dispose of public land encumbered with properly recorded mining claims. However, disposal actions under Sections 203 and 206 of FLPMA and the R&PP of June 14, 1926, as amended, may occur if: (1) the mining claims are determined void due to failure by the claimant to comply with Section 314 of FLPMA, 43 USC 1744 (1982) and 43 CFR 3833.2-1; (2) the mining claim is contested and found to be invalid; or (3) a change in current policy allows for the disposal of public land encumbered with mining claims.</p> <p>Any land identified for disposal through sale or exchange will be evaluated for significant cultural resources, T&E plants and animals, mineral potential, floodplain/flood hazards, hazardous waste, and prime or unique farmland, before actual transfer of the land can be considered and acted upon in compliance with the NEPA.</p> <p>Patent restrictions or conservation easements may be used in certain cases to protect special-status species, significant cultural resources or other public interests associated with parcels of land subject to disposal. In cases where protection of these values is doubtful, BLM may abandon the disposal action.</p> <p>ISHI MA</p> <p><u>Battle Creek</u> Acquire available unimproved lands within the corridor.</p> <p><u>Deer Creek</u> Acquire available unimproved lands within the canyon.</p> <p><u>Forks of Butte Creek</u> Acquire available, unimproved lands to protect scenic quality and enhance the recreational experience.</p> <p><u>Minnehaha Mine</u> Public land is available for transfer to the State of California or local government via the R&PP or exchange.</p> <p><u>Remainder of Management Area</u> Enhance the ability to acquire high value resource lands within the Redding Resource Area by disposal of scattered land interests within the Ishi Management Area.</p> <p>Transfer via exchange, the R&PP, or cooperative agreement the administrative responsibility of forty acres within the Tehama Wildlife Management Area (Section 6, T. 27 N., R. 1 W.).</p> <p>Transfer via exchange or R&PP to the City of Chico, the County of Butte, or other qualified organization title to seven parcels of public land in Big Chico Creek canyon (between Highway 32 and Musty Buck Ridge) encompassing approximately 520 acres.</p> <p>Within 2 years from approval of the Final RMP, the government entities or organizations mentioned above will be given an opportunity to submit R&PP applications for specific parcels prior to the land being offered for exchange. Offer for exchange to any party after 2 years from approval of the final RMP. If Big Chico Creek is not designated as a component of the National WSR System, an additional five parcels and 520 acres would be available for exchange or R&PP under the above conditions.</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
155 (cont.)	<p>Transfer to Shasta County via Airport Grant or exchange 15 acres of public land at Shingletown Airport in Section 24, T. 31 N., R. 1 E.</p> <p>Transfer via R&PP or exchange to a qualified state/local agency or non-profit organization administrative responsibility of six parcels of public land encompassing approximately 800 acres in the West Branch Feather River (between Magalia Reservoir and Lake Oroville). Offer for exchange to any party after 2 years from approval of the Final RMP.</p> <p>Transfer via exchange or R&PP to a qualified organization administrative responsibility of 35 acres of public land in lower Butte Creek (near Honey Run Bridge) within the NE 1/4 of Section 36, T. 22 N., R. 2 E. Offer for exchange to any party after 2 years from approval of the Final RMP.</p> <p>Transfer via exchange or R&PP to the State of California all surface and submerged public lands encompassing approximately 6,400 acres within and adjacent to the Lake Oroville State Recreation Area. All lands identified by California or BLM as excess to park needs will be offered for exchange to any party after 2 years from approval of the Final RMP.</p> <p>200 acres of public land near the Middle Fork Feather River W1/2 of Section 4, T. 20 N., R. 6 E.) are suitable for community development purposes as a reservation for federally recognized Indian Tribe(s). If congressional support is unavailable, offer for exchange to any party after 5 years from the approval of the Final RMP.</p> <p>Transfer via R&PP or exchange to Butte County or other qualified organization administration of the Forbestown Cemetery encompassing approximately 2.5 acres of public land in the NE 1/4 of Section 10, T. 19 N., R. 6 E.</p> <p>Terminate all lapsed R&PP lease and small tract classifications.</p> <p>Revoke all unused waterpower withdrawals.</p> <p>All public land interests not noted above are available for exchange.</p> <p>Conduct resource inventories (archaeological, special status species, hazardous materials, minerals, and timber) on lands available for exchange or administrative transfer.</p> <p>Klamath MA</p> <p>Revoke existing withdrawals and terminate classifications at Carson Gulch, Osburger Gulch, Lennox Rock, and Hawkinsville. Conduct resource inventories (archaeological, sensitive species, hazardous materials, minerals, and timber) on lands available for exchange, sale, or administrative transfer.</p> <p><u>Shasta and Klamath Rivers Canyon</u></p> <p>Acquire available unimproved lands within the area with priority given (in descending order) to unimproved lands within the ACEC, Klamath River corridor, and lands between Interstate 5 and the ACEC.</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
155 (cont.)	<p><u>Upper Klamath River</u> Acquire available unimproved lands within the area and/or develop cooperative management agreements with Pacific Power and Light or their successor(s). Seek administrative transfer of four parcels totaling approximately 520 acres from the Klamath National Forest.</p> <p><u>Shasta Valley Wetlands</u> Acquire available unimproved lands within the area. Priority is given to land containing existing or historic native wetlands.</p> <p><u>Remainder of Management Area</u> All public land interests not noted in land use allocation are available for exchange (and sale – after amendment to allow land sales) Transfer jurisdiction of nineteen parcels of public land encompassing approximately 3,650 acres to the Shasta and Klamath National Forests. These parcels include: agricultural inspection station (T. 39 N., R. 1 W., NW1/4 of NW1/4, Section 4), Dry Lake (T. 44 N., R. 1 W., SE1/4 of SE1/4, Section 31), Goosenest (T. 45 N., R. 4 W., Section 36), Willow Creek to include in spotted owl habitat conservation area (T. 46 N., R. 4 W., NE1/4, Section 36), Pluto Cave to enhance recreation and protect natural/cultural values (T.43 N., R. 4 W., Section 22), Iron Dyke Mine Owl Habitat Area (T. 48 N., R. 8 W., S1/2 of SE1/4, Section 22), McGavin Peak (T. 47 N., R. 2 W., Sections 4, 6, 8, 18, 20 and T. 48 N., R. 2 W., Section 32), and Butte Valley Land Use Project (T. 47 N., R. 1 W., Sections 14 and 22). Transfer via exchange, the R&PP or cooperative agreement administrative responsibility of 80 acres within the Butte Valley Wildlife Area (T. 47 N., R. 2 W., Section 28) to the CDFW. Transfer via exchange, R&PP, or sale to Siskiyou County the Hornbrook refuse transfer site (T. 47 N., R. 6 W., Section 29, N1/2 of SE1/4 of NE1/4). Transfer via R&PP or exchange to the City of Yreka, Siskiyou County, or other qualified local agency the Humbug Gulch parcel encompassing approximately 140 acres (T. 45 N., R. 7 W., Section 21). Offer for exchange to any party after two years from the approval of the Final RMP. All public land interests not noted above are available for exchange. 1,025 acres near Hawkinsville (T. 45 N., R. 7 W., Sections 2, 3, 10 and 11) are suitable for community development purposes as a reservation for federally recognized Indian Tribe(s). If congressional sponsorship is unavailable, offer for exchange to any party after five years from the approval of the Final RMP. All public land interest not noted in Land Use Allocation are available for exchange or sale.</p> <p>Sacramento River MA</p> <p><u>Bend Area</u> Acquire available unimproved lands that (in descending order of priority): contain high priority habitat along the Sacramento</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
155 (cont.)	<p>River as depicted in the 1988 Sacramento River Riparian Atlas, front the Sacramento River, provide physical access to public land, contain known/potential wetland or special status species habitat, contain important cultural resources or facilitate management within the area.</p> <p>Conduct resource inventories (archaeological, special status species, hazardous materials, and minerals) on lands available for exchange, sale, or administrative transfer.</p> <p><u>Sacramento Island</u> Acquire adjacent available unimproved lands to enhance manageability.</p> <p><u>Cottonwood Creek and Sacramento River Parcels</u> Transfer jurisdiction of parcels of public lands on Cottonwood Creek and the Sacramento River above Balls Ferry and below Red Bluff to qualified public agencies or conservation organizations to afford long-term protection of the riparian values.</p> <p><u>Hawes Corner</u> Acquire available, unimproved privately owned portion of <i>Orcuttia tenuis</i> habitat or develop cooperative management agreement to protect the habitat. Contact adjoining landowner(s) to help protect the <i>Orcuttia tenuis</i>. Habitat or to purchase the private interests. Secure an administrative easement to provide access for management and install necessary facilities to preclude vehicle or grazing usage of the habitat.</p> <p><u>Remainder of Management Area</u> All public land interests not noted above are available for exchange.</p> <p>Scott Valley MA Enhance the ability to acquire high value resource lands within the Redding Resource Area by disposal of public land interests within the Scott Valley management area. Enhance resource management efficiency and the public service mission of local, state, and Federal agencies via transfer of jurisdiction of specific public lands from BLM. Transfer jurisdiction of public land within T. 45 N., R. 8 W., Section 26 and T.42N., R.7W., Section 35 (for management of the NSO) to the Klamath National Forest. Transfer via the R&PP or exchange to the California Department of Corrections the parcel of public land east of McAdam Creek adjacent to the Deadwood Conservation Camp within T. 44 N., R. 9 W., Section 12. Transfer via R&PP or exchange to a qualified agency or group the administration of the Cedar Gulch Cemetery within T. 43 N., R. 7 W., Section 18, NE1/4. Transfer via R&PP or exchange to Siskiyou County the Callahan refuse transfer site in T. 40 N., R. 8 W., Sections 7 and 17. All public land interests not noted above are available for exchange.</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I55 (cont.)	<p>Develop agreement and/or legislative amendment to modify the boundary of the Klamath National Forest to include the public land within T. 45 N., R. 8 W., Section 26 and T.42 N., R.7 W., Section 35.</p> <p>Contact California Department of Corrections, Siskiyou County, and qualified public agencies respectively to acquire management responsibility of parcels noted in II S. 2-4 above.</p> <p>Revoke the withdrawals for the Gazelle Mountain administrative site (T. 41 N., R. 7 W., Section 8, NE1/4 of SE1/4) and the privately owned Oro Fino townsite.</p> <p>Conduct resource inventories (archaeological, special status species, hazardous materials, minerals, and timber) on lands available for exchange or administrative transfer.</p> <p>Pursue the development of a cooperative management agreement with a qualified organization for the management of Quartz Hill.</p> <p><u>Quartz Hill</u></p> <p>Allow management, for the stated objectives, by a qualified conservation organization under a cooperative management agreement. Quartz Hill would be available for disposal, via exchange, if no acceptable agreement is in effect within five years.</p> <p>Shasta MA</p> <p><u>Interlakes SRMA</u></p> <p>Maintain withdrawal from mineral entry on all public lands within a quarter mile of normal high water of the Sacramento River, the spillway elevation of Keswick Reservoir, and the 800-foot elevation within Spring Creek.</p> <p>Acquire available unimproved lands that provide legal public access to adjoining public lands, complete segments of recreational trails, enhance protection of sensitive resources, provide opportunities for public interpretation, enhance reforestation efforts (including habitat improvement for sensitive species), or enhance long-term administration of the area.</p> <p><u>West of French Gulch</u></p> <p>Acquire available unimproved lands that enhance long-term forestry management, possess critical habitat for wintering deer, contain significant cultural resources, enhance protection or restoration of special-status species habitat, provide physical access to public lands, or enhance long-term administration of the area.</p> <p><u>Lower Clear Creek and Mule Mountain</u></p> <p>Acquire available, unimproved private land that contain important anadromous salmonid habitat, lay within the 100-year floodplain, possess significant historic or socio-cultural resources, provide public access to public lands within the area, contain important scenic qualities within the creek viewshed above Clear Creek Road bridge, or facilitate long-term resource protection of the area.</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
155 (cont.)	<p><u>Clear Creek Uplands</u> Transfer via the Recreation and Public Purposes Act (R&PP), four parcels of land encompassing approximately 280 acres to any qualified organization or agency for the purposes expressed by the Horsetown /Clear Creek Preserve Coalition. If an acceptable R&PP application is not perfected within two years of the Record of Decision for this RMP the parcels will be offered for exchange via the R&PP, four parcels of land.</p> <p><u>Remainder of Management Area</u> Transfer via the R&PP or exchange to Shasta State Historic Park two parcels of public land encompassing approximately 160 acres (Section 25, T. 32 N., R. 6 W. and Section 30, T. 32 N., R. 5W.) to maintain the scenic integrity of the historic town setting. Transfer via R&PP, sale, or exchange to a qualified organization administrative responsibility of the Central Valley Cemetery located on one parcel of public land at SE 1/4 of NW 1/4 of Section 30, T. 33 N., R. 5 W. Transfer to County of Shasta via R&PP, exchange, or sale, the French Gulch and Shasta refuse transfer sites encompassing approximately 6 acres of public land. Transfer via R&PP, sale, or exchange, to the Independent Order of Odd Fellows, one parcel of public land in French Gulch to resolve an inadvertent trespass by the community cemetery. Transfer via R&PP, or exchange, to the State of California, County of Shasta, City of Redding, community service districts or any other qualified organization administrative responsibility of any portion of 6,000 acres of public land to meet local communities' service needs. Within two years from approval of the Final RMP the organizations mentioned above will be given an opportunity to submit R&PP applications for specific parcels prior to the land being offered for exchange. Offer for exchange to any party after two years from approval of the final RMP. Conduct resource inventories (archaeological, special status species, hazardous materials, minerals, and timber) on lands available for exchange or administrative transfer.</p> <p>Trinity MA</p> <p><u>Trinity River</u> Acquire available unimproved lands within the corridor. Seek administrative transfer of three parcels (N1/2 Section 4, N1/2 Section 5, T. 32 N., R. 10 W., W 1/2 Section 29, All Section 30, All except W 1/2 of SW 1/4 Section 31, and W 1/2 Section 32, T. 33 N., R. 10 W.) totaling approximately</p> <p><u>North of Trinity River/Deadwood/Indian Creek</u> Transfer via R&PP, sale, or exchange to a qualified organization one parcel of public land near Lewiston to increase the size of the community cemetery. Acquire title to State of California lands within Section 16, T. 34 N., R. 11 W. between Fox and Brock Gulches</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I 55 (cont.)	<p>Consolidate and increase public land ownership within the area by acquiring available unimproved lands that adjoin the Trinity River Corridor, facilitate reforestation and other sustained yield forestry practices, protect anadromous fisheries, provide public access to public lands, protect sensitive species habitat, conserve regionally important cultural resources, provide access to identified Native American heritage resources, or enhance overall efficiency of public land administration.</p> <p><u>Grass Valley Creek Watershed</u> Acquire available unimproved lands within the watershed via appropriated funding, exchange, or donation contingent that funds also be included to manage these lands consistent with I.D.1. and II.D. 1-8.</p> <p><u>Remainder of Management Area</u> Enhance the ability to acquire high value resource lands within the Redding Resource Area by disposal of public land interests within the Trinity Management Area. Enhance resource management efficiency and the public service mission of local, state, and federal agencies via transfer of jurisdiction of specific public lands from BLM. Afford opportunities to meet community development needs for federally recognized Indian Tribes. Transfer to Trinity County via the Recreation and Public Purposes Act (R&PP), Airport Grant, or exchange three parcels of public land encompassing approximately 80 acres near Weaverville Airport. Transfer two parcels of public land encompassing approximately 60 acres near McKinney Gulch and Mill Creek to the Shasta-Trinity National Forest. 50 acres near Hayfork (W 1/2, Section 13, T. 31 N., R. 12 W.) are suitable for community development purposes as a reservation for federally recognized Indian Tribe(s) or for community purposes through the R&PP Act. If congressional sponsorship is unavailable or if an R&PP application is not perfected, offer for exchange to any party after 5 years from the approval of the Final AMP. All public land interest not noted in Land Use Allocation are available for exchange or sale. Develop agreement and/or legislative amendment to modify the boundary of the Trinity National Forest to include the public land noted in II E (2) above and to exclude the public land noted above in II A(11). Contact Trinity County regarding transfer of public land near Weaverville Airport.</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
I55 (cont.)	<p>Develop an integrated resource activity plan(s) within the area north of the Trinity River, and within the lower Indian Creek and Deadwood Creek areas. The plan will: identify priority land acquisitions, identify priorities for resolving inadvertent survey-related trespass cases, designate roads and trails for public-administrative and Native American Indian access locate sensitive resource locations, detail the desired plant communities for upland/riparian ecological sites assess reforestation needs, determine annual allowable forest products yield, and prescribe actions needed to enhance deer, special status species, and fishery habitats. Cooperate with the U.S. Forest Service in studies to determine the suitability of Canyon Creek to be included as a “recreational” component in the National Wild and Scenic River System.</p> <p>Conduct resource inventories (archaeological, special status species, hazardous materials, minerals, and timber) on lands available for sale or exchange.</p> <p>Terminate BLM classification at Steel Bridge campground and Limekiln Gulch.</p> <p>Yolla Bolly MA</p> <p>Transfer jurisdiction of twelve parcels of public land encompassing approximately 8,000 acres and an additional 1,800 of federal mineral estate to the Trinity National Forest. These parcels include Bluford Trail (E1/2, Section 20, T. 30 N., R. 9 W.) Beegum Gorge, Beegum peak Eyrie (S 1/2 Section 19, Sections 20-22, W 1/2 Section 26, Sections 27-34, T. 29 N., R. 9 W. and Section 4, T. 28 N., R. 9 W.), Tedoc Mountain botanical area (NW 1/4, Section 28, T. 28 N., R. 9 W.), Wells Creek Special Interest Area (SW 1/4 Section 33, T. 28 N., R. 9 W.), Brushy Ridge (N 1/2, Section 24, T 27 N., R. 9 W.), Pettyjohn Road access (S 1/4, Section 20, S 1/2 of NW 1/4 and S 1/2 Section 27 and SW 1/4 Section 26, T. 27 N., R. 8 W.), Maple Creek (Sections 34 & 35, T. 27 N., R. 8 W.) and South Fork Cottonwood Creek (N 1/2 Section 10 and Section 18, T. 26 N., R. 8 W.)</p> <p>All public land interests not noted above are available for exchange.</p> <p>Develop agreement and/or legislative amendment to modify the boundary of the Trinity National Forest to include the public land noted above.</p> <p>Revoke withdrawals for the Valla Bally National Cooperative Land and Wildlife Management Area and the Arbuckle Mountain Project.</p> <p>Conduct resource inventories (archaeological, special status species, hazardous materials, minerals, and timber) on lands available for exchange.</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
156	Management Direction: No similar management action.	Management Direction: Criteria for Lands Proposed for Retention The following criteria were considered when designating land for retention: <ul style="list-style-type: none">• WSR designated management corridor• Lands within or adjacent to RMAs, lands that contain developed recreation facilities, and land that enhances recreation access or opportunities.• Developed administrative sites.• Heritage Areas (TCPs) unless transferred to another federal agency or Tribe.• Contains high sensitivity cultural (NRHP listed or eligible sites and landscapes)• Contains high sensitivity paleontological resources (unique or unusual fossil-bearing zones)• Habitat for proposed, candidate, and federally listed species, BLM sensitives species or imperiled plant communities.• LSRs• Lands identified in the Dingell Act• Lands meeting the criteria in the Dingell Act would provide access points from public roads that would aid resource management and/recreational public access.• Lands within or adjacent to ACECs, wilderness, WSAs, NSHTs, Monuments, NCAs, and similar designations.• Lands within or adjacent to lands managed for wilderness character as a priority.• Lands adjacent to other federal or state lands that are managed for conservation or recreation purposes.• Identified important wildlife habitat (e.g., critical deer winter range)• Lands with riparian areas and/or perennial surface water• Lands to improve water quality and quantity.• Essential Corridors of Connectivity• Acquired lands or interest (such as easements) Exception for retention areas: <ul style="list-style-type: none">• Retain the areas above for long-term management unless resource values and public objectives, that were the basis for designation as a retention area and related management opportunities, would be maintained or enhanced if the lands left public ownership or management of remaining BLM lands would be enhanced if the lands left public ownership.		
157	Management Direction: No similar management action.	Management Direction: Additional Retention Criteria <ul style="list-style-type: none">• Retain small or isolated parcels that provide natural resource refugia and contribute to climate change resiliency, are in Essential Connectivity Corridors of High Biological Value, or are important wildlife habitat.• Retain lands with a high sensitivity for potential cultural resources.• Retain BLM inholdings within USFS land or isolated parcels immediately adjacent to USFS lands. Coordinate with USFS in the management of those lands.	Management Direction: Additional Retention Criteria No similar management action.	Management Direction: Additional Retention Criteria <ul style="list-style-type: none">• Retain small or isolated parcels that provide natural resource refugia and contribute to climate change resiliency, are in Essential Connectivity Corridors of High Biological Value, or are important wildlife habitat.• Retain lands with a high sensitivity for potential cultural resources.• Retain, or transfer to USFS, BLM inholdings within USFS land or isolated parcels immediately adjacent to USFS lands, where appropriate. Coordinate with USFS in the management of those lands.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
158	Management Direction: No similar management action.	Management Direction: Criteria for Land Acquisition The following are general criteria for the BLM to acquire lands: <ul style="list-style-type: none"> • Habitat for proposed, candidate, and federally listed species, BLM sensitives species, imperiled plant communities, or provides for habitat connectivity. • Contains key riparian corridors that improve riparian connectivity and maintains riparian habitat integrity. • Contains WSR corridors that support anadromous fish habitat, recreational resources, and cultural resources. This would apply to both designated and suitable segments. • Contains sensitive habitats such as vernal pools, riparian woodland, wetlands, or land that has high potential for restoration of sensitive habitats. • To address sea level rise, dune migration, or manage tidal wetland areas. • Lands that enhance recreation access or opportunities. • Improves access to lands which meet recreation priorities identified in the Dingell Act. • Improves public and administrative access to existing federal land identified for retention. • Lands within or nearby special designation areas that exhibit the pertinent qualities of the special designation areas. • Lands needed to improve efficiency for long-term resource management of other BLM-administered areas. • Lands that meet the intent of the LWCF or FLTFA. • Lands that improve water quantity or water quality. • Provides for scientific research opportunities. • Contains high sensitivity cultural (NRHP listed or eligible sites and landscapes, Traditional Cultural Places). • Contains high sensitivity paleontological resources (unique or unusual fossil-bearing zones). 		
159	Management Direction: No similar management action.	Management Direction: Additional Acquisition Criteria <ul style="list-style-type: none"> • Prioritize acquisition of lands within Essential Connectivity Corridors of High Biological Value. • Prioritize acquisition of lands that provide refugia, unique habitat value, or resiliency. • Acquire lands along suitable WSR and riparian corridors, to support fish values. • Use land tenure adjustment to increase the functional size of areas managed for corridors for genetic flow and climate induced species shifts. 	Management Direction: Additional Acquisition Criteria <ul style="list-style-type: none"> • Prioritize acquisition of lands that provide open space in or around communities. • Acquire access easements or lands from willing sellers that would provide access to public land. • Acquisitions will proceed with the support of the Board of Supervisors. 	Management Direction: Additional Acquisition Criteria <ul style="list-style-type: none"> • Prioritize acquisition of lands within Essential Connectivity Corridors of High Biological Value. • Prioritize acquisition of lands that provide refugia, unique habitat value, or resiliency. • Prioritize acquisition of lands that provide open space in or around communities. • Acquire lands along suitable WSR and riparian corridors to support fish values. • Acquire access easements or lands from willing sellers that would provide access to public land. • Use land tenure adjustment to increase the functional size of areas managed for corridors for genetic flow and climate induced species shifts.
160	Lands and Realty – Use Authorizations			
161	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none"> • Designate communication sites and identify issues such as access, use compatibility, and the need for new and updated communication site plans. • Identify where and under what circumstances authorizations for use, occupancy, and development (such as leases and land use permits under the 2920 regulations) may be granted. • Ensure new Recreation & Public Purposes Act (R&PP) leases meet community needs and/or development for public and recreational purposes. • Resolve realty unauthorized uses or occupancy. • Continue to recognize valid existing rights. • Issue land use authorizations on a case-by-case basis and subject to BMPs, pertinent guide stipulations, and/or project specific stipulations. • Issue Standards for Boundary Evidence (SBE) Certificate(s) on a case-by-case basis and when practicable, Management of Land Boundary Plans for designated areas, e.g., communication sites within Field Offices (per 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-I, Cadastral Survey Handbook). 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
162	<p>Management Direction: Redding RMP 1993 Land use authorizations (ROW, leases, permits) will continue to be issued on a case-by-case basis and in accordance with decisions established in this RMP. Applications for land use authorizations which reduce the marketability of an exchange parcel will not be authorized.</p>	<p>Management Direction:</p> <ul style="list-style-type: none"> • All management actions would be subject to valid existing rights. • The BLM will continue to monitor existing and future leases and/or patents to ensure the lands are used for the purposes for which they were leased and/or patented. Plans of development and management will be reviewed by the BLM and lease and/or patent holders will need to follow existing policy and regulations. The BLM Redding and Arcata Field Offices will recommend and prioritize sale/patents to existing lease holders for existing transfer site and shooting range leases. • Unless otherwise stated by the BLM Authorized Officer, roads would be designed to Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (BLM and USFS, 2007), commonly referred to as the Gold Book, and road construction should follow specifications in the Updated Handbook for Forest, Ranch, and Rural Roads (Pacific Watershed Associates, 2015) as necessary. • If it is determined that crossing private lands is required to construct and/or operate proposed authorized activity, the applicant/holder would be required to provide proof of secure legal access across those private lands. • Removal and restoration of temporary roads must be completed to meet BLM specifications. • At the discretion of the BLM Authorized Officer, applicant would be required to submit a plan of development to include boundaries, construction, operation, maintenance, and termination (removal and restoration) of the proposed facilities and would have to be bonded for such activities if deemed necessary. • R&PP Act lease applications for low-income or homeless housing or other associated facilities would be considered on a case-by-case basis on lands identified for disposal. The proposed use would need to comply with this RMP; Section 212 of FLMPA; and 43 CFR 2740 and 2912. • When authorizing linear features, BLM would consider the special designations or management restrictions of adjacent lands during the authorization process. For example, if linear features cross on to USFS lands, special designations and management restrictions associated with Inventoried Roadless Areas, Research Natural Areas, National Recreation Areas, Wilderness, and WSR corridors would be considered during the authorization process. 		
163	<p>Management Direction: Manage 11,300 acres as ROW avoidance areas (Map 2-15 in Appendix A). <i>Note: ROW avoidance areas are areas where ROWs are avoided wherever practicable.</i></p> <ul style="list-style-type: none"> • Designated WSRs 	<p>Management Direction: The following areas would be managed as ROW avoidance areas (135,900 acres; Map 2-16 in Appendix A):</p> <ul style="list-style-type: none"> • Identified Traditional Cultural Places • Ultramafic/serpentine soils • Decomposed granite • Biological soil crusts • Late successional forests • Federally-listed critical habitats • Essential Connectivity Corridors of High Biological Value (unless specifically called out as exclusion for specific special designation areas) • WSR “Scenic” and “Recreational” designations • Coastal Strip • Grass Valley Creek ACEC • Eden Valley ACEC • Sacramento Island ACEC • Butte Creek ACEC • Deer Creek ACEC • Iaqua Butte ACEC • Lacks Creek ACEC • Swasey Drive Clear Creek Greenway ACEC • Shasta and Klamath River Canyon ACEC • South Spit¹ ACEC • Upper Mattole Valley ACEC • Willis Ridge ACEC • North Fork Eel ACEC • Chappie-Shasta OHV Area SRMA 	<p>Management Direction: The following areas would be managed as ROW avoidance areas (166,400 acres; Map 2-17 in Appendix A):</p> <ul style="list-style-type: none"> • Identified Traditional Cultural Places • Ultramafic/serpentine soils • Decomposed granite • Biological soil crusts • Late successional forests • Federally-listed critical habitats • WSR “Scenic” and “Recreational” designations • Coastal Strip • Grass Valley Creek ACEC • Eden Creek ACEC • Ma-le’l Dunes ACEC, as well as any newly acquired lands that are contiguous to the publicly owned dune properties in the Ma-le’l Dunes ACEC • Gilham Butte ACEC • Swasey Drive ACEC • Chappie-Shasta OHV Area SRMA • Redding Trails SRMA • Iron Mountain Target Shooting Area SRMA • Samoa Dunes SRMA 	<p>Management Direction: The following areas would be managed as ROW avoidance areas (162,200 acres; Map 2-18 in Appendix A):</p> <ul style="list-style-type: none"> • Identified Traditional Cultural Places • Ultramafic/serpentine soils • Decomposed granite • Late successional forests • Federally-listed critical habitats • Essential Connectivity Corridors of High Biological Value (unless specifically called out as exclusion for specific special designation areas) • WSR “Scenic” and “Recreational” designations • Coastal Strip • Grass Valley Creek ACEC • Eden Valley ACEC • Sacramento Island ACEC • Butte Creek ACEC • Deer Creek ACEC • Iaqua Butte ACEC • Lacks Creek ACEC • Gilham Butte ACEC • Swasey Drive ACEC • Shasta and Klamath River Canyon ACEC • South Spit¹ ACEC • Upper Mattole Valley ACEC • Upper and Lower Clear Creek ACEC • Willis Ridge ACEC • North Fork Eel ACEC • Chappie-Shasta OHV Area SRMA • Redding Trails SRMA • Iron Mountain Target Shooting Area SRMA • Samoa Dunes SRMA

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
164	<p>Management Direction: The following areas would be managed as ROW exclusion areas (58,500 acres, Map 2-15 in Appendix A). <i>Note: ROW exclusion areas are areas where new ROWs would not be issued:</i></p> <ul style="list-style-type: none"> Designated wilderness areas WSAs WSR “Wild” designations <p>Redding RMP 1993 Two exclusion areas consist of BLM wilderness areas, i.e., Ishi and Tunnel Ridge (Map 2-15 in Appendix A). The Yolla Bolly Contiguous wilderness study area and all eligible study corridors for the National Wild and Scenic Rivers System with a preliminary classification as “scenic” or “wild” are considered exclusion areas pending the conclusive action of the U.S. Congress</p>	<p>Management Direction: The following areas would be managed as ROW exclusion areas (135,100 acres; Map 2-16 in Appendix A, except for existing ROWs or existing designated corridors):</p> <ul style="list-style-type: none"> Designated wilderness areas Section 603 WSAs Section 202 WSAs WSR “Wild” designations Lands managed for wilderness characteristics as priority Stringtown Mountain Forks of Butte Creek ACEC Sacramento River Bend ACEC Upper Burney Dry Lake and Baker Cypress ACEC Beegum Creek Gorge ACEC Gillham Butte ACEC Hawes Corner ACEC Ma-le’l Dunes ACEC, as well as any newly acquired land that are contiguous to the publicly owned dune properties in the Ma-le’l area Sheep Rock ACEC Black Mountain ACEC Upper Klamath Bench ACEC Corning Vernal Pools ACEC North Table Mountain ACEC 	<p>Management Direction: The following areas would be managed as ROW exclusion areas (94,100 acres; Map 2-17 in Appendix A, except for existing ROWs or existing designated corridors):</p> <ul style="list-style-type: none"> Designated wilderness areas Section 603 WSAs WSR “Wild” designations Lands managed for wilderness characteristics as priority Stringtown Mountain Forks of Butte Creek ACEC Sacramento River Bend ACEC 	<p>Management Direction: The following areas would be managed as ROW exclusion areas (108,100 acres; Map 2-18 in Appendix A, except for existing ROWs or existing designated corridors):</p> <ul style="list-style-type: none"> Designated wilderness areas Section 603 WSAs Section 202 WSAs WSR “Wild” designations Lands managed for wilderness characteristics as priority Stringtown Mountain Forks of Butte Creek ACEC Sacramento River Bend ACEC Upper Burney Dry Lake and Baker Cypress ACEC Beegum Creek Gorge ACEC Hawes Corner ACEC Ma-le’l Dunes ACEC Sheep Rock ACEC Black Mountain ACEC Upper Klamath Bench ACEC Corning Vernal Pools ACEC North Table Mountain ACEC
165	<p>Management Direction: No similar management action.</p>	<p>Management Direction: Film Permits If proposing to film on BLM-managed lands, the applicant should contact the field office for a pre-application meeting, regardless of any anticipated impact level. If a film proposal is determined to potentially cause high impact, issuing a film permit would be considered on a case-by-case basis. Below are criteria that would generally qualify a filming proposal as low impact and would be considered a casual use activity and may not require a permit:</p> <ul style="list-style-type: none"> Project would not adversely impact sensitive habitat or species. Project would not adversely impact cultural resources. Project does not involve extensive restriction of public access or safety hazards to members of the public. Projects must occur in areas with legal public access. No incendiary devices, explosives, or special effects would be allowed. A campfire in an appropriate setting is permissible if in accordance with fire restrictions or temporary public land closures (to mitigate the risk of wildfires) in place at the time of filming. No set building. Filming is not allowed in designated Wilderness or WSA. Project does not involve use of exotic animal species. No use of heavy equipment All vehicles would remain on existing roads and trails. No removal of vegetation or major disturbance of soil. UAV use must comply with all FAA, state, and local laws and guidelines. All landing and take-offs are within established trails, roads, or disturbed area. No taking off or landing of drones in designated wilderness. 		
166	<p>Management Direction: No similar management action</p>	<p>Management Direction: Apiary Activities Apiary permits would be issued on a case-by-case basis. Permitted apiary activities may not be located on dunes, in Essential Connectivity Corridors of High Biological Value, within 2.5 miles of sensitive species habitat or large population of nonnative and invasive species, or within 2.5 miles of critically imperiled vegetation.</p>	<p>Management Direction: Apiary Activities Apiary permits would be issued on a case-by-case basis. Permitted apiary activities would not be located within OHV open areas, within 300 feet (100 yards) of designated trails and trailheads, within campgrounds, and recreation facilities.</p>	<p>Management Direction: Same as Alternative C, with the following addition:</p> <ul style="list-style-type: none"> Existing permits would be terminated if applicants no longer use sites.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
167	<p>Management Direction: Redding RMP 1993 Communication site applications will continue to be considered on land suitable for disposal until such time as an exchange agreement is signed. On public lands retained or acquired, communication site plans will be developed.</p>	<p>Management Direction: Communication Sites and Communication Leases and/or ROWs. The following existing communication sites would be designated:</p> <ul style="list-style-type: none"> • Cahto Peak • South Fork Mountain • Inks Ridge • Hoadley Peaks • Rattlesnake Point • Rocky Gulch • Crowfoot Peak • Helena • Sweetbriar <p>Management of existing and new communication sites would be as follows:</p> <ul style="list-style-type: none"> • Traditional Cultural Places (TCPs) and areas of cultural significance are avoidance areas for new communication sites. For any communication use application in communication sites located in areas with potential for TCPs and cultural use areas, BLM would need to determine that avoidance is not possible and the decision on whether to approve the project would need to be informed by government-to-government consultation with appropriate Tribal governments. • Applications in communication sites would be considered on a case-by-case basis. • Applicants would need to comply with any communication site plans, as approved and/or amended for designated communication sites. • Co-locate new communication facilities within existing communication leases and ROWs and within existing communication sites unless the BLM Authorized Officer approves the applicant's evidence that existing communication sites would not be able to provide adequate service to customers or it is not technically and financially feasible. • Emergency, back-up power must be provided to all occupants by authorization holders. • ROW avoidance and exclusion areas would be applied to new communication use applications, along with additional restrictions and closures listed below. • Communication Site Management of Land Boundary Plans would include the site and related ROWs, e.g., avoidance and exclusion areas along with restrictions and closures areas (per 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-I, Cadastral Survey Handbook). 		
		<p>Management Direction: New communication site leases or communication site ROWs would not be permitted in the following areas unless co-located within existing communication sites or communication site ROWs:</p> <ul style="list-style-type: none"> • VRM Class I and II • LSRs • Known Northern Spotted Owl site buffer zones (0.5 miles) unless applicant can show that activities would not have adverse impacts on these resources. • Black Mountain • Stringtown Mountain 	<p>Management Direction: With the exception of the exclusion noted below, applications for communication uses would be determined on a case-by-case basis: Communication uses would be prohibited on Black Mountain and Stringtown Mountain</p>	<p>Management Direction: Same as Alternative B.</p>
168	<p>Management Direction: ROW Corridors Designated corridors include all existing or occupied corridors delineated in the Western Regional Corridor Study of 1986 with the following exceptions: Avoidance Areas, Exclusion Areas, Recreation and Public Purposes Act, and Public Land Withdrawals and Classifications Arcata RMP Forest Plan Amendment 1995 ROW determinations cannot be made at this planning level with any degree of credibility. Federal tracts do not control ROWs such as highways or utility corridors. Proposals will be addressed on a site-specific basis.</p>	<p>Management Direction: ROW Corridors</p> <ul style="list-style-type: none"> • Manage West-wide Energy Corridor segments utilities and facilities in accordance with the West-wide Energy Programmatic EIS and Settlement Agreement. • Designated corridors from the West-wide Energy Corridor (Section 368) would also be encouraged for new rights-of-way that meet the allowed designated use for that corridor segment (i.e., transmission lines and pipelines). • To reduce the proliferation of ROWs across the landscape, applicants would be encouraged to first consider co-location of new ROWs within existing utility or transportation ROW corridors with compatible use. BLM would evaluate whether co-location is possible. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
169	Management Direction: No similar management action.	Management Direction: Water Rights-of-Way <ul style="list-style-type: none">New water ROW authorizations would be considered on a case-by-case basis. Applicants would need to comply with guidance from other applicable regulatory agencies.No new consumptive water ROWs shall be issued in watersheds designated as impaired under the Clean Water Act section 303(d).No new wells shall be authorized in areas designated as High or Medium priority under the Sustainable Groundwater Management Act until such time as Groundwater Sustainability Plans have been developed and proposed wells are able to conform with these plans.No new wells shall be authorized where groundwater has been determined to be contaminated by the Regional Water Quality Control boards.	Management Direction: Water Rights-of-Way New water ROW authorizations would be considered on a case-by-case basis. Applicants would need to comply with guidance from other applicable regulatory agencies.	Management Direction: Water Rights-of-Way New water ROW authorizations would be considered on a case-by-case basis. BLM would consider the impact to quality and quantity of water down-stream affected resources. Applicants would need to comply with guidance from other applicable regulatory agencies.
170	Management Direction: No similar management action.	Management Direction: Any BLM-permitted water well would require analysis to assess and minimize impacts of groundwater pumping on surface water flows, with the exception of water wells used for restoration or habitat enhancement.		
171	Renewable Energy			
172	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none">Proactively support the energy goals guided by the 2005 Energy Policy Act, Energy Act of 2020, and subsequent laws, regulatory, and policy direction, including continued collaboration with the State of California’s clean energy renewable energy portfolio standards.Process proposals for renewable energy-generating facilities as a ROW under Title V of FLPMA and 43 CFR 2800; and geothermal proposals would be processed as a lease under the Geothermal Steam Act and 43 CFR 3200.Identify lands near existing or planned power corridors where potential for solar or wind energy is suitable and has low resource concerns and prioritize for renewable energy development.Identify federal lands in proximity/adjacent to private lands where potential for solar or wind energy may be suitable.In renewable project planning, incorporate stipulations and BMPs that would mitigate the impacts of development. The BLM would further develop BMPs on a project-specific basis, as necessary; and the BLM would incorporate management guidance and BMPs from applicable programmatic studies (Wind Energy Development Program and Approved RMP Amendment (2005) and the Geothermal Leasing in the Western United States Approved RMP Amendment (2008)) to utility-scale renewable energy projects.Renewable energy project planning will incorporate Standards for Boundary Evidence risk assessments in accordance with DOI and BLM standards for significant transactions and projects (per 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-I, Cadastral Survey Handbook).		
173	Management Direction: Geothermal Leasing in the Western United States RMP Amendment 2008 Geothermal The following designated wild and scenic rivers are closed to geothermal leasing: <ul style="list-style-type: none">KlamathEelVan DuzenTrinityNorth Fork EelMiddle Fork Eel	Management Direction: Geothermal <ul style="list-style-type: none">Geothermal off-lease proposals (which include geothermal exploration outside the bounds of an active lease) would be considered throughout the planning area on a case-by-case basis if compatible with other resource management requirements.Any geothermal leases would be managed according to geothermal leasing requirements described in the Minerals section and ROW requirements described in the Lands and Realty section.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
174	Management Direction: Redding RMP 1993 Hydropower Potential waterpower/storage reservoir sites under a land withdrawal/classification would continue to be managed for waterpower values. Prior and existing rights would be honored. New applications for waterpower or storage would be denied on streams that become components of the National WSR System. Any existing withdrawals or permits for water power or storage would be recommended by BLM for extension/renewal.	Management Direction: Non-FERC regulated, small-scale (<10MW) hydropower applications would be considered on a case-by-case basis if they would not impede fish passage, wildlife access to water, basic stream functionality that cannot be mitigated, or impact BLM's ability to manage their surface lands through inundation or other means. For more information about withdrawals, refer to the <i>Lands and Realty – Land Tenure</i> section.	Management Direction: Non-FERC regulated, small-scale (<10MW) hydropower application would be issued on a case-by-case basis in accordance with laws and regulations in place at the time of application.	Management Direction: Same as Alternative B.
175	Management Direction: No similar management action.	Management Direction: Biomass <ul style="list-style-type: none"> Biomass permits and ROWs would be considered on a case-by-case basis. Sales of biomass would be managed according to management described in the Forestry section and any associated ROWs would be managed as described in the Lands and Realty section. Consider biomass permits to allow for the development of biomass products such as biochar where technology exists to develop those products. Prioritize biomass treatments in areas close to biomass plants as practicable to support economic development. Where practicable, plan biomass treatments in conjunction with forest development projects. 		
176	Management Direction: Solar The Solar PEIS and ROD excluded all RFO and AFO lands from variance areas and solar energy zones (SEZs) for utility-scale facilities due to low resource potential (i.e., projects with capacities of 20 megawatts or greater that generate electricity that is delivered into the transmission grid).	Management Direction: Solar Same as Alternative A, with the following addition: <ul style="list-style-type: none"> Solar developments of less than 20 megawatts may be considered in the planning area if it is consistent with the land use management prescription and other management decisions for the areas where the development is sited. Solar facilities would not be permitted in areas managed as VRM class I, areas managed for cultural setting, or areas that are managed as ROW exclusion. 		
177	Management Direction: Wind Wind applications would be considered on a case-by-case basis and in accordance with the Wind PEIS and ROD dated 2005.	Management Direction: Wind <ul style="list-style-type: none"> There would be no designated leasing areas for wind on BLM-administered lands in the planning area. Wind applications would be considered on a case-by-case basis and in accordance with <i>the Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States</i> and Record of Decision (Wind PEIS and ROD dated 2005.) Wind authorizations would adhere to all the exclusions listed below and are subject to subsequent policy changes. Wind development would not be considered in the following areas: <ul style="list-style-type: none"> LSRs, lands with wilderness characteristics managed as a priority over other multiple uses, ACEC with cultural values, riparian management areas, wetlands and Waters of the United States, habitat supporting waterfowl (vernal pools, emergent wet marsh, riparian areas, fens), areas with serpentine soils, WSAs, designated wilderness, WSRs, National Scenic and Historic Trails, ROW exclusion areas, VRM class I and class II areas, lands acquired with federal funds for conservation purposes, and any other exclusion and sensitivity areas identified in the West-Wide Wind Mapping Project and analyzed in the Wind PEIS and ROD dated 2005. 		
178	Management Direction: No similar management action.	Management Direction: Wave and Offshore Energy Development The Bureau of Ocean Energy and Management (BOEM) has jurisdiction for wave and offshore energy development and would be the responsible agency for issuance of renewable energy leases, easements, and rights-of-way pertaining to wave and offshore energy development projects. The BLM would collaborate and coordinate with the BOEM to ensure these actions are compatible with existing uses on BLM lands, management, and protections and special designations of coastal lands. Additionally, BLM would coordinate with BOEM to address actions with the potential to adversely impact natural and cultural resources, including actions with potential to impair or impede coastal access.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
179	Minerals—Leasable Minerals (Including Fluid and Nonenergy Minerals)			
180	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none"> Support a successful and innovative mineral development program that allows for job opportunities while reclaiming mined lands to ecologically successful and environmentally stable conditions through the use of modern reclamation techniques. Encourage exploration of public lands to define potential mineral resources of national strategic interest, that are economically crucial for state and local communities, and to support green technology development and carbon reduction technology. Make the public lands and federal mineral estate available for orderly and efficient exploration, development, and production of leasable mineral resources (includes oil, natural gas, tar sands, and geothermal fluids), unless withdrawal or other administrative action is justified in the national interest. Ensure all leasable minerals actions comply with the goals, objectives, and resource restrictions (mitigations) to protect other resource values in the planning area. Ensure all leasable minerals actions comply with the Standards for Boundary Evidence risk assessments in accordance with DOI and BLM standards for significant transactions and projects (per 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-1, Cadastral Survey Handbook). Provide opportunities for environmentally responsible exploration and development of leasable mineral and energy resources subject to appropriate BLM policies, laws, and regulations. 		
181	Management Direction: Manage 61,300 acres as closed to mineral leasing on BLM surface and 400 acres closed to mineral leasing on BLM subsurface mineral estate (split estate) (Map 2-19 in Appendix A): <ul style="list-style-type: none"> Designated WSRs, wild Wilderness/WSAs 	Management Direction: Manage 187,800 acres as closed to mineral leasing on BLM surface and 3,000 acres closed to mineral leasing on BLM subsurface mineral estate (split estate) (Map 2-20 in Appendix A) in: <ul style="list-style-type: none"> Suitable WSR segments Designated WSRs Wilderness, Section 603 WSAs, and Section 202 WSAs ACECs Lands with wilderness characteristics managed as a priority over other multiple uses Oroville, Shasta Lake, and Forbestown cemeteries Lake Oroville State Recreation Area (split estate) Humboldt Redwoods State Park (split estate parcels) Sensitive soil types/areas of decomposed granite, ultramafic/serpentine soils, and biological soil crusts Degraded riparian zones after restoration has occurred 	Management Direction: Manage 117,700 acres as closed to mineral leasing on BLM surface and 800 acres closed to mineral leasing on BLM subsurface mineral estate (split estate) (Map 2-21 in Appendix A) in: <ul style="list-style-type: none"> Suitable WSR segments Designated WSRs Wilderness/WSAs ACECs, except Eden Creek ACEC Lands with wilderness characteristics managed as a priority over other multiple uses Oroville, Shasta Lake, and Forbestown cemeteries Lake Oroville State Recreation Area (split estate) 	Management Direction: Manage 164,200 acres as closed to mineral leasing on BLM surface and 2,800 acres closed to mineral leasing on BLM subsurface mineral estate (split estate) (Map 2-22 in Appendix A) in: <ul style="list-style-type: none"> Suitable WSR segments Designated WSRs Wilderness and Section 603 WSAs, and Section 202 WSAs ACECs Lands with wilderness characteristics managed as a priority over other multiple uses Oroville, Shasta Lake, and Forbestown cemeteries Lake Oroville State Recreation Area (split estate) Humboldt Redwoods State Park (split estate parcels) The following would not be included within the total acreage. When encountered they would be implemented on a case-by-case basis: <ul style="list-style-type: none"> Sensitive soil types/areas of decomposed granite, Soils containing asbestos (e.g., serpentine soils)
182	Management Direction: Manage 19,300 acres as open to mineral leasing subject to no surface occupancy stipulations on BLM surface and 300 acres on BLM subsurface mineral estate (split estate) (Map 2-19 in Appendix A).	Management Direction: Manage 33,100 acres as open to mineral leasing subject to no surface occupancy stipulations on BLM surface and 500 acres on BLM subsurface mineral estate (split estate) Map 2-20 in Appendix A): <ul style="list-style-type: none"> SRMAs ERMAs Nobles Trail route and Yreka Trail route of the California NHT 	Management Direction: Manage 53,400 acres as open to mineral leasing subject to no surface occupancy stipulations on BLM surface and 500 acres on BLM subsurface mineral estate (split estate) (Map 2-21 in Appendix A): <ul style="list-style-type: none"> Eden Creek ACEC SRMAs ERMAs Degraded riparian zones after restoration has occurred Nobles Trail route and Yreka Trail route of the California NHT Sensitive soil types areas of: decomposed granite, ultramafic/serpentine soils, and biological soil crusts 	Management Direction: Manage 87,900 acres as open to mineral leasing subject to no surface occupancy stipulations on BLM surface and 14,800 acres on BLM subsurface mineral estate (split estate) (Map 2-22 in Appendix A): <ul style="list-style-type: none"> SRMAs ERMAs Nobles Trail route and Yreka Trail route of the California NHT Riparian management areas

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
183	<p>Management Direction: Arcata RMP 1992 Due to the scattered nature of public land, low economic mineral potential, and lack of interest in mineral development within the Resource Area, restrictions and stipulations for mineral development will be determined on a case-by-case basis and consistent with the Recreation and Conservation Office's (RCO's)prescribed for each management area. The process for reviewing hardrock mineral development proposals will include considerations of California's Surface Mining and Reclamation Act of 1975 (SMARA) and associated coordination with "lead agencies" as defined by SMARA.</p> <p>Public lands (including mineral reserve lands) are available for mineral leasing and mineral materials sales and are open to entry under the Mining Law of 1872. All mineral actions must be consistent with Management Area RCOs.</p> <p>Public lands will be managed in a manner that recognizes the nation's need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1970, as it pertains to the public lands (Section 202©(3)).</p> <p>Mineral exploration and development is encouraged on public land in keeping with the 'LM's multiple resource use concept.</p> <p>Overall guidance on the management of mineral resources appears in the General Mining Law of 1872; Mining and Minerals Policy Act of 1970; Section 102(a)(12) of FLPMA, as amended: National Materials and Minerals Policy, Research and Development Act of 1980; and 'LM's Mineral Resources Policy of May 29, 1984.</p> <p>The 43 CFR 3802 and 3809 regulations provide for mineral exploration and development in conjunction with other resource development. BLM will work with mine operators to achieve plan approval. Where an operator does not have the technical resources to develop reclamation measures and measures to prevent unnecessary degradation, BLM will provide technical assistance. Mining within Arcata Resource Area (ARA) will be administered on a case-by-case basis.</p> <p>Development work, extraction, and patenting for locatable minerals will be allowed in designated wilderness areas only on valid claims existing before designation.</p> <p>Before BLM can approve mining plans of operation submitted for work in a designated wilderness area, a BLM mineral examiner must verify that a valid claim exists. The mineral examination and mineral report must confirm that minerals have been found and the evidence is of such character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success in developing a valuable mine.</p> <p>Mineral Materials: The Material Sale Act of 1947 and 43 CFR 3600 provide for the disposal and regulation of mineral materials. Sales of mineral materials to the public will be administered on a case-by-case basis. Mineral materials are sold at market prices. Free use permits will continue to be issued to</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
183 (cont.)	state and federal agencies, local communities, and non-profit organizations as the need arises. The 1992 Arcata RMP allows all public lands (including split estate lands) in the four Mas addressed in this plan amendment to remain available for mineral leasing and mineral materials sales, and open to entry under the Mining Law of 1872 except where specifically restricted or withdrawn. Because of the scattered nature of public land, low economic mineral potential, and lack of interest in mineral development within the resource area, restrictions and stipulations for mineral development will be determined on a case-by-case basis. The process for reviewing hardrock mineral development proposals will include considerations of SMARA, and coordination with lead agencies as defined by SMARA. All approvals of mineral actions must be consistent with management area RCOs.	(see above)	(see above)	(see above)
184	Management Direction: Arcata RMP Forest Plan Amendment 1995 The standards and guidelines designate initial reserve widths for protected riparian areas, as well as specific requirements for timber management, road construction and maintenance, grazing, recreation, minerals management, fire/fuels management, research, and restoration activities. The Mineral Leasing Act of 1920, Geothermal Steam Act of 1970, and 43 CFR 3100 to 3500 provide the regulatory framework for issuing mineral leases. These regulations apply where public interest exists for the development of oil, gas, sodium, potassium, and geothermal energy. Where required, stipulations will be attached to leases to mitigate impacts on sensitive species, cultural areas, and other resources susceptible to impacts from leasing-related activities. The development of mineral resources may be limited by the NVWFP land allocations and standards and guidelines. Red Mountain MA The Red Mountain RNA/ACEC management plan (USDI BLM 1989) withdrew the ACEC from entry for mineral materials sales. <u>Elder Creek</u> The 1992 Arcata RMP withdrew the Elder Creek RNA/ACEC from entry for mineral materials sales. The RMP also directed that the Elder Creek RNA/ACEC be withdrawn from entry for locatable minerals under the 1872 Mining Law; the petition for withdrawal has been submitted to the director of the BLM for approval.	Management Direction: No similar management action.	Management Direction: No similar management action.	Management Direction: No similar management action.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
185	<p>Management Direction: Redding RMP 1993 43 CFR 3809 specifically provides for the protection of cultural properties by initially prohibiting mining operators from knowingly disturbing or damaging them. The need for a cultural resource field inventory in response to a notice should be determined on the basis of professional judgment and is left to the discretion of the Redding Area Manager.</p> <p>Klamath MA <u>Shasta and Klamath Rivers Canyon</u> Withdraw all public lands within the 100-year flood zone of the Shasta River from mineral entry. Withdraw the Osburger Historic Site (5 acres) from mineral entry. <u>Upper Klamath River</u> Mineral materials disposals are not allowed within the river corridor. <u>Dry Creek</u> Mineral materials disposals are permitted only if such actions enhance the steelhead spawning potential within Dry Creek <u>Shasta Valley Wetlands</u> Mineral materials disposals are permitted only if such actions enhance the long-term condition of riparian vegetation and the native fisheries habitat. Offer all other lands for mineral leasing with no surface-disturbing actions permitted between November 15 and April 15.</p> <p>Shasta MA <u>Interlakes Special Recreation Management Area</u> Maintain opportunities to explore and develop freely available minerals on public lands. <u>West Of French Gulch</u> Maintain opportunities to explore and develop freely available minerals on public lands. <u>Lower Clear Creek and Mule Mountain</u> Public land within the 100-year floodplain is withdrawn from mineral entry. This same area is open to recreational mineral collection. Mineral materials disposals are not permitted within the 100-year floodplain unless such actions enhance salmonid spawning or the restoration of riparian vegetation.</p> <p>Trinity MA <u>Trinity River</u> Maintain opportunities for the exploration and production of locatable mineral values outside the protected areas Offer areas withdrawn from mineral entry as available for mineral leasing with no surface occupancy. Offer mineral materials disposals only to enhance riparian vegetation, anadromous fisheries habitat or when not in conflict with the long-term protection of natural values.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
185 (cont.)	<p><u>North Of Trinity River/Deadwood/Indian Creek</u> Provide opportunities for mineral development. Withdraw all public land with 1/4 mile of the Jennings Gulch Bald Eagle nesting site from mineral entry. Withdraw the Indian Creek townsite from mineral entry.</p> <p><u>Grass Valley Creek Watershed</u> Mineral materials disposals are permitted if they enhance, or are not in conflict with, the protection of the watershed. Acquired lands containing decomposed granitic soils will not be open for locatable mineral entry.</p> <p>Sacramento River MA <u>Cottonwood Creek and Sacramento River parcels</u> Withdraw the parcels from mineral entry. Mineral materials disposals are not permitted unless such actions benefit the natural values.</p> <p>Ishi MA <u>Battle Creek (below Manton Road)</u> Mineral materials disposals are not permitted unless such actions enhance the natural values, e.g., fisheries habitat or riparian vegetation recovery.</p> <p><u>Deer Creek</u> Mineral materials disposals are not permitted.</p> <p><u>Forks of Butte Creek</u> Public lands are withdrawn from mineral entry, Public Land Order 5329</p> <p><u>Minnehaha Mine</u> Withdraw from mineral entry.</p> <p><u>Upper Ridge Nature Preserve</u> Withdraw area from mineral entry.</p> <p><u>Baker Cypress</u> Mineral materials sales are permitted only if such actions enhance Baker cypress habitat.</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
186	<p>Management Direction: Redding RMP 1993 Klamath MA <u>Upper Klamath River</u> Offer public lands within the river corridor for mineral leasing with no surface occupancy. <u>Shasta Valley Wetlands</u> Offer for mineral leasing with no surface occupancy within 300 feet of wetland habitat. Shasta MA <u>Lower Clear Creek and Mule Mountain</u> Public land within the 100-year floodplain is available for mineral leasing with no surface occupancy. Trinity MA <u>Trinity River</u> Offer areas withdrawn from mineral entry as available for mineral leasing with no surface occupancy. <u>Grass Valley Creek Watershed</u> Available for mineral leasing with no surface occupancy. Sacramento River MA <u>Cottonwood Creek and Sacramento River parcels</u> Offer for mineral leasing with no surface occupancy. Ishi MA <u>Battle Creek (below Manton Road)</u> Offer public lands within the corridor for mineral leasing with no surface occupancy. <u>Deer Creek</u> Offer public lands for mineral leasing with no surface occupancy. <u>Upper Ridge Nature Preserve</u> Offer for leasing with no surface occupancy. Baker Cypress Offer for mineral leasing with no surface occupancy.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>
187	Minerals—Locatable Minerals			
188	<p>Goals and Objectives: No similar goals and objectives.</p>	<p>Goals and Objectives:</p> <ul style="list-style-type: none">• Support a successful and innovative mineral development program that allows for job opportunities while reclaiming mined lands to ecologically successful and environmentally stable conditions through the use of modern reclamation techniques.• Provide for the opportunity to develop locatable and mineral materials resources on public lands to meet national, regional and local needs while ensuring the long-term health and biodiversity of the land.• Encourage exploration of public lands to define potential mineral resources of national strategic interest, that are economically crucial for state and local communities, and to support green technology development and carbon reduction technology.• Process all plans and notices in accordance with 43 CFR 3809 and 3715 regulations, with a focus on quality product delivery to applicants, within a reasonable timeframe.• Conduct all mandatory compliance inspections to ensure proper compliance with the law and regulations, policy, and mine and reclamation plans. Provide constructive feedback to miners on the status of their mining operation.• Focus on resolving issues and progressively working through the steps of allowable enforcement actions to return any mining operation in noncompliance to compliance.• Ensure reclamation of mine sites to comply with the latest industry standards, best management practices, and 43 CFR 3809.• Ensure all locatable minerals actions comply with the Standards for Boundary Evidence risk assessments in accordance with DOI and BLM standards for significant transactions and projects (per 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-1, Cadastral Survey Handbook).		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
189	<p>Management Direction: Arcata RMP 1992 Due to the scattered nature of public land, low economic mineral potential, and lack of interest in mineral development within the Resource Area, restrictions and stipulations for mineral development will be determined on a case-by-case basis and consistent with the Recreation and Conservation Office's (RCO's)prescribed for each management area. The process for reviewing hardrock mineral development proposals will include considerations of California's Surface Mining and Reclamation Act of 1975 (SMARA) and associated coordination with "lead agencies as defined by SMARA.</p> <p>Public lands are available for mineral leasing and mineral materials sales and are open to entry under the Mining Law of 1872. All mineral actions must be consistent with Management Area RCOs.</p> <p>Public lands will be managed in a manner that recognizes the nation's need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1970, as it pertains to the public lands (Section 202(c)(3)).</p> <p>Mineral exploration and development is encouraged on public land in keeping with the BLM's multiple resource use concept. Overall guidance on the management of mineral resources appears in the General Mining Law of 1872; Mining and Minerals Policy Act of 1970; Section 102(a)(12) of FLPMA, as amended: National Materials and Minerals Policy, Research and Development Act of 1980; and 'BLM's Mineral Resources Policy of May 29, 1984.</p> <p>The 43 CFR 3802 and 3809 regulations provide for mineral exploration and development in conjunction with other resource development. BLM will work with mine operators to achieve plan approval. Where an operator does not have the technical resources to develop reclamation measures and measures to prevent unnecessary degradation, BLM will provide technical assistance. Mining within Arcata Resource Area (ARA) will be administered on a case-by-case basis.</p> <p>: The Material Sale Act of 1947 and 43 CFR 3600 provide for the disposal and regulation of mineral materials. Sales of mineral materials to the public will be administered on a case-by-case basis. Mineral materials are sold at fair market value. Free use permits will continue to be issued to state and federal agencies, local communities, and non-profit organizations as the need arises.</p> <p>The 1992 Arcata RMP allows all public lands (including split estate lands) in the four MAs addressed in this plan amendment to remain available for mineral leasing and mineral materials sales, and open to entry under the Mining Law of 1872 except where specifically restricted or withdrawn. Because of the scattered nature of public land, low economic mineral potential, and lack of interest in mineral development within the resource area, restrictions and stipulations for mineral development will be determined on a case-by-case basis. The process for</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
189 (cont.)	reviewing hardrock mineral development proposals will include considerations of SMARA, and coordination with lead agencies as defined by SMARA. All approvals of mineral actions must be consistent with management area RCOs.	(see above)	(see above)	(see above)
190	<p>Management Direction:</p> <p>Arcata RMP Forest Plan Amendment 1995</p> <p>The standards and guidelines designate initial reserve widths for protected riparian areas, as well as specific requirements for timber management, road construction and maintenance, grazing, recreation, minerals management, fire/fuels management, research, and restoration activities.</p> <p>The Mineral Leasing Act of 1920, Geothermal Steam Act of 1970, and 43 CFR 3100 to 3500 provide the regulatory framework for issuing mineral leases. These regulations apply where public interest exists for the development of oil, gas, sodium, potassium, and geothermal energy. Where required, stipulations will be attached to leases to mitigate impacts on sensitive species, cultural areas, and other resources susceptible to impacts from leasing-related activities.</p> <p>The development of mineral resources may be limited by the NWFP land allocations and standards and guidelines.</p> <p>Red Mountain MA</p> <p>The Red Mountain RNA/ACEC management plan (USDI BLM 1989) withdrew the ACEC from entry for mineral materials sales.</p> <p><u>Elder Creek</u></p> <p>The 1992 Arcata RMP withdrew the Elder Creek RNA/ACEC from entry for mineral materials sales. The RMP also directed that the Elder Creek RNA/ACEC be withdrawn from entry for locatable minerals under the 1872 Mining Law; the petition for withdrawal has been submitted to the director of the BLM for approval.</p>	<p>Management Direction:</p> <p>No similar management action.</p>	<p>Management Direction:</p> <p>No similar management action.</p>	<p>Management Direction:</p> <p>No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
191	<p>Management Direction: Redding RMP 1993 43 CFR 3809 specifically provides for the protection of cultural properties by initially prohibiting mining operators from knowingly disturbing or damaging them. The need for a cultural resource field inventory in response to a notice should be determined on the basis of professional judgment and is left to the discretion of the Redding Area Manager.</p> <p>Klamath MA <u>Shasta and Klamath Rivers Canyon</u> Withdraw all public lands within the 100-year flood zone of the Shasta River from mineral entry. Withdraw the Osburger Historic Site (5 acres) from mineral entry.</p> <p><u>Upper Klamath River</u> Offer public lands within the river corridor for mineral leasing with no surface occupancy. Mineral materials disposals are not allowed within the river corridor.</p> <p><u>Dry Creek</u> Mineral materials disposals are permitted only if such actions enhance the steelhead spawning potential within Dry Creek</p> <p><u>Shasta Valley Wetlands</u> Mineral materials disposals are permitted only if such actions enhance the long-term condition of riparian vegetation and the native fisheries habitat. Offer for mineral leasing with no surface occupancy within 300 feet of wetland habitat. Offer all other lands for mineral leasing with no surface-disturbing actions permitted between November 15 and April 15.</p> <p>Shasta MA <u>Interlakes Special Recreation Management Area</u> Maintain opportunities to explore and develop freely available minerals on public lands.</p> <p><u>West Of French Gulch</u> Maintain opportunities to explore and develop freely available minerals on public lands.</p> <p><u>Lower Clear Creek and Mule Mountain</u> Public land within the 100-year floodplain is withdrawn from mineral entry. This same area is open to recreational mineral collection. Public land within the 100-year floodplain is available for mineral leasing with no surface occupancy. Mineral materials disposals are not permitted within the 100-year floodplain unless such actions enhance salmonid spawning or the restoration of riparian vegetation.</p> <p>Trinity MA <u>Trinity River</u> Maintain opportunities for the exploration and production of locatable mineral values outside the protected areas</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
191 (cont.)	<p>Offer for mineral leasing with no surface occupancy within areas withdrawn from mineral entry.</p> <p>Offer mineral materials disposals only to enhance riparian vegetation, anadromous fisheries habitat or when not in conflict with the long-term protection of natural values.</p> <p><u>North Of Trinity River/Deadwood/Indian Creek</u></p> <p>Provide opportunities for mineral development.</p> <p>Withdraw all public land with 1/4 mile of the Jennings Gulch Bald Eagle nesting site from mineral entry. Withdraw the Indian Creek townsite from mineral entry.</p> <p><u>Grass Valley Creek Watershed</u></p> <p>Mineral materials disposals are permitted if they enhance, or are not in conflict with, the protection of the watershed.</p> <p>Available for mineral leasing with no surface occupancy.</p> <p>Acquired lands containing decomposed granitic soils will not be open for locatable mineral entry.</p> <p>Sacramento River MA</p> <p><u>Cottonwood Creek and Sacramento River parcels</u></p> <p>Withdraw the parcels from mineral entry.</p> <p>Offer for mineral leasing with no surface occupancy.</p> <p>Mineral materials disposals are not permitted unless such actions benefit the natural values.</p> <p>Ishi MA</p> <p><u>Battle Creek (below Manton Road)</u></p> <p>Offer public lands within the corridor for mineral leasing with no surface occupancy.</p> <p>Mineral materials disposals are not permitted unless such actions enhance the natural values, e.g., fisheries habitat or riparian vegetation recovery.</p> <p><u>Deer Creek</u></p> <p>Offer public lands for mineral leasing with no surface occupancy.</p> <p>Mineral materials disposals are not permitted.</p> <p><u>Forks of Butte Creek</u></p> <p>Public lands are withdrawn from mineral entry, Public Land Order 5329</p> <p><u>Minnehaha Mine</u></p> <p>Withdraw from mineral entry.</p> <p><u>Upper Ridge Nature Preserve</u></p> <p>Withdraw area from mineral entry.</p> <p>Offer for leasing with no surface occupancy.</p> <p><u>Baker Cypress</u></p> <p>Mineral materials sales are permitted only if such actions enhance Baker cypress habitat.</p> <p>Offer for mineral leasing with no surface occupancy.</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
192	<p>Management Direction: No similar management action.</p>	<p>Management Direction: Locatable Minerals</p> <ul style="list-style-type: none"> Lands would be open to mineral entry subject to the General Mining Law of 1872, as amended. All lands in the planning area would be open to locatable mineral entry with the exception of those areas described below as existing withdrawals (60,000 acres). The following areas would be recommended for withdrawal from locatable mineral entry on BLM-administered surface lands: Alternative B, 104,700 acres (Map 2-24 in Appendix A), Alternative C, 56,100 (Map 2-25 in Appendix A), and Alternative D, 86,600 acres (Map 2-26 in Appendix A), and on BLM subsurface mineral estate (split estate) (Alternative B, 1,100 acres, Alternative C, 1,100, and Alternative D, 1,900 acres) Existing withdrawals would be continued. <ul style="list-style-type: none"> Trinity Wild and Scenic River (3,123 acres) – withdrawn from location and entry under the United States mining laws (30 U.S.C. Ch. 2 (1994)), but not from leasing under the mineral leasing laws or the Materials Act of 1947. These lands were withdrawn under Public Land Order 7839. Forks of Butte Creek (Butte County) (2,070 acres) – this withdrawal from mineral entry protects water quality and casual use (recreational) mining (as defined in 43 CFR 3809) opportunities. These lands were withdrawn in perpetuity under Public Land Order 5329. <p>New recommendations for withdrawals from mineral entry under the General Mining Law of 1872, as amended, and in accordance with Section 204 of FLMPA, would include:</p> <ul style="list-style-type: none"> Helena Site Indian Creek Townsite Cemeteries and burial grounds Listed TCPs All developed recreation sites and communication sites Trinity River and Clear Creek Acquisition Areas (344 acres) – as defined under Public Land Order 7308. Eel River WSR (Mainstem Eel, North Fork Eel, Middle Fork Eel, South Fork Eel, Van Duzen) New river segments managed as suitable for inclusion in the NWSRS categorized as Wild. Section 603 and Section 202 WSAs Lands with wilderness characteristics identified in this RMP to be managed as a priority over other uses. Ma-le'I Dunes ACEC Grass Valley Creek ACEC Upper Klamath Bench ACEC Eden Valley ACEC <ul style="list-style-type: none"> The 43 CFR 3802 and 3809 regulations provide for mineral exploration and development in conjunction with other resource development. BLM will work with mine operators to achieve plan approval. The operator must provide the responsible district or field office with an acceptable estimate of the reclamation and closure costs for all proposed Notices and Plans of Operations. The operator's estimate of the cost to reclaim and close the operations must meet the requirements of 43 CFR 3809.552(a) and 3809.554(a) and must be acceptable to the BLM as required by 43 CFR 3809.554(b). Based on a review of the reclamation cost estimate, the authorized officer must provide the operator with a written decision as to the amount of the required financial guarantee. Operations may not commence until the operator has received written notification that the BLM has accepted and obligated the operator's financial guarantee, and the complete Notice is acknowledged or Plan of Operations is approved by the district or field manager. For notice-level locatable mineral development, reclamation obligations continue beyond the expiration or any termination of their notice until those obligations are satisfied." For plan-level locatable mineral development, all operators shall comply with applicable federal and state water quality standards. The district or field manager must ensure any authorized activity under a Notice or Plan of Operations has an acceptable financial guarantee that covers all reclamation, closure, and post-reclamation obligations that will result from proposed and ongoing operations (IM 2009-153, Financial Guarantees for Notices and Plans of Operation; see also 43 CFR 3809.500). Performance standards (3809.420) – apply to future locatable mineral operations, current approved plans of operations and active notices: <ul style="list-style-type: none"> Comply with federal and state water quality standards to avoid 'unnecessary and undue' degradation. Reclamation of roads to prevent sedimentation (hydrologically invisible) – meet same standards as set out for new roads outside of mine operations. Where mining would impact vegetation, stockpiling topsoil would be required, with replanting of native species. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
193	Minerals—Mineral Materials			
194	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none"> Support a successful and innovative mineral development program that allows for job opportunities while reclaiming mined lands to ecologically successful and environmentally stable conditions through the use of modern reclamation techniques. Provide for the opportunity to develop mineral materials resources on public lands to meet national, regional and local needs while ensuring the long-term health and biodiversity of the land. Encourage exploration of public lands to define potential mineral resources of national strategic interest, that are economically crucial for state and local communities, and to support green technology development and carbon reduction technology. Process all mining and reclamation plans in accordance with 43 CFR 3600 regulations, with a focus on quality product delivery to applicants, within a reasonable timeframe. Conduct all mandatory compliance inspections to ensure proper compliance with the law and regulations, policy, and mining and reclamation plans. Provide constructive feedback to operators on the status of their mining operation. Perform production verification to ensure accurate accounting of materials removed and proper compensation to the federal government. Identify and resolve any mineral materials trespass. Ensure all mineral materials actions comply with the Standards for Boundary Evidence risk assessments in accordance with DOI and BLM standards for significant transactions and projects (per 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-1, Cadastral Survey Handbook). 		
195	Management Direction: Manage 81,800 acres as closed to mineral materials development BLM surface and 800 acres closed to mineral materials development on BLM subsurface mineral estate (split estate) (Map 2-27 in Appendix A): <ul style="list-style-type: none"> Designated WSRs, wild Wilderness/WSAs 	Management Direction: All lands in the planning area would be open to mineral materials development with the following exceptions that would be <u>closed</u> to mineral materials development on BLM-administered surface lands (Alternative B, 206,700 acres [Map 2-28 in Appendix A], Alternative C, 167,800 acres [Map 2-29 in Appendix A], Alternative D, 209,600 acres [Map 2-30 in Appendix A]), and on BLM subsurface mineral estate (split estate) (Alternative B, 1,300 acres; Alternative C, 1,600 acres; and Alternative D, 5,600 acres): <ul style="list-style-type: none"> Wilderness, Section 603 WSAs, and Section 202 WSAs SRMAs, unless for restoration purposes ERMAs, unless for restoration purposes Suitable WSR segments classified as Wild or Scenic, unless for restoration purposes Eel River WSR (Mainstem Eel, North Fork Eel, Middle Fork Eel, South Fork Eel, Van Duzen) in the Wild and Scenic segments Trinity River WSR, unless for restoration purposes BLM-administered lands or BLM acquired lands in the Coastal Strip California National Historic Trail on BLM-administered lands Lands with wilderness characteristics managed as a priority All ACECs would be closed to mineral materials development unless for restoration purposes, with the following exceptions that would be <u>open</u> to mineral materials development on a case-by-case basis: <ul style="list-style-type: none"> Butte Creek ACEC Deer Creek ACEC Upper and Lower Clear Creek ACEC Upper Mattole ACEC BLM would manage all acquired mineral materials consistent with FLPMA, and other existing laws and regulatory requirements.		
196	Management Direction: No similar management action.	Management Direction: The following sensitive soil types/areas would be closed to mineral materials development: <ul style="list-style-type: none"> Decomposed granite Ultramafic/Serpentine Biological soil crusts 	Management Direction: Any permitted surface-disturbing activities conducted within them would require a stormwater management plan or implement appropriate BMPs: <ul style="list-style-type: none"> Decomposed granite Ultramafic/Serpentine Biological soil crusts 	Management Direction: The following sensitive soil types/areas would be closed to mineral materials development: <ul style="list-style-type: none"> Decomposed granite Soils containing asbestos (e.g., serpentine soils)
197	Management Direction: No similar management action.	Management Direction: Mineral materials development and restoration activities would be allowed within active floodplains.	Management Direction: Mineral materials development would be allowed within the active floodplain only for restoration purposes, and if BLM determines it consistent with natural and cultural resource goals.	

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
198	<p>Management Direction: Arcata RMP 1992 Due to the scattered nature of public land, low economic mineral potential, and lack of interest in mineral development within the Resource Area, restrictions and stipulations for mineral development will be determined on a case-by-case basis and consistent with the Recreation and Conservation Office's (RCO's)prescribed for each management area. The process for reviewing hardrock mineral development proposals will include considerations of California's Surface Mining and Reclamation Act of 1975 (SMARA) and associated coordination with "lead agencies" as defined by SMARA. Public lands (including mineral reserve lands) are available for mineral leasing and mineral material sales and are open to entry under the Mining Law of 1872. All mineral actions must be consistent with Management Area RCOs. Public lands will be managed in a manner that recognizes the nation's need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1970, as it pertains to the public lands (Section 202(c)(3)). Mineral exploration and development is encouraged on public land in keeping with the 'LM's multiple resource use concept. Overall guidance on the management of mineral resources appears in the General Mining Law of 1872; Mining and Minerals Policy Act of 1970; Section 102(a)(12) of FLPMA, as amended: National Materials and Minerals Policy, Research and Development Act of 1980; and 'LM's Mineral Resources Policy of May 29, 1984. The 43 CFR 3802 and 3809 regulations provide for mineral exploration and development in conjunction with other resource development. BLM will work with mine operators to achieve plan approval. Where an operator does not have the technical resources to develop reclamation measures and measures to prevent unnecessary degradation, BLM will provide technical assistance. Mining within Arcata Resource Area (ARA) will be administered on a case-by-case basis. Development work, extraction, and patenting for locatable minerals will be allowed in designated wilderness areas only on valid claims existing before designation. Before BLM can approve mining plans of operation submitted for work in a designated wilderness area, a BLM mineral examiner must verify that a valid claim exists. The mineral examination and mineral report must confirm that minerals have been found and the evidence is of such character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success in developing a valuable mine. Mineral materials: The Material Sale Act of 1947 and 43 CFR 3600 provide for the disposal and regulation of mineral materials. Sales of mineral materials to the public will be administered on a case-by-case basis. Mineral materials are sold at fair market value. Free use permits will continue to be issued</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
198 (cont.)	to state and federal agencies, local communities, and non-profit organizations as the need arises. The 1992 Arcata RMP allows all public lands (including split estate lands) in the four MAs addressed in this plan amendment to remain available for mineral leasing and mineral material sales, and open to entry under the Mining Law of 1872 except where specifically restricted or withdrawn. Because of the scattered nature of public land, low economic mineral potential, and lack of interest in mineral development within the resource area, restrictions and stipulations for mineral development will be determined on a case-by-case basis. The process for reviewing hardrock mineral development proposals will include considerations of SMARA, and coordination with lead agencies as defined by SMARA. All approvals of mineral actions must be consistent with management area RCOs.	(see above)	(see above)	(see above)
199	Management Direction: Arcata RMP Forest Plan Amendment 1995 The standards and guidelines designate initial reserve widths for protected riparian areas, as well as specific requirements for timber management, road construction and maintenance, grazing, recreation, minerals management, fire/fuels management, research, and restoration activities. The Mineral Leasing Act of 1920, Geothermal Steam Act of 1970, and 43 CFR 3100 to 3500 provide the regulatory framework for issuing mineral leases. These regulations apply where public interest exists for the development of oil, gas, sodium, potassium, and geothermal energy. Where required, stipulations will be attached to leases to mitigate impacts on sensitive species, cultural areas, and other resources susceptible to impacts from leasing-related activities. The development of mineral resources may be limited by the NVWFP land allocations and standards and guidelines. Red Mountain MA The Red Mountain RNA/ACEC management plan (USDI BLM 1989) withdrew the ACEC from entry for mineral materials sales. <u>Elder Creek</u> The 1992 Arcata RMP withdrew the Elder Creek RNA/ACEC from entry for mineral materials sales. The RMP also directed that the Elder Creek RNA/ACEC be withdrawn from entry for locatable minerals under the 1872 Mining Law; the petition for withdrawal has been submitted to the director of the BLM for approval.	Management Direction: No similar management action.	Management Direction: No similar management action.	Management Direction: No similar management action.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
200	<p>Management Direction: Redding RMP 1993 43 CFR 3809 specifically provides for the protection of cultural properties by initially prohibiting mining operators from knowingly disturbing or damaging them. The need for a cultural resource field inventory in response to a notice should be determined on the basis of professional judgment and is left to the discretion of the Redding Area Manager.</p> <p>Klamath MA <u>Shasta and Klamath Rivers Canyon</u> Withdraw all public lands within the 100-year flood zone of the Shasta River from mineral entry. Withdraw the Osburger Historic Site (5 acres) from mineral entry.</p> <p><u>Upper Klamath River</u> Offer public lands within the river corridor for mineral leasing with no surface occupancy. Mineral materials disposals are not allowed within the river corridor.</p> <p><u>Dry Creek</u> Mineral materials disposals are permitted only if such actions enhance the steelhead spawning potential within Dry Creek</p> <p><u>Shasta Valley Wetlands</u> Mineral materials disposals are permitted only if such actions enhance the long-term condition of riparian vegetation and the native fisheries habitat. Offer for mineral leasing with no surface occupancy within 300 feet of wetland habitat. Offer all other lands for mineral leasing with no surface-disturbing actions permitted between November 15 and April 15.</p> <p>Shasta MA <u>Interlakes Special Recreation Management Area</u> Maintain opportunities to explore and develop freely available minerals on public lands.</p> <p><u>West Of French Gulch</u> Maintain opportunities to explore and develop freely available minerals on public lands.</p> <p><u>Lower Clear Creek and Mule Mountain</u> Public land within the 100-year floodplain is withdrawn from mineral entry. This same area is open to recreational mineral collection. Public land within the 100-year floodplain is available for mineral leasing with no surface occupancy. Mineral materials disposals are not permitted within the 100-year floodplain unless such actions enhance salmonid spawning or the restoration of riparian vegetation.</p> <p>Trinity MA <u>Trinity River</u> Maintain opportunities for the exploration and production of locatable mineral values outside the protected areas.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
200 (cont.)	<p>Offer for mineral leasing with no surface occupancy within areas withdrawn from mineral entry.</p> <p>Offer mineral materials disposals only to enhance riparian vegetation, anadromous fisheries habitat or when not in conflict with the long-term protection of natural values.</p> <p><u>North Of Trinity River/Deadwood/Indian Creek</u></p> <p>Provide opportunities for mineral development.</p> <p>Withdraw all public land within 0.25 miles of the Jennings Gulch Bald Eagle nesting site from mineral entry. Withdraw the Indian Creek townsite from mineral entry.</p> <p><u>Grass Valley Creek Watershed</u></p> <p>Mineral materials disposals are permitted if they enhance, or are not in conflict with, the protection of the watershed.</p> <p>Available for mineral leasing with no surface occupancy.</p> <p>Acquired lands containing decomposed granitic soils will not be open for locatable mineral entry.</p> <p>Sacramento River MA</p> <p><u>Cottonwood Creek and Sacramento River parcels</u></p> <p>Withdraw the parcels from mineral entry.</p> <p>Offer for mineral leasing with no surface occupancy.</p> <p>Mineral materials disposals are not permitted unless such actions benefit the natural values.</p> <p>Ishi MA</p> <p><u>Battle Creek (below Manton Road)</u></p> <p>Offer public lands within the corridor for mineral leasing with no surface occupancy.</p> <p>Mineral materials disposals are not permitted unless such actions enhance the natural values, e.g., fisheries habitat or riparian vegetation recovery.</p> <p><u>Deer Creek</u></p> <p>Offer public lands for mineral leasing with no surface occupancy.</p> <p>Mineral materials disposals are not permitted.</p> <p><u>Forks of Butte Creek</u></p> <p>Public lands are withdrawn from mineral entry, Public Land Order 5329</p> <p><u>Minnehaha Mine</u></p> <p>Withdraw from mineral entry.</p> <p><u>Upper Ridge Nature Preserve</u></p> <p>Withdraw area from mineral entry.</p> <p>Offer for leasing with no surface occupancy.</p> <p><u>Baker Cypress</u></p> <p>Mineral materials sales are permitted only if such actions enhance Baker cypress habitat.</p> <p>Offer for mineral leasing with no surface occupancy.</p>	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
201	Recreation and Visitor Services			
202	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none">• Manage, promote, and develop recreation resources while maintaining areas for other resources (such as wildlife and fish).• Provide a diversity of high-quality recreational opportunities for multiple user groups to experience access to fresh air, waterways, and connection to nature.• Engage, consult, and collaborate with other agencies, Tribes, partners, businesses and BLM permittees in recreation planning and programming including in planning for regional trail connectivity.• Manage designated recreation areas and provide visitor services such as information, interpretation, and education in the context of the recreation setting to promote desired uses, beneficial visitor experiences, recreation site and natural and cultural resources stewardship, and to minimize user conflicts.• Provide recreational opportunities and equity for diverse user groups, partners, the greater community and visiting populations in the administration of recreational access, planning and programming, encouraging socioeconomic development, and promoting responsible recreation and stewardship.• Where appropriate, develop visitor services that are accessible to all user groups.• Manage recreation to protect human health and safety.• Propose new designated target shooting area(s) where appropriate to consolidate use to protect public safety, natural or cultural resources, and minimize user conflicts.• Manage designated recreation areas to be adaptive to recreation trends, emerging user conflicts, and changing demand.• Monitor OHV, equestrian and bicycle use areas and all other recreation uses. If substantial impacts to natural and cultural resources or major recreational conflicts are occurring, apply limitations such as size or weight restrictions on vehicles or designation of routes.• Within the identified special recreation management areas (SRMAs), manage to protect and enhance a target set of the primary activities to achieve the identified experiences and benefits; and the desired physical, social, and operational settings within each area and the activities that occur within them.• Maintain visitor satisfaction through surveys at intervals that are sensitive to changing trends in targeted recreation demand and desired user experience.• Within the identified extensive recreation management areas (ERMAs), manage for: 1) principal recreational activities; and 2) manage those recreational activities commensurate with the management of other resources and resource uses.• Administer special recreation permits (SRPs) or otherwise authorized uses to conserve identified recreation outcomes, manage visitor use, protect recreational, cultural, and natural resources, provide consistency with ACEC relevance and importance values, provide fair market value to the U.S., and provide for health and safety of visitors.• Improve recreation access and opportunities through prioritizing land tenure projects that provide public access.• Provide sustainable recreational opportunities to enhance quality of life for the community and the visiting population.• Improve stewardship of recreation resources through inclusive partnerships and volunteer outreach.		
203	Management Direction: Arcata RMP Samoa Amendment 1995 Samoa Peninsula MA <i>Samoa Dunes</i> Provide opportunities for other non-consumptive recreational uses (hiking, sightseeing, bird watching, picnicking, surfing, fishing) that do not directly conflict with OHV use. <i>Manila Dunes</i> Enhance natural values and dune ecosystem. Provide opportunities for other non-consumptive recreational uses (hiking, sightseeing, bird watching, picnicking).	Management Direction: No similar management action.		
204	Management Direction: Arcata RMP Forest Plan Amendment 1995 Covelo Vicinity MA Protect and enhance natural and recreational values along the federally designated “wild” and “scenic” segments of the Middle Fork Eel River as outlined in the Middle Fork Eel River Management Plan. Red Mountain MA Protect and enhance natural and recreational values along the federally designated portions of the South Fork Eel River WSR corridor.	Management Direction: No similar management action.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
205	<p>Management Direction: No similar management action.</p>	<p>Management Direction:</p> <ul style="list-style-type: none"> Casual use unmanned aerial vehicle (UAV) landings are prohibited in designated wilderness areas, per the Wilderness Act. Except where modified by future implementation level travel management decisions, casual use would also be prohibited in designated campsites, designated WSR corridors, Section 603 WSAs, Section 202 WSAs, and lands managed for wilderness characteristics as a priority. BLM would monitor natural and cultural resource impacts of UAV. If monitoring indicates that UAV are not compatible with other uses in a particular area, subsequent implementation level NEPA may be considered to limit UAV uses. BLM would comply with all deed restrictions associated with lands they acquire and manage by promulgating supplementary rules where appropriate. Unauthorized trail construction, including any user-made mountain bike or OHV feature, would not be allowed, and would be remediated as appropriate. Where possible, encourage trail connectivity to urban centers and points of interest. Maintain and develop collaborative strategies with, but not limited to, Tribes, non-profit organizations, federal and state agencies, historic preservation groups, tourism entities and local recreational groups to achieve stewardship goals within recreation management areas and areas where recreation occurs. Provide opportunity for Tribal engagement in the planning process for recreational opportunities in areas of cultural sensitivity and beyond, to include but not limited to new trail construction, river, and creek access, and camping opportunities. In areas where one recreational use is not dominant, provide opportunity for inclusive visitor use surveys and input before areas are developed for a single specialized user group. <p>Visitor Services</p> <ul style="list-style-type: none"> Information materials would describe recreation areas and the activities, experiences, and benefits available. Provide access to information through multiple platforms, including BLM websites, paper-based products, and in-person. Orient visitor services toward education about the resource and stewardship goals when communicating about etiquette, rules, policy and law. Provide opportunity for Tribal engagement in the development of visitor services to include, but not limited to interpretive panels and education, and outreach and expansion on the conversation regarding responsible recreation. Enforcement of rules and laws would be provided to reduce conflicts, hazards, and resource damage. <p>Recreational Equity</p> <ul style="list-style-type: none"> ADA mobility devices would be allowed on routes that are consistent with safe use by those devices. Increase and prioritize development of recreational opportunity in historically underserved communities. Develop ADA/ABA access points where feasible. Throughout all RMAs, support free or low-expense inclusive facilitated experience programs that introduce people to outdoor recreation activities in a safe and supportive environment. Develop visitor services information in multiple languages, including braille, where appropriate. Use adaptive management to understand and respond to the diversity of outdoor recreation styles among demographics. <p>Camping Restrictions</p> <ul style="list-style-type: none"> Individual SRMAs would have camping limits identified in their management actions, as applicable. For all other BLM lands, camping limit would default to the general BLM policy. In designated campgrounds, an individual would be limited to 14 days at any one campground within a 30-day timeframe. For dispersed camping, an individual would be limited to 14 days at any one location within a 30-day timeframe, then the individual would need to move a minimum of 25 miles away for subsequent camping. (**) Unless otherwise indicated in this RMP, camping would be prohibited in all trailheads, parking lots and within 0.25 miles of all designated campgrounds and campsites (unless otherwise approved by BLM Authorized Officer). (**) Existing camping closures would continue. If monitoring indicates camping is causing adverse impacts to recreational experience or natural and cultural resources, additional camping closures or modifications to camping limits would be considered and analyzed at the site-specific implementation level. <p>Special Recreation Permits SRPs would be issued as a discretionary action for activities that:</p> <ul style="list-style-type: none"> Are consistent with resource and program objectives (for example, SRPs may not be authorized or would be amended if desired use levels are projected to exceed desired levels for the area, do not meet the goals of the area, or adversely impact other resource values). Are within budgetary and workload constraints (for example, If the FO is unable to fulfill or complete all the necessary steps of issuing and managing an SRP, then an SRP may not be issued). Would not cause public health and safety issues or create user conflicts (for example, an SRP may not be issued if BLM lands together with projected public use levels are insufficient to accommodate the proposed use). <p>BLM would collaborate with applicable agencies and SRP holders in the SRP application process as necessary to address potential resource limitations and recreational conflicts.</p> <p>Firearm Use Restrictions</p> <ul style="list-style-type: none"> In compliance with 43 CFR 8365.2-5 (a), discharge of firearms including recreational target shooting is prohibited in all developed recreation sites with the exception of designated target shooting areas. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
205 (cont.)	(see above)	<ul style="list-style-type: none">No exploding targets without permission from the BLM authorized officer. (**)Shooting targets must be untreated wood, paper, cardboard, or metal silhouette. Any other form of glass, plastic or metal used for target shooting is prohibited. Non-toxic clay pigeons would be allowed. (**)Tracer rounds, ammunition considered to be incendiary or explosive, and body armor piercing ammunition would not be allowed. Steel core ammunition would not be allowed. (**)All other forms of projectiles such as paintball, airsoft or any other form would be prohibited at developed recreation sites. Any paintballing or airsoft projectiles used outside of developed recreation sites would be required to be biodegradable. (**) <p>Vegetation Management</p> <ul style="list-style-type: none">Conduct vegetation treatments to manage fuels and reduce fire risk near recreational developments where possible.Conduct vegetation treatments where appropriate to provide for safe recreational experiences such as reducing falling hazards, increasing sight lines, and promoting a feeling of safety. <p>SRMA Management</p> <ul style="list-style-type: none">Throughout the life of the plan and as funding allows, for SRMAs, evaluate visitor satisfaction using such methods as: field visits, staff monitoring, or surveys. The objective would be to manage recreation to provide the identified experiences and benefits, 75 percent of the time. When this level of satisfaction is not met, management would be implemented as practicable to address issues that are impeding identified experiences and benefits.Forestry: Timber harvest, firewood cutting, and special forest product harvest would be allowed if they can be implemented without affecting the desired recreation setting in the long-term.Lands and Realty: All SRMAs would be ROW avoidance areas and would be retained for long-term management.Minerals: All SRMAs would be closed to mineral materials development (with exception of development of mineral materials for restoration purposes only) and closed to mineral leasing.Visual Resource Management: All SRMAs would be managed under VRM Class III objectives except specific locations where VRM Class II objectives are proposed for special designation areas located within the SRMAs. The Iron Mountain Target Shooting SRMA would be managed under VRM Class IV objectives.Comprehensive Travel Management: All SRMAs would be classified as OHV Limited, except for Samoa Dunes SRMA, which would be classified as OHV Open. <p>ERMA Management</p> <ul style="list-style-type: none">Forestry: <i>All ERMAs except Mule Mountain RMZ.</i> Timber harvest, firewood cutting, and special forest product harvest would be allowed if they can be implemented without adversely affecting the desired recreation setting in the long-term.Lands and Realty: All ERMAs would be retained for long-term management.Minerals: All ERMAs would be closed to mineral materials development (with exception of development of mineral materials for restoration purposes only) and closed to mineral leasingVisual Resource Management: All ERMAs would be managed under VRM Class III objectives except specific locations where VRM Class II objectives are proposed for special designation areas located within the ERMAs.Comprehensive Travel Management: All ERMAs would be classified as OHV Limited.Collaborate with community partners, agencies, and Tribes to promote awareness of area sensitivity and cumulative impacts to be avoided. <p>Back Country Areas (BCAs)</p> <ul style="list-style-type: none">No BCAs would be identified.		
206	Areas Outside of Recreation Management Areas			
207	Management Direction: No similar management action.	Management Direction: <ul style="list-style-type: none">Recreation development outside of RMAs would be assessed on a case-by-case basis for suitability for recreational opportunities. Recreation development would not occur where there is substantial compromise of natural and cultural resources. Recreation facilities may be considered where needed to reduce impacts from recreation on natural and cultural resources.Recreation would be limited as necessary to avoid conflicts with other resource values.SRPs and otherwise authorized uses would be assessed on a case-by-case basis. Where feasible and consistent with resource values, such uses would be allowed.		
208	Special and Extensive Recreation Management Areas (SRMAs and ERMAs)			
209	Management Direction: The following three areas are designated as SRMAs (40,190 acres, Map 2-31 in Appendix A). <ul style="list-style-type: none">Interlakes SRMA (37,800 acres)Samoa Dunes SRMA (190 acres)Forks of Butte Creek SRMA (2,200 acres)	Management Direction: The following area would be designated as SRMAs (23,830 acres, Map 2-32 in Appendix A): <ul style="list-style-type: none">Chappie-Shasta OHV Area SRMA (23,800 acres)	Management Direction: The following four areas would be designated as SRMAs (42,290 acres, Map 2-33 in Appendix A [Alternative C], and Map 2-34 in Appendix A [Alternative D]): <ul style="list-style-type: none">Chappie-Shasta OHV Area SRMA (31,100 acres)Redding Trails SRMA (9,900 acres)<ul style="list-style-type: none">Sacramento River Rail Trail and Keswick Reservoir RMZ (30 acres)Clear Creek RMZ (2,600 acres)Mule Mountain RMZ (2,900 acres)Community Trails RMZ (4,400 acres)Iron Mountain Target Shooting Area SRMA (600 acres)Samoa Dunes SRMA (190 acres)	

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
210	Management Direction: No similar management action.	Management Direction: The following five areas would be designated as ERMA (21,790 acres, Map 2-32 in Appendix A): <ul style="list-style-type: none">• Redding Trails ERMA (9,900 acres)<ul style="list-style-type: none">– Sacramento River Rail Trail and Keswick Reservoir RMZ (30 acres)– Clear Creek RMZ (2,600 acres)– Mule Mountain RMZ (3,400 acres)– Community Trails RMZ (4,400 acres)• Swasey ERMA (500 acres)• Lacks Creek ERMA (9,000 acres)• Samoa Dunes ERMA (190 acres)• Forks of Butte Creek ERMA (2,200 acres)	Management Direction: The following nine areas would be designated as ERMA (45,980 acres, Map 2-33 in Appendix A): <ul style="list-style-type: none">• Swasey ERMA (500 acres)• Lacks Creek ERMA (9,000 acres)• Sacramento River Bend ERMA (20,400) acres)• Trinity River ERMA (9,500 acres)• Ewing Area ERMA (1,000 acres)• Weaverville Community Forest ERMA (3,100 acres).• Ma-le'l Dunes ERMA (180 acres)• Forks of Butte Creek ERMA (2,200 acres)• Mike Thompson Wildlife Area, South Spit, Humboldt Bay ERMA (if the area becomes federally managed) (600 acres)	Management Direction: The following eight areas would be designated as ERMA (45,380 acres, Map 2-34 in Appendix A): <ul style="list-style-type: none">• Swasey ERMA (500 acres)• Lacks Creek ERMA (9,000 acres)• Sacramento River Bend ERMA (20,400 acres)• Trinity River ERMA (9,500 acres)• Ewing Area ERMA (1,000 acres)• Weaverville Community Forest ERMA (3,100 acres).• Ma-le'l Dunes ERMA (180 acres)• Forks of Butte Creek ERMA (2,200 acres)
211	Management Direction: Redding RMP 1993 Interlakes SRMA (37,800 acres) Develop an integrated resources activity plan for the Interlakes SRMA that identifies priority land acquisition needs, identifies sensitive resource protection locations, details the trail and management facilities development/maintenance needs, identifies potential site(s) for a regional firing range as proposed by a requesting agency(s), delineates VRM Class areas, identifies important public interpretive needs, describes needed visitor services, details resource monitoring conditions and evaluates possible designation as a NRA. (completed). Enhance non-motorized recreation opportunities within the SRMA via a greenway connecting Redding to Shasta Dam along the Sacramento River.	Management Direction: The Interlakes SRMA designation would not be retained.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
212	<p>Management Direction:</p> <p>Provide a regional opportunity for motorized recreation with a focus within the Gene Chappie/Shasta OHV Area.</p> <p>Enhance non-motorized recreation opportunities within the area via a greenway connecting Redding to Shasta Dam along the Sacramento River.</p> <p>Area is managed as Semi-Primitive, Non-Motorized, Semi-Urban, Semi-Primitive Motorized, and Roaded Natural. (ROS)</p> <p>Area is designated a SRMA incorporating the Gene Chappie-Shasta OHV Area.</p> <p>Acquire available unimproved lands that provide legal public access to adjoining public lands, complete segments of recreational trails, enhance protection of sensitive resources, provide opportunities for public interpretation, enhance reforestation efforts (including habitat improvement for sensitive species), or enhance long-term administration of the area.</p> <p>Public lands within the viewshed of Whiskeytown Lake of the Whiskeytown Unit of the National Recreation Area and Shasta Dam Scenic Drive are managed as VRM Class II.</p> <p>Lands acquired using State of California funds will not be opened to mineral location but will be available for mineral leasing.</p> <p>Offer all public lands within the area east of the Sacramento River and within 0.25 miles west of the Sacramento River for mineral leasing with no surface occupancy.</p> <p>Mineral materials disposals are not allowed within the 100-year floodplain of anadromous fishery streams in the area east of the Sacramento River unless such actions enhance salmonid spawning, riparian vegetation, or semi-primitive recreation opportunities.</p> <p>The majority of the available commercial forest land would be managed as restricted.</p>	<p>Management Direction:</p> <p>The Chappie-Shasta OHV Area SRMA (23,800 acres) would be designated.</p> <p>SRMA boundary would not include the lands with wilderness characteristics area (Chappie-Shasta Subunit 3).</p> <p>In this SRMA, the following activities, experiences, and benefits would be used to guide management actions: Activities: 4x4 Driving, ATV/UTV riding, motorcycle riding, camping, permitted competitive or commercial OHV events</p> <p>Experiences: Developing skills and abilities, enjoying adventure, enjoying friends and family togetherness, enjoying learning and teaching outdoor skills, enjoying access to natural landscapes.</p> <p>Benefits: Greater sense of adventure, stronger ties with family and friends, improved skills for enjoying the outdoors, lifestyle improvement or maintenance, greater community involvement, maintain local tourism, increased desirability as a place to live.</p> <p>Management actions:</p> <ul style="list-style-type: none">• Provide a regional opportunity for motorized recreation.• Acquire available lands that expand legal public access to adjoining public lands, complete segments of recreational trails, enhance protection of sensitive resources, provide opportunities for public interpretation, enhance reforestation efforts (including habitat improvement for sensitive species), or enhance long-term administration of the area.• Develop a trail management plan to provide for the maintenance of existing trails and the expansion of the trail network to provide for additional OHV recreational opportunities, decrease user density, increase variety of difficulty levels, and separate different motorized user groups (including loop trails and trails to scenic or unique areas). This would be completed at the implementation level and would be analyzed and disclosed through site-specific NEPA.• Prioritize development of parking lots at trailheads.• In the Chappie/Shasta OHV Area SRMA, camping would be limited to 14 days per 4-month period. (**)	<p>Management Direction:</p> <p>The Chappie-Shasta OHV Area SRMA (31,100 acres) would be designated.</p> <p>SRMA boundary would include the lands with wilderness characteristics area (Chappie-Shasta Subunit 3) All other management would be the same as Alternative B.</p>	

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
213	<p>Management Direction: Redding RMP 1993 Clear Creek Greenway/Swasey Recreation Area (5,000+acres) <i>Lower Clear Creek and Mule Mountain</i> Enhance non-motorized recreation opportunities by establishing a greenway from the Sacramento River to the Whiskeytown Unit of the National Recreation Area along Clear Creek. Area is managed as Roaded Natural and Semi-Primitive Motorized. Develop an integrated resource activity plan for Clear Creek that identifies high priority land acquisition, details habitat restoration needs for anadromous salmonids, delineates desired plant community and restoration needs for riparian vegetation, describes protective management facilities, lists important cooperators and their responsibilities, identifies important cultural resources, and describes the recreational opportunities for the public.</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: No similar management action.</p>	
214	<p>Management Direction: No similar management action.</p>	<p>Management Direction: Swasey ERMA would be designated (500 acres).</p> <ul style="list-style-type: none"> • Maintain a diverse, sustainable trail system serving multiple non-motorized uses with a focus on mountain biking, while protecting and interpreting heritage resources. • Signage would use a new name for the area: “Swasey Recreation and Heritage Area.” • Recreation development and management may be constrained by other resources within the Swasey ERMA, particularly cultural and heritage resources. • Recreation services would not be emphasized in the same way in the Swasey ERMA as they would be within the Mule Mountain ERMA/SRMA; however, high demand recreation would be allowed to continue within the Swasey ERMA. • No new trail development would occur in the ERMA. • Existing trails in the ERMA would be maintained to promote sustainable, high-quality recreation subject to natural and cultural resource constraints. • Close user-made trails as soon as practicable. • Consider re-routes or closures of existing trails as needed to protect cultural and heritage resources. • Optimized mountain bike trails (trails with mountain bike-specific trail features such as berms and jumps) would be allowed. • To provide safe trail options for equestrian uses, hiker and equestrian use only trails would be allowable where not in conflict with optimized mountain bike trails (i.e., trails with mountain bike-specific trail features such as berms and jumps). • Forethought would be given to facilitating multi-use trails; however, mountain biking would be the priority and dominant recreational use. 	<p>Management Direction: Swasey ERMA would be designated (500 acres). Management would be the same as in Alternative B, with the following exceptions:</p> <ul style="list-style-type: none"> • Minimal trail development may occur in areas of low potential for conflict or impacts to natural or cultural resources. No trail development would be allowed in areas of high potential for conflict or impacts to natural or cultural resources. • There would be no limitations on spectating during competitive SRP events, unless future site-specific implementation level planning determines a need for it. • Trailhead, road, and parking area improvements and expansions would be pursued that are consistent with relevance and importance values of the Swasey ACEC, including expanding the overflow parking and event area. 	

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
214 (cont.)	(see above)	<ul style="list-style-type: none"> • Develop a trail and road monitoring program to gauge impact to sedimentation and cultural resources. • Promote a volunteer trail stewardship program. • SRPs or otherwise authorized uses not requiring a permit would be allowed. • Limitations to SRPs or otherwise authorized uses would be implemented if monitoring indicates adverse impacts to cultural or natural resources in the area. These limitations could include: <ul style="list-style-type: none"> – Limitations on group size – Limitations of number of groups annually – Closure of impacted areas to organized events • SRP capacity levels would be considered in subsequent implementation level planning if needed. • During competitive SRP events, spectating would not be allowed within the ERMA outside of parking lots and roadside areas. • To maintain an accessible environment, the number of large SRP events would be balanced with public demand during peak season. • Maintain trailhead, road, and parking areas in existing footprints. • Provide visitor services to orient users to the mountain bike specific area, promote responsible recreation, educate about cultural resource values, address specific user group needs, and reduce user conflicts. • Provide information on mountain bike difficulty level, ratings, skill requirements, and safety through all platforms. • Provide trail map that is clear to facilitate ease of use and awareness of what is allowed. • Visitor Services would include extensive development of etiquette, guidance, and policy signage. Such information would focus on cultural heritage and recreational uses within the ERMA. • Plan for providing cultural and natural resource information throughout the ERMA, ensuring adequate coverage of resource topics and points of cultural interests to be covered. • Establish an interpretive or educational center to assist the public in understanding the relevance and importance of the area. BLM would collaborate with the Tribes on development and presentation of materials at this center. • Recreation area would be day use only (**). 	(see above)	

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
215	<p>Management Direction: No similar management action.</p>	<p>Management Direction: The Redding Trails ERMA would be designated with four RMZs (9,900 acres).</p> <p>Sacramento River Rail Trail and Keswick Reservoir RMZ:</p> <ul style="list-style-type: none"> • <u>Objective:</u> Continue to provide paved trail experiences and water-based recreation opportunities along the Sacramento River to encourage quality of life for visitors and socioeconomic opportunities for the community. • SRPs for commercial fishing would be evaluated for resource capacity and sustainability. • Work with adjoining landowners to acquire full administrative rights to lands as applicable to optimize management for desired recreational outcomes. • Recreation development may be constrained to meet greater stewardship goals for natural and cultural resources. <p>Clear Creek RMZ:</p> <ul style="list-style-type: none"> • <u>Objective:</u> Provide safe, diverse and sustainable non-motorized trail and water-based recreation opportunities within the riparian corridor of Clear Creek while conserving cultural and natural resources. • Minimize impacts to wildlife and riparian vegetation when providing and improving access to the creek. • Develop interpretive educational materials and signage to provide for safe recreational access and use of the area. This would include information regarding the difficulty of rapids on the creek. • Encourage a developed trail system and promote specific locations for creek access. Promote trail connectivity within the RMZ and to the surrounding area. • Promote collaboration with surrounding landowners to develop trail connectivity. • Improve health and safety in the area through an abundance of education, interpretation, and signage, as well as increased recreation staff, volunteer, and community partner presence. • Due to the sensitive resource area, mountain bike-only trail and equestrian-only trails would not be allowed. • SRPs for commercial guided fishing would not be issued. Public fishing access would continue. • Provide opportunity for large group functions through a reservable day-use area at China Gardens. Reservable day-use may be used for SRPs, or for large groups not requiring a permit. • Recreation development may be constrained to meet greater stewardship goals for natural and cultural resources. <p>Mule Mountain RMZ:</p> <ul style="list-style-type: none"> • <u>Objective:</u> Develop a complete, diverse, sustainable trail system serving multiple use needs with a focus on mountain biking. 	<p>Management Direction: The Redding Trails SRMA would be designated with four RMZs (9,900 acres).</p> <p>Entire SRMA:</p> <ul style="list-style-type: none"> • Acquire available lands that provide legal public access to adjoining public lands, complete segments of recreational trails, enhance protection of sensitive resources, provide opportunities for public interpretation, enhance reforestation efforts (including habitat improvement for sensitive species), or enhance long-term administration of the area. • SRP limitations within all RMZs would be based on level of use and potential for resource impact. BLM would monitor recreational conflict and resource impacts and would limit permits as necessary to maintain long-term resource sustainability and desired recreational experience and outcomes. • Promote a volunteer trail stewardship program. <p>Sacramento River Rail Trail and Keswick Reservoir RMZ: In this RMZ, the following activities, experiences, and benefits would be used to guide management actions:</p> <ul style="list-style-type: none"> • <u>Activities:</u> Cycling and biking, hiking and trail running, motorized and non-motorized water-based activity • <u>Experiences:</u> Developing skills and abilities, perseverance, exercise, stress reduction, enjoying easy access to natural landscapes • <u>Benefits:</u> Increase self-reliance, improved mental and physical health, greater sense of connection to nature and expanded cultural awareness <p>Management Actions:</p> <ul style="list-style-type: none"> • Continue to provide paved trail experiences and water-based recreation opportunities along the Sacramento River to encourage quality of life for visitors and socioeconomic opportunities for the community. • SRPs for commercial fishing would be evaluated for resource capacity and sustainability. • Recreational use would be encouraged to promote socioeconomic development and reach social outcomes of greater sense of connection and cultural awareness within the area. • Work with adjoining landowners to acquire administrative rights to lands as applicable to optimize management for desired recreational outcomes. <p>Clear Creek RMZ: In this RMZ, the following activities, experiences, and benefits would be used to guide management actions:</p> <ul style="list-style-type: none"> • <u>Activities:</u> Day-use access to beaches, non-motorized trail use emphasizing hiking and trail running, wildlife viewing. • <u>Experiences:</u> Stress reduction, relaxation and enjoyment, enjoying easy access to natural landscapes, exercise options close to home • <u>Benefits:</u> Improved mental and physical health, greater sense of connection to others and the natural world <p>Management Actions:</p> <ul style="list-style-type: none"> • Provide safe, diverse and sustainable non-motorized trail and water-based recreation opportunities within the riparian corridor of Clear Creek while conserving cultural and natural resources. • Minimize impacts to wildlife and riparian vegetation when providing and improving access to the creek. • Improve health and safety in the area through an abundance of education, interpretation, and signage, as well as increased recreation staff, volunteer, and community partner presence. • Due to the sensitive resource area, optimized mountain bike trail (trails with mountain bike-specific trail features such as berms and jumps) and equestrian only trails would not be allowed. • SRPs for commercial guided fishing would not be issued. SRPs (except commercial fishing) and organized groups not requiring a permit would be allowed and encouraged to promote socioeconomic development and reach social outcomes of greater sense of connection. <p>Mule Mountain RMZ: In this RMZ, the following activities, experiences, and benefits would be used to guide management actions:</p> <ul style="list-style-type: none"> • <u>Activities:</u> primarily mountain biking as well as hiking, trail running, and equestrian use. • <u>Experiences:</u> Mountain bike skill development, endurance and physical fitness, stress reduction, sense of community, expansion of cultural awareness. • <u>Benefits:</u> Improved sense of self-reliance, improved skills for outdoor enjoyment, improved physical and mental health, social cultural enrichment and connection, socioeconomic benefit to the surrounding area through tourism and local engagement. 	

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
215 (cont.)	(see above)	<ul style="list-style-type: none"> Optimized mountain bike trails (trails with mountain bike-specific trail features such as berms and jumps) would be allowed. To provide safe trail options for equestrian uses, hiker and equestrian use only trails would be allowable where not in conflict with optimized mountain bike trails (i.e., trails with mountain bike-specific trail features such as berms and jumps). Forethought would be given to diverse user groups in the planning of the overall trail system, and mountain biking would be the priority/dominant recreational use. Recreation development and management may be constrained by other resources within the Mule Mountain area at any time. Recreation services would be put forward to meet high recreational demand and may continue in a high-profile manner. Maintenance of parking areas, trailheads, and roads would continue in the existing footprints. Develop a trail and road monitoring program to gauge impact to sedimentation and cultural resources. Promote a volunteer trail stewardship program. SRPs and organized group uses not requiring a permit would be allowed. Limitations to SRPs and organized groups would be implemented if monitoring indicates adverse impacts to cultural or natural resources in the area. These limitations could include: <ul style="list-style-type: none"> Limitations on group size Limitations of number of groups annually Closure of impacted areas to organized events SRP capacity levels would be considered in subsequent implementation level planning if needed. During competitive SRP events, spectating would not be allowed within the ACEC outside of parking lots, and roadside areas. Spectating would be allowed outside the ACEC. To maintain an accessible environment, the number of large SRP events would be balanced with public demand during peak season. Provide visitor services to orient users to the mountain bike specific area, promote responsible recreation, educate about cultural resource values, address specific user group needs, and reduce user conflicts. Provide information on mountain bike difficulty level, ratings, skill requirements, and safety through all platforms. Maintain trails and close user-made trails as soon as practicable. Provide trail map that is clear to facilitate ease of use and awareness of what is allowed. 	<p>Management Actions:</p> <ul style="list-style-type: none"> Develop a diverse sustainable trail system serving multiple use needs with a focus on mountain biking. Optimized mountain bike trails (trails with mountain bike-specific trail features such as berms and jumps) would be allowed. To provide safe trail options for equestrian uses, hiker and equestrian use only trails would be allowable where not in conflict with optimized mountain bike trails. Forethought would be given to facilitating multi-use trails however, mountain biking would be the priority and dominant recreational use. Mitigate cumulative impacts of a high demand SRMA near the Swasey ERMA through limitations within the Swasey ERMA, as described above. Pursue expanding overflow and event parking. In the SRMA, pursue trailhead, road, and parking area improvements and expansions as necessary to meet user needs and with consideration of the management of the adjoining Swasey ERMA. Provide recreational opportunities to encourage socioeconomic development and reach social outcomes of greater sense of connection and cultural awareness within the area. Limitations to SRPs or otherwise authorized uses would be implemented if monitoring indicates adverse impacts to cultural or natural resources in the area. These potential future limitations could include: <ul style="list-style-type: none"> Limitations on group size Limitations of number of groups annually Closure of impacted areas to organized events Capacity levels would be considered in subsequent implementation level planning if needed. There would be no limitations on spectating during competitive SRP events, unless future site-specific implementation level planning determines a need for it. To maintain an accessible environment, the number of events would be balanced with public demand during peak season. Provide visitor services to orient users to the mountain bike specific area, promote responsible recreation, educate about cultural resource values, address specific user group needs, and reduce user conflicts. Provide information on mountain bike difficulty level, ratings, skill requirements and safety through all platforms. Maintain trails and close user-made trails. Provide trail map that is clear to facilitate ease of use and awareness of trail location and type. Visitor Services would include extensive development of etiquette, guidance, and policy signage. Such information would focus on cultural heritage and recreational uses within the Mule Mountain RMZ. Promote the area in coordination with the City of Redding and other partners. Plan for providing cultural and natural resource information throughout the SRMA, ensuring adequate coverage of resource topics and points of cultural interests to be covered. Recreation area would be day use only. (**) Explore expanded amenity fee camping in the area, for example, along Mule Mountain Road. Consider developing a small campground along Mule Mountain Road with fee amenities. (**) <p>Community Trails RMZ: In this RMZ, the following activities, experiences, and benefits would be used to guide management actions:</p> <ul style="list-style-type: none"> <u>Activities</u>: Mountain biking, hiking, trail running, and equestrian use <u>Experiences</u>: Developing skills and abilities, perseverance, exercise, stress reduction, enjoying easy access to natural landscapes, expansion of cultural awareness <u>Benefits</u>: Increase self-reliance, improved mental and physical health, greater sense of connection to nature and community, community connectivity <p>Management Actions:</p> <ul style="list-style-type: none"> Develop a complete, diverse, and sustainable multi-use trail system to increase individual well-being, sense of community, and to promote connectivity and socioeconomic opportunities. Provide for connectivity to other trails and features in the Redding area. 	

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
215 (cont.)	(see above)	<ul style="list-style-type: none">• Visitor Services would include extensive development of etiquette, guidance, and policy signage. Such information would focus on cultural heritage and recreational uses within the Swasey ACEC and Mule Mountain RMA.• Plan for providing cultural and natural resource information throughout the ERMA, ensuring adequate coverage of resource topics and points of cultural interests to be covered.• Establish an interpretive or educational center to assist the public in understanding the relevance and importance of the ACEC. BLM would collaborate with the Tribes on development and presentation of materials at this center.• Recreation area would be day use only. Mule Mountain Road area would be day use only. (**) <p>Community Trails RMZ:</p> <ul style="list-style-type: none">• <u>Objective:</u> Develop a complete, diverse, and sustainable multi-use trail system to increase individual well-being, sense of community, and to promote connectivity and socioeconomic opportunities.• Provide for connectivity to other trails and features in the Redding area.• Provide a diversity of trail and nature experiences, including wildlife viewing and swimming hole access.• Trail planning would emphasize multi-use trail and equity among user groups.• Optimized mountain bike trails (i.e., trails with mountain bike-specific trail features such as berms and jumps) and equestrian and hiker-only trails would be permissible where uses are not in conflict and do not prohibit free flowing use of connected multi-use trail.• Promotion of community engagement in stewardship of trails and cultural and natural resources conservation through volunteer and partner engagement.• Recreation development may be constrained to meet greater stewardship goals for natural and cultural resources.	<ul style="list-style-type: none">• Provide a diversity of trail and nature experiences, including wildlife viewing, and swimming hole access.• Trail planning would emphasize multi-use trail and equity among user groups.• Optimized mountain bike trail and equestrian and hiker only trails would be permissible where uses would not be in conflict and would not prohibit free flowing use of connected multi-use trail.• Promote community participation in stewardship of trails and in cultural and natural resources conservation through volunteer and partner engagement.• Sign planning for cultural resource information throughout the RMZ would ensure adequate coverage of resource topics and points of cultural interest.• SRPs and organized groups not requiring a permit would be allowed and encouraged to promote socioeconomic development and reach social outcomes of greater sense of connection and cultural awareness within the area.	

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
216	<p>Management Direction: No similar management action.</p>	<p>Management Direction: The Iron Mountain Target Shooting Area would not be managed as a SRMA.</p>	<p>Management Direction: The Iron Mountain Target Shooting Area would be managed as a SRMA (600 acres). In this SRMA, the following activities, experiences, and benefits are used to guide management actions:</p> <ul style="list-style-type: none"> • <u>Activities</u>: Target shooting • <u>Experiences</u>: Improving skills and abilities, increasing awareness for firearm safety, sharing outdoor activity with friends and family, easy access to outdoors • <u>Benefits</u>: Increase self-reliance, improved skills for outdoor enjoyment, stronger ties with family and friends, enlarged understanding of personal responsibility to help care for community and keep it clean, economic benefits to local retailers and small businesses <p>Management Actions:</p> <ul style="list-style-type: none"> • Develop an implementation level plan for managing the shooting range. This plan would include facilities and shooting range operating practices to provide for a safe recreational experience while protecting natural and cultural resources. • Improve target shooting opportunities and allow for greater development of gun safety capacity and awareness, gun skills and abilities, and awareness of wildfire safety while shooting • Develop shooting range facilities (backstops, etc.) to provide for a safe shooting environment and in accordance with resource protection and stewardship goals. (**) • As applicable, pursue partnerships and/or stewardship opportunities with governmental or non-governmental organizations to assist in developing and managing the shooting range. • Continue to provide Shooting Range SRPs, balancing easy public access with commercial, organized group and event interests. • Prioritize hazardous fuel reductions at the Shooting Range, maintaining hazardous fuel reductions on a 1-3 year cycle at the shooting range. • Require the use of non-toxic ammunition for all shooting and/or develop backstop containment and require non-toxic skeet and trap shooting. (**) 	
217	<p>Management Direction: Arcata RMP Samoa Amendment 1995 Samoa Peninsula MA</p> <ul style="list-style-type: none"> • Entire management area is closed to firearm and crossbow/bow shooting. • Federal Register notices for OHV designations: Vehicles limited to daytime access, with nighttime gate closure one hour after sunset, and reopened daily one hour before sunrise. (completed) • Continue to work with local governments in the management of the entire peninsula. <p>Samoa Dunes</p> <ul style="list-style-type: none"> • Provide opportunities for off-road vehicle recreation. • Provide opportunities for hiking, sightseeing, bird watching, picnicking, surfing, fishing that do not directly conflict with OHV use. • Provide opportunities for OHV recreation by maintaining and improving OHV facilities and trails. • Continue to apply for “Green Sticker” funding. • Maintain and improve OHV park (staging area, riding trails, etc.) at Samoa Dunes • Prepare a Samoa Dunes Recreation Area Management Plan (completed) 	<p>Management Direction: The Samoa Dunes would be designated as an ERMA providing for coastal recreation for both motorized and non- motorized recreational use. The ERMA would be managed the same as Alternative A, with the following additions:</p> <ul style="list-style-type: none"> • Areas would be designated for both OHV use and non-motorized uses such as hiking, sightseeing, bird watching, picnicking, surfing, fishing. • Identify areas closed to OHVs to prioritize non- motorized access for bird watching, surfing, picnicking, and other coastal recreational activities. • Interpretation and education of natural and cultural resources unique to Samoa Dunes would be prioritized. 	<p>Management Direction: The Samoa Dunes would be designated as a SRMA for OHV recreational use. In this SRMA, the following activities, experiences, and benefits are used to guide management actions:</p> <ul style="list-style-type: none"> • <u>Activities</u>: 4x4 driving, ATV/UTV riding, motorcycle riding, surfing, fishing, hiking, picnicking, wildlife viewing • <u>Experiences</u>: Escape everyday responsibilities, developing skills and abilities, enjoying risk taking and adventure, enjoy frequent access to physical activity, enjoying friends and family togetherness, enjoying learning and teaching outdoor skills, enjoying access to natural landscapes • <u>Benefits</u>: Greater sense of adventure, stronger ties with family and friends, improved skills for enjoying the outdoors, lifestyle improvement or maintenance, greater community involvement, maintain local tourism, increased desirability as a place to live <p>Management Actions: The SRMA would be managed the same as Alternative A, with the following additions:</p> <ul style="list-style-type: none"> • Interpretation and education of natural and cultural resources unique to Samoa Dunes would be prioritized. 	

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
218	<p>Management Direction: Redding RMP 1993 Forks of Butte Creek SRMA (2,200 acres)</p> <ul style="list-style-type: none"> • Maintain semi-primitive recreation opportunities (ROS) • Manage as Semi-Primitive Motorized. (ROS) • Recreational mineral collection is permitted within the canyon. • Acquire available, unimproved lands to protect scenic quality and enhance the recreational experience. • Vehicle use is limited to designated roads and trails. 	<p>Management Direction: Forks of Butte Creek would be designated as an ERMA.</p> <ul style="list-style-type: none"> • <u>Objective:</u> Recreation opportunities will be provided for sustainable casual use (recreational) mining (as defined in 43 CFR 3809), creek access, and multiple-use trails, maintaining a predominantly undisturbed natural landscape. • The ERMA would be day use only. (**) • Facilities for a day-use area would be developed. (**) • Motor vehicle access to a day use area would be seasonally closed. A gate and/or barriers would be installed and maintained. All trail development and barriers would be analyzed and disclosed through site- specific implementation-level NEPA. • Develop sustainable opportunities for casual use (recreational, as defined in 43 CFR 3809) level gold prospecting through non-motorized trail access. Motorized trail development is not allowed. Equestrian and mountain bike trail options may be limited to avoid resource impacts. • Develop signage to indicate specific areas where casual use (recreational, as defined in 43 CFR 3809) mining is not allowed due to conflicts with other resources. These could include (but may not be limited to) areas with significant and/or sensitive cultural and natural resources or recreational facilities. • Promote recreational opportunity in balance with cultural resources, winter wildlife habitat, riparian areas, and the fishery along Butte Creek. • Prioritize trail maintenance and development to allow for non-motorized access and recreational use within the ACEC. • Unauthorized trail construction, motorized or non-motorized including any user made mountain bike feature, is not allowed, and would be remediated. • Equitable access to casual use mining (as defined in 43 CFR 3809) will be provided. This includes development of 45" wide low-gradient pathways into popular casual use mining (as defined in 43 CFR 3809) areas where feasible. • Issuance of SRPs or authorization of group use that does not require a permit within Forks of Butte ERMA is allowed but may be constrained by other resources to promote sustainability and prevent resource damage. This would be determined on a case-by-case basis. • Prioritize obtaining easements from landowners to obtain administrative and public access. 	<p>Management Direction: Forks of Butte Creek would be designated as an ERMA.</p> <ul style="list-style-type: none"> • <u>Objective:</u> Recreation opportunities will be provided for sustainable casual use (recreational) mining (as defined in 43 CFR 3809), creek access, and multiple-use trails, maintaining a predominantly undisturbed natural landscape. • The ERMA would be day use only. (**) • Explore developing a designated, expanded amenity fee campground and restricting motorized access beyond the designated campground. Details of this campground would be considered and analyzed with site-specific implementation level NEPA. (**) • Explore developing cooperative management of the campground with other agencies or organizations where possible. • Motor vehicle access to the campground would be seasonally closed. A gate and/or barriers would be installed and maintained. The campground, trail development and barriers would be analyzed and disclosed through site-specific implementation-level NEPA. • Develop sustainable opportunities for casual use (recreational, as defined in 43 CFR 3809) level gold prospecting through non-motorized trail access. Motorized trail development is not allowed. Equestrian and mountain bike trail options may be limited to avoid resource impacts. • Develop signage to indicate specific areas where casual use (recreational) mining (as defined in 43 CFR 3809) is not allowed due to conflicts with other resources. These could include (but may not be limited to) areas with significant and/or sensitive cultural and natural resources or recreational facilities. • Promote recreational opportunity in balance with cultural resources, winter wildlife habitat, riparian areas, and the fishery along Butte Creek. • Prioritize trail maintenance and development to allow for non-motorized access and recreational use within the ACEC. • Unauthorized trail construction, motorized or non-motorized including any user made mountain bike feature, is not allowed, and would be remediated. • Equitable access to casual use mining (as defined in 43 CFR 3809) will be provided. This includes development of 45-inch wide low-gradient pathways into popular casual use mining (as defined in 43 CFR 3809) areas where feasible. • Issuance of SRPs or authorization of group use that does not require a permit within Forks of Butte ERMA is allowed but may be constrained by other resources to promote sustainability and prevent resource damage. This would be determined on a case-by-case basis. • Prioritize obtaining easements from landowners to obtain administrative and public access. 	<p>Management Direction: Same as Alternative B.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
219	Management Direction: Arcata RMP Forest Plan Amendment 1995 Lacks Creek Management Area <ul style="list-style-type: none"> Public lands are available for dispersed recreation. Sign entrance to public lands regarding OHV designations. Post boundaries. 	Management Direction: Lacks Creek would be designated as an ERMA and would be managed the same as Alternative A, with the following additions: <ul style="list-style-type: none"> Objective: Through recreation program management and stakeholder involvement, provide outstanding opportunities for non-motorized trail based recreation, dispersed camping and continue to contribute to the local community's quality of life commensurate with wildlife habitat, prairie restoration, hunting, forest health, and aesthetic values. Dispersed camping would be allowed. Acquire lands to provide public vehicle access on the west side of Lacks Creek. Coordinate with landowners to extend the trail network to Redwood National Park, Tribal, and to Forest Service-administered lands. Cooperative management with local non-motorized trail groups supports non-motorized recreation trail activities (e.g., mountain biking, hiking, equestrian) commensurate with prairie restoration and hunting. Allow Class I E-bikes on designated routes. Continuously improve and maintain existing trails while considering opportunities to develop new trails. Designate or restrict specific areas from target shooting as necessary to reduce conflict, preserve public health and safety and natural resource values. Consider connecting east side trail system with west side trail system. In order to avoid conflicts between mountain biking and hunting, ensure interpretive materials (signage, kiosks, brochures) educate recreationists regarding hunting as a use of the ERMA. Sign entrance to public lands regarding OHV designations. Post boundary signs. 		
220	Management Direction: Arcata RMP Samoa Amendment 1995 Manila Dunes (Ma-le'l dunes CMA) <ul style="list-style-type: none"> Enhance natural values and dune ecosystem. Facilitate research and educational uses of unique dune ecosystems. Provide opportunities for other non-consumptive recreational uses (hiking, sightseeing, bird watching, picnicking). Patrol for OHV trespass in Manila Dunes area. Provide opportunities for hiking, sightseeing, bird watching, picnicking.Samoa Dunes Land Use Plan Amendment 1995 and Supplementary Rules Closed to all off-road vehicle use. Vehicles limited to daytime access, with nighttime gate closure one hour after sunset, and reopened daily one hour before sunrise. Vegetative gathering is prohibited between Nov 1 and May 1 Use of firearms and archery equipment prohibited. Monitor botanical and cultural resources; protect sensitive species according to the BLM Sensitive Species Policies (BLM Manual Section 6840). Threatened and endangered species management will follow Section 7 consultation procedures in accordance with the Endangered Species Act. Conduct dune restoration and exotic plant removal. 	Management Direction: Ma-le'l Dunes would not be designated as an ERMA and would be managed the same as Alternative A.	Management Direction: Ma-le'l Dunes would be designated as an ERMA and would be managed the same as Alternative A, with the following additions: <ul style="list-style-type: none"> Objective: Provide recreation opportunities and coastal access in a unique dune environment that is close to the population centers of Arcata and Eureka, while also prioritizing dune habitat restoration and protection of endangered plant species and aesthetic values. Closed to mechanized and motorized vehicles (**) Day use only (**) Pedestrian and equestrian use limited to designated trails to protect sensitive plant and animal habitat. Dogs under voice control are allowed at Ma-le'l South. Parking areas may need to be modified in the future to accommodate increased use and shifting sand dunes. 	

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
221	<p>Management Direction: Arcata RMP 1992 and Supplementary Rules South Spit South Spit</p> <ul style="list-style-type: none"> Public lands are available for dispersed recreation. Area is open for day use only 1 hour before sunrise to 1 hour after sunset). During brant season, gate opens at 4:00 am. Day use only No OHVs allowed except on vehicle access corridors and wave slope. No vehicles on wave slope within plover restoration area during plover season. Dogs must be leashed on west side of Jetty Road during plover season. No public use in plover restoration area during plover season. Kites, model airplanes, and campfires not allowed within 300 feet of temporary or permanent plover protection areas. Lands on west side of Jetty Road open to equestrian use; all other lands closed to equestrian use. Firewood cutting or collecting is allowed by permit from Sept. 16 – Feb. 28. Casual collecting is allowed year-round. Firearm use is allowed only for hunting of waterfowl during State season. Target shooting is not allowed. Fireworks are not allowed. 	<p>Management Direction: The Mike Thompson Wildlife Area, South Spit, Humboldt Bay would not be designated as an ERMA. The area would be managed the same as Alternative A, with the following additions:</p> <ul style="list-style-type: none"> No UAVs would be allowed within 300 feet of temporary or permanent plover protection areas. (**) OHV wave slope access may be restricted on a case-by-case basis as necessary to protect nesting plovers and/or plover habitat. 	<p>Management Direction: The Mike Thompson Wildlife Area, South Spit¹, Humboldt Bay would be designated as an ERMA. The ERMA would be managed the same as Alternative A, with the following additions:</p> <ul style="list-style-type: none"> Objective: Through collaboration with stakeholders and partners, provide outstanding recreation opportunities and continue to contribute to the local community's quality of life and is commensurate with protecting wildlife habitat, hunting, dune restoration, endangered species protection and aesthetic values. No UAVs would be allowed within 300 feet of temporary or permanent plover protection areas. (**) OHV wave slope access may be restricted on a case-by-case basis as necessary to protect nesting plovers and/or plover habitat. Vehicles limited to daytime access, 1 hour before sunrise to 1 hour after sunset. (**) 	<p>Management Direction: The Mike Thompson Wildlife Area, South Spit, Humboldt Bay would not be designated as an ERMA. The area would be managed the same as Alternative A, with the following additions:</p> <ul style="list-style-type: none"> Continue to allow access for dispersed recreation opportunities such as fishing, hunting, and clamming while protecting sensitive wildlife, vegetation, natural dune processes, and cultural values. Aircraft and UAVs are prohibited without a Special Use Permit per CDFW regulations. Vehicle wave slope access may be restricted on a case-by-case basis as necessary to protect nesting plovers and/or plover habitat. Plover nesting season is from March 1- Sept 15. <p>See ACEC section for additional management decisions</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
222	<p>Management Direction: Redding RMP 1993 Sacramento River MA <u>Sacramento River Bend Area</u> Provide semi-primitive recreation opportunities. (ROS) Manage as Semi-Primitive Motorized. (ROS) Manage as Semi-Primitive Motorized and Roaded Natural <u>Sacramento Island Area</u> The area is closed to motorized vehicles. Manage as Semi-Primitive Motorized. <u>Cottonwood Creek and Sacramento River parcels</u> Parcels are closed to motorized vehicle use. Manage as Semi-Primitive Motorized (to allow boat access).</p>	<p>Management Direction: Sacramento River Bend would not be designated as an ERMA.</p>	<p>Management Direction: Sacramento River Bend would be designated as an ERMA:</p> <ul style="list-style-type: none"> • The Sacramento River Bend will offer a diversity of sustainable, multi-use non-motorized trails (for example, hiking and equestrian use trails). Additionally, hunting, camping, and wildlife viewing opportunities will be provided in tandem with natural and cultural resource conservation. • Trail development will only occur where resource impacts may be sufficiently mitigated or avoided and where development is consistent with natural and cultural resource management and provides enhanced recreational experience. • Eliminate redundant trails and provide for a planned trail system with well-designed connections. • Use equestrian design standards as well as standard multi-use guidance to promote trail sustainability. • Identify and authorize as part of trail system high-use water access points for watering horses. Ensure these access points can be maintained long-term, are safe for users, and consistent with natural and cultural resource management. • Mountain bike only and optimized mountain bike trails (trails with mountain bike-specific trail features such as berms and jumps) are not allowed. • Trail closures would occur when needed to protect public health and safety and natural and cultural resources. • As needed, identify areas within the ERMA where no trails would be developed to retain the relevance and importance values of the ACEC. • Additional trail development opportunities would be considered only when consistent with lands with wilderness characteristics management, VRM class II designation, and relevance and importance values of the ACEC where each standard is applicable. • Prioritize a safe and sustainable environment for day-users. • Camping is prohibited within 0.25 miles of roads in the Sacramento Bend ERMA. (**) • Backpackers must camp only within the area open to camping. Backpackers must camp at least 50 feet from the trail. (**) • Continue to allow designated dispersed camping in the Massacre Flat area. • Provide safe and sustainable opportunities for hunting and fishing. • Maintain recreational fishing and hunting access, while promoting wetlands conservation. • Limit target shooting to designated areas. Engage with community to determine designated shooting areas. Identification of those areas would be analyzed and disclosed through subsequent implementation-level NEPA. • Provide extensive visitor services to promote stewardship goals and minimize impacts. • Sign planning for cultural resource information throughout the ERMA will ensure adequate coverage of resource topics and points of cultural interests. • Provide signage and education regarding resource stewardship rules and ethics to provide visitors with a clear understanding of rules and how they relate to resource management. • SRPs and organized groups not requiring a permit are allowed when compatible with natural and cultural resource management. • Limit SRP and organized group uses to minimize resource impacts to the relevant and important values of the ACEC in spring and fall. These potential future limitations could include: <ul style="list-style-type: none"> – Limit group size – Limit the number of groups annually – Closure of impacted areas to organized events • Explore fee-based camping opportunities based on public demand and to meet diverse user group needs, including general recreation and equestrian uses, while also protecting relevance and importance values of the ACEC. 	

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
223	<p>Management Direction: Redding RMP 1993 Trinity River Modify the existing TRRAMP to reflect the designated corridor of the Trinity River (i.e., "a "Recreatio"al" component of the National WSR System.) Continue implementation of recreational developments and monitoring prescribed in the existing management plan. Manage all public lands within the corridor as Roaded Natural or Semi-Primitive Motorized. (ROS) Maintain existing Recreation Opportunity Spectrum classes. (ROS) Enhance recreation opportunities related to use of the Trinity River including mineral collection. Interpret and protect key cultural and natural resources for the public including the Helena/Bagdad Townsite, Rush Creek, Montana Cabin and Salt Flat. North of Trinity River/Deadwood/Indian Creek Maintain existing Recreation Opportunity Spectrum classes. Provide enhanced access for semi-primitive motorized recreation opportunities and to Native American Indian heritage resources. (ROS)</p>	<p>Management Direction: The Trinity River would not be designated as an ERMA.</p>	<p>Management Direction: The Trinity River would be designated as an ERMA:</p> <ul style="list-style-type: none"> • Objective: The Trinity River ERMA provides diverse and sustainable water-based recreation, non-motorized trail opportunities and camping where impacts to cultural and natural resources, river health and fish populations can be sufficiently mitigated. • Optimized mountain bike trail (trails with mountain bike-specific trail features such as berms and jumps) and equestrian only trails are not allowed in riparian areas. Impacts from bikes and horses will be monitored in the riparian area. • Maintain a predominantly natural landscape while promoting fishing access, non-motorized trails, expanded amenity fee campgrounds, dispersed camping, and additional water-based recreation opportunities. • Expanded amenity fee campgrounds will be utilized to meet camping demand to minimize impacts to river health. • Monitor day use areas and river segments for impacts to river health from commercial and non-commercial use. If adverse impacts are seen, carrying capacity could be established through site specific implementation level planning. • SRPs and organized groups not requiring a permit will be allowed. Authorized uses, such as commercial fishing, will be monitored and managed to reduce impacts specific to the WSR ORV of fish and fish habitat. • Recreational development and restoration projects in the ERMA will be evaluated for recreational impacts, including impacts to SRP holders. • Sign planning for natural and cultural resource information throughout the ERMA will ensure adequate coverage of resource topics and points of cultural interest. 	
224	<p>Management Direction: No similar action</p>	<p>Management Direction: The Ewing Area would not be designated as an ERMA.</p>	<p>Management Direction: The Ewing Area would be designated as the Ewing Trails ERMA. The ERMA would be managed as follows:</p> <ul style="list-style-type: none"> • Objective: The Ewing Trails ERMA provides a sustainable and diverse multi-use trail system, where multi-use trails are emphasized, and specialized trails may be allowed. Recreation and visitor services promote natural and cultural resource understanding, resource conservation and stewardship goals, while allowing for socioeconomic development and a high quality of life for the Hayfork community. • Implement a complete, sustainable multi-use trail system for hiking, bicycling, and equestrian use beginning from the Ewing Reservoir area. • Consider connectivity beyond the scope of BLM parcels in trail development. • Optimized mountain bike trails (trails with mountain bike-specific trail features such as berms and jumps), equestrian and hiker only trails are allowed where uses do not conflict. • Forethought would be given to a complete trail system, where equity among user groups is prioritized. • Maintain long term commitments and relationships with trails partners, Tribes, and adjacent landowners for cooperative planning of trails and recreation area developments and building and maintenance of the trail system. Promote volunteer engagement in coordination with partners. 	
225	<p>Management Direction: No similar action</p>	<p>Management Direction: The Weaverville Community Forest (WCF) would not be designated as an ERMA.</p>	<p>Management Direction: The WCF would be designated as an ERMA (3,100 acres).</p> <ul style="list-style-type: none"> • Objective: Support recreational opportunity enhancement within the WCF as appropriate with respect to natural and cultural resources to increase quality of life and promote socioeconomic development within the area. • The ERMA would be day use only, in accordance with the existing County ordinance. <p>Work collaboratively with the WCF Steering Committee, partners, and Tribes to facilitate recreational development.</p>	
226	<p>Other Recreation Management</p>			
227	<p>Management Direction: Ishi Management Area Upper Ridge Nature Preserve Maintain existing semi-primitive recreation opportunities in cooperation with the Upper Ridge Wilderness Association.</p>	<p>Management Direction: The Upper Ridge Nature Preserve would remain closed to motorized vehicles. BLM would work with community partners on management of the area. The area is identified for disposal.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
228	Management Direction: No similar management action.	Management Direction: Little Darby Area The Little Darby Area (910 acres) would continue to be managed as it is currently managed.	Management Direction: Little Darby Area <ul style="list-style-type: none">If determined to be compatible with resource protection of the area, consider proposals to expand mountain bike trails and interpretive displays.	
229	Management Direction: No similar management action.	Management Direction: Little Dann Area Do not develop the Little Dann Area.	Management Direction: Little Dann Area <ul style="list-style-type: none">If determined to be compatible with resource protection of the area, consider proposals in the area for developing additional OHV routes, hiking trails, and mountain biking trails.Limit OHV use to existing routes and designated routes.	
230	Management Direction: No similar management action.	Management Direction: Cline Gulch near French Gulch <ul style="list-style-type: none">Day use only (**)Campfires prohibited (**)	Management Direction: Cline Gulch near French Gulch <ul style="list-style-type: none">Camping would be restricted to designated dispersed camping areas. (**)	Management Direction: Same as Alternative B.
231	Management Direction: Arcata RMP Forest Plan Amendment 1995 Acquire 800 acres around Gilham Butte for recreational uses. Protect and enhance natural and recreational values along the federally designated portions of the South Fork Eel River WSR corridor. Public lands are available for dispersed recreation. (There are some restrictions on recreational uses within the Elder Creek ACEC.) Complete Federal Register notices for amended OHV designations. Improve recreational opportunities between Humboldt Redwoods State Park and King Range National Conservation Area. Protect and enhance natural and recreational values along the federally designated portions of the Eel and Van Duzen Rivers' Wild and Scenic River corridors. Public lands are available for dispersed recreation. Develop a connecting trail system through Humboldt Redwoods State Park, Gilham Butte, and King Range National Conservation Area. Complete Federal Register notices for amended OHV designations.	Management Direction: No similar management action.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
232	<p>Management Direction:</p> <p>Arcata RMP 1992</p> <p>Butte Creek MA Sign entrance to public lands regarding OHV designations. Post boundaries.</p> <p>King Range Vicinity MA Public lands are available for dispersed recreation.</p> <p>Covelo Vicinity MA Public lands are available for dispersed recreation. Protect and enhance natural and recreational values along the federally designated portions of the main stem, North and Middle forks of the Wild and Scenic Eel River Corridor. Outstanding and remarkable attributes include anadromous fisheries, scenic quality and recreational values. Complete management plans for the main stem and North and Middle Forks of the Eel River utilizing an interagency cooperative management planning approach. Provide interim management protection to these river corridors until plans are completed.</p> <p>Red Mountain MA Enhance the natural values within the Northern California Coast Range Preserve. Sign entrance to public lands regarding OHV designations. Post boundaries. Complete a South Fork Eel River Management Plan Public lands are available for dispersed recreation. (There are some restrictions on recreational uses within the NCCRP which still apply--no shooting, hunting, or fishing, camping, equestrian use.)</p> <p>Scattered Tracts MA Enhance natural values and provide opportunities for environmental education. Acquire public access into Eagle Peak for recreational and educational uses. Complete management plans for the Eel and Van Duzen Rivers utilizing an interagency cooperative management planning approach. Provide interim management protection to these river corridors until plans are completed.</p>	<p>Management Direction:</p> <p>No similar management action.</p>		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
233	<p>Management Direction: Redding RMP 1993 Ishi MA <u>Battle Creek (Below Manton Road)</u> Improve semi-primitive recreation opportunities. (ROS) Manage the area as Semi-Primitive Motorized. (ROS) <u>Deer Creek</u> Maintain the primitive recreation opportunities within the canyon. (ROS) Manage as Semi-Primitive Non-Motorized. (ROS)</p> <p>Klamath MA <u>Shasta and Klamath River Canyons:</u> Enhance non-motorized recreation opportunities. Manage the area as Roaded Natural. Develop an integrated resource activity plan for the Klamath River below RM 181 and the Shasta River Canyon that identifies high priority land acquisitions, designates appropriate roads and trails for recreational access, identifies management facility needs to protect the ACEC and riparian zone, and cooperative actions with adjacent landowners.</p> <p><u>Upper Klamath River:</u> Improve semi-primitive non-motorized recreation opportunities. Manage as semi-primitive non-motorized ROS. Manage area as semi-primitive motorized.</p> <p><u>Shasta Valley Wetlands</u> Provide semi-primitive non-motorized recreation opportunities.</p> <p>Sacramento River MA <u>Hawes Corner</u> Area is closed to vehicles. Quartz Hill (under cooperative management): Provide semi-primitive recreation opportunities.</p> <p>Trinity MA <u>Grass Valley Creek Watershed</u> Manage as semi-primitive motorized.</p> <p>Shasta MA <u>West of French Gulch</u> Manage as Roaded Natural and Semi-Primitive Motorized.</p> <p><u>Lower Clear Creek and Mule Mountain</u> Area is managed as Roaded Natural and Semi- Primitive Motorized.</p>	<p>Management Direction: No similar management action.</p>		
234	Travel and Transportation Management¹			
235	<p>Goals and Objectives: No similar goals and objectives.</p>	<p>Goals and Objectives:</p> <ul style="list-style-type: none">• Designate travel and transportation systems to be consistent with commercial, social and environmental needs.• Develop new trails or connections between trails for motorized and non-motorized users.• Consider opportunities to connect with regional trail networks.• Provide for a full range of public resource management and administrative access needs.• Provide for travel management consistency as it pertains to neighboring federal agencies’ public lands.		

¹ Two travel management areas are proposed for the planning area, the Arcata FO and the Redding FO. When implementation level travel management planning is completed, additional travel management area divisions may be identified based on available resources, input from the public, and current priorities.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
236	<p>Management Direction:</p> <p>Arcata RMP Forest Plan Amendment 1995 Designate approximately 86,000 acres in the plan amendment area and the Pine Ridge Road and maintained spur roads as limited to provide protection against soil erosion, compaction, and water quality degradation that could result from cross-country vehicle use.</p> <p>Covelo Vicinity MA Close a total of 13,069 acres (7,009 acres in the BLM portion of the Yolla-Bolly/Middle Eel Wilderness and 6,060 acres in the Middle Fork Eel River corridor) to vehicle use and limit vehicle use to transportation facilities designed for highway vehicles having four or more wheels on 53,431 acres in the rest of the Covelo Vicinity Management Area to provide protection against soil erosion and compaction that could result from cross-country vehicle use.</p> <p>Red Mountain MA Close a total of 18,882 acres to vehicle use [in the Red Mountain ACEC (6,895 acres), Elder Creek RNA/ ACEC (3,775 acres), and South Fork Eel River WSR corridor (8,212 acres)] and limiting vehicle use to transportation facilities designed for highway vehicles having four or more wheels on 16,782 acres in the rest of the South Fork Eel River Management Area to provide protection against soil erosion and compaction that could result from cross-country vehicle use.</p> <p>Scattered Tracts MA Close isolated parcels (approximately 320 acres) in the Van Duzen, main stem Eel, and Klamath Rivers designated WSR corridors and limit vehicle use to transportation facilities designed for highway vehicles having four or more wheels on 15,785 acres in the rest of the Scattered Tracts Management Area to provide protection against soil erosion and compaction that could result from cross-country vehicle use.</p>	<p>Management Direction:</p> <p>No similar management action.</p>	<p>Management Direction:</p> <p>No similar management action.</p>	<p>Management Direction:</p> <p>No similar management action.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
237	Management Direction: Redding RMP 1993 Shasta MA <u>Swasey Drive Area</u> Follow the Swasey Drive Area Implementation Plan. The threshold for damage to soils or other resources is more than 20 off road vehicle intrusions per year off designated routes, noticeable damage to archaeological sites or features, or more than 1,000 square feet of surface disturbance per year. <u>Clear Creek Uplands</u> BLM-administered roads and trails within the zone of decomposed granite-derived soils are closed to vehicle use during the rainy season and could be closed on a year-round basis at the discretion of the BLM to protect the resource values of these erosion sensitive areas. Trinity MA BLM-administered roads and trails within the zone of decomposed granite-derived soils are closed to vehicle use during the rainy season and could be closed on a year-round basis at the discretion of the BLM. Also, soil disturbing activities would be conducted only when no new, long-term increases to erosion would result.	Management Direction: No similar management action.	Management Direction: No similar management action.	Management Direction: No similar management action.
238	Management Direction: No similar management action.	Management Direction: <ul style="list-style-type: none"> All lands within the planning area would be designated as OHV limited, with the exceptions of areas listed as OHV closed and OHV open in other resource sections. Specific route designations would be made in an implementation-level travel and transportation management planning process following the completion of the RMP. Until route-specific designations are made, the designation of an “OHV limited” will limit all OHV use to the same manner and degree occurring at the time of the designation in the RMP. The “OHV Limited Area” designation will prohibit any new surface disturbance, such as cross-country travel, unless subsequently authorized through another implementation-level decision. Any land acquired by the BLM would be managed similarly to the existing OHV area designations of adjoining BLM lands or as stated, or implied, in the transfer. Where clarification is absent, the BLM will manage acquired lands under the OHV limited area designation. The type of limitation will be set by implementation-level decisions; until these decisions are made, use may continue in the same manner and degree consistent with the purposes for which the acquisition was made. Mechanized vehicles (bicycles) would be subject to OHV area designations (i.e., open, closed, limited). In OHV limited areas, bicycles would be limited to existing routes and trails until routes are designated, then bicycles would be limited to designated routes. 		Management Direction: Same as Alternative B and C, with the addition of: <ul style="list-style-type: none"> New road construction would be restricted to areas where it is required to provide access to recreation sites, in response to outside applications, or to provide access or egress for fire safety, or in response to emergencies such as road failures and emergency bypass construction. Access for vegetation management treatments would be limited to temporary roads that can be removed when work is completed.
239	Management Direction: OHV use would be managed as follows (Map 2-35 in Appendix A): <ul style="list-style-type: none"> Open to OHV travel: 190 acres Closed to OHV travel: 59,200 acres Limited to existing and designated routes: 322,800 acres 	Management Direction: OHV use would be managed as follows (Map 2-36 in Appendix A): <ul style="list-style-type: none"> Open to OHV travel: 190 acres Closed to OHV travel: 73,600 acres Limited to existing and designated routes: 308,400 acres 	Management Direction: OHV use would be managed as follows (Map 2-37 in Appendix A): <ul style="list-style-type: none"> Open to OHV travel: 190 acres Closed to OHV travel: 58,00 acres Limited to existing and designated routes: 323,300 acres 	Management Direction: OHV use would be managed as follows (Map 2-38 in Appendix A): <ul style="list-style-type: none"> Open to OHV travel: 190 acres Closed to OHV travel: 61,500 acres Limited to existing and designated routes: 320,600 acres

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
240	<p>Management Direction: Areas that are managed as open to OHV travel:</p> <ul style="list-style-type: none"> • Samoa Dunes SRMA <p>Areas that are managed as closed to OHV travel:</p> <ul style="list-style-type: none"> • Wilderness Areas and WSAs • Deer Creek ACEC • Hawes Corner ACEC • Sacramento Island ACEC <p>Areas that are managed as OHV limited to existing and designated routes:</p> <ul style="list-style-type: none"> • Mike Thompson Wildlife Area • Manila Dunes ACEC 	<p>Management Direction:² Areas that would be managed as open to OHV travel:</p> <ul style="list-style-type: none"> • Samoa Dunes ERMA <p>Areas that would be managed as closed to OHV travel:</p> <ul style="list-style-type: none"> • Wilderness Areas and Section 603 WSAs and Section 202 WSAs • Ma-le'i Dunes ACEC • Corning Vernal Pools ACEC • Upper Klamath Bench ACEC • North Table Mountain ACEC • Lacks Creek ACEC • Upper Burney Dry Lake ACEC • Hawes Corner ACEC • Sacramento Island ACEC <p>All remaining lands in the planning area would be managed as OHV limited to existing and designated routes, including:</p> <ul style="list-style-type: none"> • Mike Thompson Wildlife Area • All remaining ACECs • All remaining SRMAs and ERMAs 	<p>Management Direction³: Areas that would be managed as open to OHV travel:</p> <ul style="list-style-type: none"> • Samoa Dunes SRMA <p>Areas that would be managed as closed to OHV travel:</p> <ul style="list-style-type: none"> • Wilderness Areas and Section 603 WSAs • Ma-le'i Dunes ACEC <p>Areas that would be managed as OHV limited to existing and designated routes:</p> <ul style="list-style-type: none"> • Mike Thompson Wildlife Area • All other ACECs • All other SRMAs and ERMAs 	<p>Management Direction³: Same as Alternative B, with the exception that Samoa Dunes SRMA would be managed as open to OHV travel.</p>
241	<p>Management Direction: No similar management action.</p>	<p>Management Direction: E-bikes are considered motorized vehicles. When planning for implementation level travel management route designations, consider whether e-bikes should be allowed. Except where modified by future implementation level travel management decisions, e-bike use would be managed as follows: In areas closed to OHV travel:</p> <ul style="list-style-type: none"> • All e-bikes are prohibited. (**) <p>In areas open to OHV travel:</p> <ul style="list-style-type: none"> • All e-bikes are allowed. (**) <p>In OHV limited areas:</p> <ul style="list-style-type: none"> • On natural surface non-motorized routes, e-bikes will not be allowed unless analyzed and approved on a case-by-case basis at the implementation level. (**) • On paved non-motorized routes, Class I and Class II e-bikes are allowed. (**) • On motorized routes, all e-bikes are allowed. (**) <p>BLM will monitor natural and cultural resource impacts of e-bikes and user interactions with e-bikes. If monitoring indicates that e-bikes are not compatible with other uses in a particular area, subsequent implementation level NEPA may be considered to limit e-bike uses on non-motorized trails. Other small recreational motorized vehicles (such as, one wheels and electric scooters) would be allowed in OHV Open areas. In OHV Limited areas, except where modified by future implementation level travel management decisions, other small recreational motorized vehicles would be allowed on motorized trails or paved non-motorized trails with similar speed restrictions as Class II e-bikes.</p>	<p>Management Direction: E-bikes are considered motorized vehicles. When planning for implementation level travel management route designations, consider whether e-bikes should be allowed. Except where modified by future implementation level travel management decisions, e-bike use would be managed as follows: In areas closed to OHV travel:</p> <ul style="list-style-type: none"> • All e-bikes are prohibited. (**) <p>In areas open to OHV travel:</p> <ul style="list-style-type: none"> • All e-bikes are allowed. (**) <p>In OHV limited areas:</p> <ul style="list-style-type: none"> • On natural surface non-motorized routes, e-bikes are limited to Class I where biking is allowed. (**) • On paved non-motorized routes, Class I and Class II e-bikes are allowed on existing routes. (**) • On motorized routes, all e-bikes are allowed. (**) <p>BLM will monitor natural and cultural resource impacts of e-bikes and user interactions with e-bikes. If monitoring indicates that e-bikes are not compatible with other uses in a particular area, subsequent implementation level NEPA may be considered to limit e-bike uses on non-motorized trails. Other small recreational motorized vehicles (such as, one wheels and electric scooters) would be allowed in OHV Open areas. In OHV Limited areas, except where modified by future implementation level travel management decisions, other small recreational motorized vehicles would be allowed on motorized trails or paved non-motorized trails with similar speed restrictions as Class II e-bikes.</p>	<p>Management Direction: Same as Alternative C.</p>

² Criteria used for area designations in this plan primarily rely on four general criteria: minimizing damage to resources, harassment or disruption of fish and wildlife habitats, conflicts between OHV use and other recreational uses, and impairment of wilderness values. These criteria were used when addressing the goals and objectives for special designation area like ACECs, RMAs, Wilderness Areas, WSAs, LWCS units, and other sensitive areas such as sensitive soils and riparian areas.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
242	Livestock Grazing			
243	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none"> Allow livestock grazing on BLM lands, where appropriate, while protecting, managing, and restoring the land. Evaluate acquired lands to determine if they are available or unavailable for livestock grazing based on suitability criteria and considering status of livestock grazing on adjacent BLM-administered lands. Provide management prescriptions for grazing allotments during times of extended drought and establish criteria for adaptively managing activities during severe, extreme, or exceptional drought. Allow for prescriptive grazing practices, where appropriate, to manage vegetation on public lands. 		
244	Management Direction: Arcata RMP 1992 The management of livestock grazing will follow prescriptions of the Yokayo Grazing ROD (USDI BLM 1983a) that is incorporated by reference and allotment management plans (AMPs) that specify grazing systems, management facilities, and land treatments. Livestock grazing will also be managed to ensure consistency with management objectives for LSRs and the Aquatic Conservation Strategy. Evaluation of existing and proposed livestock grazing will be included in watershed analyses for Key Watersheds and management assessments for LSRs. AMPs will be revised or developed to reflect any needed changes as determined through monitoring studies and allotment evaluation.	Management Direction: No similar management action.	Management Direction: No similar management action.	Management Direction: No similar management action.
245	Management Direction: Redding RMP 1993 Site-specific environmental analyses will be conducted prior to actual construction or treatment of proposed projects. Projects will, whenever possible, be modified to avoid or minimize identified adverse impacts. An analysis of potential effects on rare, threatened or endangered plants and animals will be required for each proposed project. If required, consultation with USFWS or CDFW will be initiated. Projects will be modified or abandoned to avoid impacts to officially listed rare, threatened, or endangered plants or animals. Projects will also be deleted or modified if approval would result in the listing of any sensitive species as threatened or endangered. BLM will design livestock grazing and range improvement program to avoid adverse effects on properties included in, or eligible for inclusion in, the NRHP, unless it is not prudent or feasible. BLM will consult with the SHPO for purposes of developing a mutually acceptable mitigation plan when avoidance is not prudent or feasible. All actions will be in conformance with visual resource management objectives. All fences will be constructed to meet BLM design specifications. Soils disturbed by range improvement construction will be reseeded with native and/or approved introduced species as soon as possible, unless it is determined to be unnecessary. Prescribed burning of portions of large areas will be initiated in different years and will be re-burned on a rotational basis in	Management Direction: No similar management action.	Management Direction: No similar management action.	Management Direction: No similar management action.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
245 (cont.)	<p>order to provide varied regrowth stages. Strips of vegetation will be left unburned. Burns will be conducted under conditions that provide desired fire intensity.</p> <p>AMPs will include BMPs as called for in Section 208 of the Clean Water Act and as described in “208 Water Quality Management Report.”</p> <p>AMPs will be developed in cooperation with grazing leases. All interested parties will be given an opportunity to participate in the development of these plans.</p> <p>Maintenance of structural improvements shall be provided by the user deriving the primary benefit from the improvement.</p> <p>Livestock leases would be adjusted, if necessary, to reflect decreases in public land acreage available for livestock grazing use within an allotment as a result of land disposal.</p> <p>In addition to existing guidance, this RMP establishes where domestic livestock grazing may or may not be permitted. No grazing will be authorized in areas closed to grazing under the land use allocations of the selected or preferred land use management alternative. Further reductions of available domestic livestock grazing may occur through development of subsequent activity plans. Moreover, grazing leases will be established and/or perpetuated under manageability criteria. Manageability is a realistic appraisal of grazing lease applications submitted to the Redding FO. Since BLM has a responsibility for sound management practices and must use fiscal resources wisely, grazing lease applications will be screened using the following criteria:</p> <ul style="list-style-type: none">• Size of Land Tract and Location: This is simply used as a guideline for preliminary assessment of management potential.• Number of Suitable Acres: Absence of suitable acres (as defined in Appendix A of the Redding Grazing Management EIS of 1984) immediately places a grazing lease in the non-manageable category. Any acreage above zero makes the decision discretionary.• Number of AUMs: Less than 20 AUMs most often places a grazing lease in the non-manageable category. Twenty to 100 AUMs are generally considered an indeterminate area where the manageability decision is discretionary and not weighed. Greater than 100 AUMs are considered manageable the majority of the time.• Other Dependency: No grazing lease is considered non-manageable if the operator has demonstrated a dependency on the public land for his or her livelihood.• Tract accessibility: Accessible tracts are generally considered manageable. Inaccessible tracts are discretionary.• Land Tenure Adjustment: In areas where BLM intends to exchange or transfer administration of public lands, new grazing preferences will not be established.	(see above)	(see above)	(see above)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
246	Management Direction: Redding Proposed Livestock Grazing Management EIS 1983 Continue to collect weather data from existing sources. Install new rain gauges where data would be useful to predict production on Mediterranean annuals and to correlate with monitoring data on perennial range.	Management Direction: No similar management action.	Management Direction: No similar management action.	Management Direction: No similar management action.
247	Management Direction: No similar management action	Management Direction: <ul style="list-style-type: none"> The management of livestock grazing will follow prescriptions of the Yokayo Grazing ROD (USDI BLM 1983a) and the Final Redding Grazing EIS August (USDI BLM1983) that is incorporated by reference and allotment management plans (AMPs) that specify grazing systems, management facilities, and land treatments. Lands previously found unsuitable that have undergone a community-type change over the life of this plan, may be re-evaluated for suitability if a) it is determined that the new vegetation community changes are expected to continue as a result of climatically driven, natural trends, or, b) it is determined that following a disturbance resulting in a community type-change, that livestock grazing would provide a tool to help retain activity plan level vegetation objectives. Livestock grazing would also be managed to ensure consistency with management objectives for other resources and resource uses. All grazing leases shall comply with the Rangeland Health Standards and Guidelines for California and Northwestern Nevada Final EIS (April 1998), which includes Proposed Grazing Management Practices for Water Quality in California. Grazing leases would also comply with any subsequent applicable federal guidance. Granting of a grazing lease would require lessee provides BLM administrative access over private land if needed to access a BLM grazing allotment for the purpose of monitoring rangeland health standard and range improvements. This access would be required to be documented through an access agreement. Grazing would be managed to maintain riparian habitat and function. If the State issues a drought proclamation for the counties included within the planning area, the BLM may take steps to reduce the possible effects on resources within grazing allotments. This may include issuing drought notification letters, modifying time or duration of use, adjusting AUMs, limiting utilization, or implementing a complete rest (43 CFR § 4110.3-3 (b) – Implementing changes in active use. Follow the most current Native Plant Materials Management (H-1745) handbook and related supplement(s) when conducting rehabilitation and restoration vegetation and seeding projects on livestock grazing allotments. Cooperative vegetation treatment efforts between public agencies, non-profits, and private landowners would be encouraged with the following objectives: <ul style="list-style-type: none"> Promote native, herbaceous plant diversity to support water infiltration and protect soil health. Promote grassland conservation on public lands for both wildlife and authorized domestic livestock use, where appropriate. 		
248	Management Direction: The following areas are unavailable for livestock grazing (195,300 acres, Map 2-39 in Appendix A): Arcata RMP Forest Plan Amendment 1995 <ul style="list-style-type: none"> Samoa Peninsula MA Butte Creek MA Red Mountain RNA/ACEC Covelo Vicinity Management Area Designated Wilderness Areas and WSAs (where grazing was not present at time of designation) Redding RMP 1993 <ul style="list-style-type: none"> Areas within the Ishi MA <ul style="list-style-type: none"> Battle Creek (below Manton Road) corridor Deer Creek Areas within the Klamath MA <ul style="list-style-type: none"> Forks of Butte Creek Baker Cypress Shasta and Klamath River Canyon Upper Klamath River corridor Dry Creek Areas within the Sacramento River MA <ul style="list-style-type: none"> Sacramento Island Riparian areas within the Bend area Hawes Corner 	Management Direction: The following areas are unavailable for livestock grazing (149,400 acres, Map 2-40 in Appendix A): <ul style="list-style-type: none"> Upper Burney Dry Lake and Baker Cypress ACEC Butte Creek ACEC Deer Creek ACEC Fork of Butte Creek ACEC, except Helltown Parcel Gilham Butte ACEC Hawes Corner ACEC Iaqua Butte ACEC Lacks Creek ACEC Ma-le'l Dunes ACEC Sacramento Island ACEC Shasta and Klamath River Canyon ACEC Grass Valley Creek ACEC Upper and Lower Clear Creek ACEC Swasey Drive Clear Creek Greenway ACEC Upper Klamath Bench ACEC Eden Valley ACEC Beegum Creek Gorge ACEC North Fork Eel ACEC North Table Mountain ACEC 	Management Direction: The following areas are unavailable for livestock grazing (110,400 acres, Map 2-41 in Appendix A): <ul style="list-style-type: none"> Fork of Butte Creek ACEC, except Helltown Parcel Gilham Butte ACEC Ma-le'l Dunes ACEC Grass Valley Creek ACEC Swasey Drive ACEC Eden Creek ACEC Section 603 WSAs in which the non-impairment standard cannot be met due to livestock grazing. Lands acquired with livestock grazing deed restrictions. Wilderness areas, excluding areas with existing leases that were present prior to designation. Areas where decomposed granite is the predominant soil type. Lake Mountain grazing allotment #5511. Arcata FO Lightning Camp Ridge allotment #5513 to exclude 1,860 acres of the 5,015-acre allotment. Mike Thompson Wildlife Area, South Spit Humboldt Bay Samoa Dunes Recreation Area and acquired coastal dune areas on the Samoa Peninsula 271,800 acres would be available for livestock grazing; however, only 667,898 acres are in active, pending, or vacant allotments. In order to consider grazing on administratively	Management Direction: The following acres are unavailable for livestock grazing (193,600 acres, Map 2-42 in Appendix A). <ul style="list-style-type: none"> Upper Burney Dry Lake and Baker Cypress ACEC Butte Creek ACEC Deer Creek ACEC Fork of Butte Creek ACEC Gilham Butte ACEC Hawes Corner ACEC Iaqua Butte ACEC Lacks Creek ACEC Ma-le'l Dunes ACEC Sacramento Island ACEC Shasta and Klamath River Canyon ACEC Grass Valley Creek ACEC Upper and Lower Clear Creek ACEC Swasey Drive ACEC Upper and Lower Clear Creek ACEC Upper Klamath Bench ACEC Eden Valley ACEC Beegum Creek Gorge ACEC North Fork Eel ACEC North Table Mountain ACEC Riparian areas within the Sacramento River Bend ACEC

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
248 <i>cont.</i>	<ul style="list-style-type: none"> – Cottonwood Creek and Sacramento Parcels • Interlakes Special Recreation Management Area • Areas within the Trinity MA <ul style="list-style-type: none"> – Trinity River – Grass Valley Creek Watershed <p>There are 186,900 acres available for livestock grazing; however, only 67,898 acres are in active, pending, or vacant allotments. In order to consider grazing on administratively available lands outside of active, pending, or vacant allotments, BLM would follow policy, as well as management direction associated with any overlying special designations in order to consider suitability for establishing an allotment.</p>	<ul style="list-style-type: none"> • Section 603 WSAs, except for the Big Butte WSA (where grazing occurred prior to designation, <i>consistent with the updated allotment boundary for Lightning Camp Ridge</i>) • Section 202 WSAs • Lands acquired with livestock grazing deed restrictions. • Wilderness areas, excluding areas with existing leases that were present prior to designation • Areas where decomposed granite is the predominant soil type. • Lake Mountain grazing allotment #5511. • Arcata FO Lightning Camp Ridge allotment #5513 to exclude 1,860 acres of the 5,015-acre allotment. • Mike Thompson Wildlife Area, South Spit Humboldt Bay • Samoa Dunes Recreation Area and acquired coastal dune areas on the Samoa Peninsula • Adjacent to the following streams and rivers: <ul style="list-style-type: none"> – Cottonwood Creek Parcel (S1/2 SW1/4 28 N 4W sec12) – Dry Creek Parcel (SE1/4 47N 5W sec 18) – Battle Creek (within 0.25miles of bankfull width) – Trinity River (WSR corridor) – Klamath River (WSR corridor) <p>There would be 232,880 acres available for livestock grazing; however, only 67,898 acres are in active, pending, or vacant allotments. In order to consider grazing on administratively available lands outside of active, pending, or vacant allotments, BLM would follow policy, as well as management direction associated with any overlying special designations in order to consider suitability for establishing an allotment</p>	available lands outside of active, pending, or vacant allotments, BLM would follow policy, as well as management direction associated with any overlying special designations in order to consider suitability for establishing an allotment.	<ul style="list-style-type: none"> • Section 603 WSAs, except for the Big Butte WSA (where grazing occurred prior to designation, <i>consistent with the updated allotment boundary for Lightning Camp Ridge</i>) • Section 202 WSAs • Lands acquired with livestock grazing deed restrictions. • Wilderness areas, excluding areas with existing leases that were present prior to designation • Areas where decomposed granite is the predominant soil type • Lake Mountain grazing allotment #5511. • Arcata FO Lightning Camp Ridge allotment #5513 to exclude 1,860 acres of the 5,015-acre allotment. • Mike Thompson Wildlife Area, South Spit Humboldt Bay • Samoa Dunes Recreation Area and acquired coastal dune areas on the Samoa Peninsula • Adjacent to the following streams and rivers: <ul style="list-style-type: none"> – Cottonwood Creek Parcel (S1/2 SW1/4 28 N 4W sec12) – Dry Creek Parcel (SE1/4 47N 5W sec 18) – Brush Creek Parcel (47N 5W section 8) – Battle Creek (within 0.25miles of bankfull width) – Trinity River (WSR corridor) – Klamath River (WSR corridor) • All Shasta and Trinity County parcels that were closed to grazing under Alternative A (see Map 2-39 in Appendix A for specific areas) <p>There would be 188,700 acres available for livestock grazing; however, only 67,898 acres are in active, pending, or vacant allotments. In order to consider grazing on administratively available lands outside of active, pending, or vacant allotments, BLM would follow policy, as well as management direction associated with any overlying special designations, in order to consider suitability for establishing an allotment</p>
249	Areas of Critical Environmental Concern			
250	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none"> • Manage ACECs to provide special management as required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes. • Maintain the long-term sustainability of the relevant and important values for which the ACECs are managed. • As funds and staffing are made available, ascertain the boundaries of the public lands, giving priority to ACECs, by survey and marking, giving priority to protect resources in coordination with private landowners, stakeholders, Tribes, and state and Federal agencies (per 43 U.S.C. 1711, 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-1, Cadastral Survey Handbook). 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
251	<p>Management Direction: The following 16 ACECs are designated (Map 2-43 in Appendix A; 54,600 acres):</p> <ol style="list-style-type: none"> 1. Baker Cypress ACEC (140 acres) 2. Butte Creek ACEC (2,250 acres) 3. Sacramento River Island ACEC (90 acres) 4. Deer Creek ACEC (570 acres) 5. Elder Creek ACEC (3,060 acres) 6. Forks of Butte Creek ACEC (2,900 acres) 7. Gilham Butte ACEC (2,620 acres) 8. Hawes Corner ACEC (40 acres) 9. Iaqu Buttes ACEC (1,110 acres) 10. Lacks Creek ACEC (7,480 acres) 11. Manila Dunes ACEC (150 acres) 12. Red Mountain ACEC (6,800 acres) 13. Sacramento River Bend ACEC (18,600 acres) 14. Shasta and Klamath Rivers Canyon ACEC (1,210 acres) 15. South Fork Eel River ACEC (7,110 acres) 16. Swasey Drive ACEC (470 acres) <p>Some existing ACEC acreages are inconsistent with the acres published in the Arcata and Redding RMPs or with the acres in Alternatives B, C, and D because methods for calculating become more refined and the BLM has moved away from including private lands with the ACEC boundaries.</p>	<p>Management Direction: The following 25 ACECs would be designated (Map 2-44 in Appendix A; 88,820 acres) Additional details on ACECs that would be designated, including maps and their relevance and importance values can be found in the ACEC Report in Appendix G:</p> <ol style="list-style-type: none"> 1. Upper Burney Dry Lake and Baker Cypress ACEC (210 acres) 2. Butte Creek ACEC (2,250 acres) 3. Deer Creek ACEC (570 acres) 4. Forks of Butte Creek ACEC (2,900 acres) 5. Gilham Butte ACEC (9,330 acres) 6. Hawes Corner ACEC (40 acres) 7. Iaqu Butte ACEC (1,110 acres) 8. Lacks Creek ACEC (2,140 acres) 9. Ma-le'l Dunes ACEC (180 acres) 10. Sacramento Island ACEC (90 acres) 11. Sacramento River Bend ACEC (20,420 acres) 12. Shasta and Klamath River Canyon ACEC (1,270 acres) 13. Grass Valley Creek ACEC (19,560 acres) 14. Swasey Drive Clear Creek Greenway ACEC (5,960) 15. Sheep Rock ACEC (1,410 acres) 16. Black Mountain ACEC (1,110 acres) 17. Upper Klamath Bench ACEC (90 acres) 18. Upper Mattole ACEC (460 acres) 19. Eden Valley ACEC (10,810 acres) 20. Beegum Creek Gorge ACEC (4,380 acres) 21. North Fork Eel ACEC (500 acres): 22. Willis Ridge ACEC (3,180 acres) 23. South Spit¹ ACEC (630 acres) 24. Corning Vernal Pools ACEC (170 acres) 25. North Table Mountain ACEC (50 acres) 	<p>Management Direction: The following 7 ACECs would be designated (Map 2-45 in Appendix A; 42,430 acres). Additional details on ACECs that would be designated, including maps and their relevance and importance values can be found in the ACEC Report in Appendix G:</p> <ol style="list-style-type: none"> 1. Forks of Butte Creek ACEC (2,900 acres) 2. Gilham Butte ACEC (2,620 acres) 3. Ma-le'l Dunes ACEC (180 acres) 4. Sacramento River Bend ACEC (18,600 acres) 5. Swasey Drive ACEC (470 acres) 6. Grass Valley Creek ACEC (13,070 acres) 7. Eden Creek ACEC (4,590 acres) 	<p>Management Direction: The following 26 ACECs would be designated (Map 2-46 in Appendix A; 87,890 acres). Additional details on ACECs that would be designated, including maps and their relevance and importance values can be found in the ACEC Report in Appendix G:</p> <ol style="list-style-type: none"> 1. Upper Burney Dry Lake and Baker Cypress ACEC (210 acres) 2. Butte Creek ACEC (2,250 acres) 3. Deer Creek ACEC (570 acres) 4. Forks of Butte Creek ACEC (2,900 acres) 5. Gilham Butte ACEC (9,330 acres) 6. Hawes Corner ACEC (40 acres) 7. Iaqu Butte ACEC (1,110 acres) 8. Lacks Creek ACEC (2,140 acres). 9. Ma-le'l Dunes ACEC (180 acres) 10. Sacramento Island ACEC (90 acres) 11. Sacramento River Bend ACEC (20,420 acres) 12. Shasta and Klamath River Canyon ACEC (1,270 acres) 13. Grass Valley Creek ACEC (19,560 acres) 14. Swasey Drive ACEC (470 acres) 15. Upper and Lower Clear Creek ACEC (4,560 acres) 16. Sheep Rock ACEC (1,410 acres) 17. Black Mountain ACEC (1,110 acres) 18. Upper Klamath Bench ACEC (90 acres) 19. Upper Mattole ACEC (460 acres) 20. Eden Valley ACEC (10,810 acres) 21. Beegum Creek Gorge ACEC (4,380 acres) 22. North Fork Eel ACEC (500 acres): 23. Willis Ridge ACEC (3,180 acres) 24. South Spit¹ ACEC (630 acres) 25. Corning Vernal Pools ACEC (170 acres) 26. North Table Mountain ACEC (50 acres)

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
252	Management Direction: No similar action	Management Direction: The shift away from using the terms “outstanding natural area” (ONA) and “research natural area” (RNA) for existing ACEC designations is primarily aimed at reducing confusion and emphasizing clear designations. The term ONA was originally a name change without distinct regulatory significance, which may lead to potential ambiguity. The term RNA is not used in the Proposed Plan as the ACEC designation serves to protect relevant and important values; however, the ACECs do not have a primary purpose of research and education that comes with an RNA designation. This does not preclude opportunities for research and education within an ACEC. <ul style="list-style-type: none">• ACEC designation would not restrict access or uses of Tribal cultural practices, lands, resources, or access to traditional areas of cultural or religious importance on BLM administered lands.• ACECs would be considered to mitigate effects of projects outside of ACEC boundaries if the proposed mitigation benefits or promotes the ACEC’s relevance and importance criteria.• Mitigation proposals would be considered on a case-by-case basis.• Prioritize acquisition of lands nearby ACECs to add to the protection of sensitive resources and to the overall significance of the area.• Prioritize ACECs for access for scientific research.• In instances where the cumulative effects of casual use could result in more than negligible disturbance, the BLM may establish specific areas to limit further impacts. Anyone planning to conduct activities in these areas would need to contact the BLM 15 calendar days before commencing activities to determine whether a notice or plan of operations is needed. The specific areas and rules would be made public through announcements in the Federal Register and posting in the local BLM offices in accordance with 43 CFR 3809.31 (a).• Ground-disturbing activities would only be allowed if consistent with the protection of ACEC relevance and importance values.• Fire and fuels management would be conducted to maintain ACEC relevant and important values.• Use of heavy equipment would require approval by the Authorized Officer.• Heavy equipment would not be used for fire suppression or management in any known cultural sites within an ACEC boundary without approval from the Authorized Officer.• Where extreme fire conditions are present in the ACEC, and with consideration of R&I values, use appropriate suppression actions to mitigate the threat to life or property.• When possible, use Minimum Impact Suppression Tactics (MIST)• Continue to manage vegetation and hazardous fuel loading through varied activities, including an active prescribed fire program, to maintain vegetation conditions that will promote low or variable fire behavior year-round.• BLM would continue to explore methods to safely prevent wildland fire. These include the following:<ul style="list-style-type: none">– Continued construction of shaded fuel breaks– Low-to-moderate intensity prescribed burns– Public education and signage– Implementing fire prevention orders to limit fire ignitions during high or extreme fire danger– Cooperative fire suppression with the California Department of Forestry and Fire Protection (CAL FIRE)• CAL FIRE would be provided a map of any non-mechanized or special consideration areas which may alter or limit fire suppression activities and tools.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
253	Existing ACECs			
254	Baker Cypress ACEC			
255	<p>Management Direction: Redding RMP 1993 Designate Baker Cypress as an RNA/ACEC (141 acres). The ACEC would be managed as follows:</p> <ul style="list-style-type: none"> • Encourage research of Baker cypress in conjunction with genetic and habitat studies of other stands of Baker cypress. • Not available for grazing (141 acres) • OHV limited to designated roads and trails • No surface occupancy for mineral leasing • No surface occupancy for geothermal development • Mineral materials sales are permitted only if such actions enhance Baker cypress habitat. 	<p>Management Direction: The existing Baker Cypress ACEC would be expanded from 141 acres to 180 acres. The expanded Baker Cypress ACEC and the newly proposed Upper Burney Dry Lake ACEC would be designated as one ACEC called <u>Upper Burney Dry Lake and Baker Cypress ACEC</u> (210 acres). The RNA designation would not be retained. The ACEC would be managed as follows to protect the rare Baker Cypress and mountain vernal pool habitat:</p> <ul style="list-style-type: none"> • Increase the frequency of disturbance to enhance regeneration and health. • Increased regeneration of rare cypress by addressing conifer encroachment through mechanical treatment. • Prioritize vegetation treatments to promote regeneration of serotinous species. • ROW avoidance outside of existing ROWs • OHV limited (183 acres- Baker Cypress), OHV closed (26 acres-Upper Burney Dry Lake) • VRM class III • Closed to mineral leasing • Closed to mineral materials development • Not available for livestock grazing • Prioritize acquisition of nearby lands to preserve hydrologic regime. • Work cooperatively with surrounding landowners to prevent trespass, unauthorized grazing, and cross-country OHV. 	<p>Management Direction: The existing RNA/ACEC designation would not be retained.</p>	<p>Management Direction: Same as Alternative B.</p>
256	Butte Creek ACEC			
257	<p>Management Direction: Arcata RMP 1992 Designate all public lands in the Butte Creek MA as an RNA/ACEC (2,254 acres) for the preservation of old growth and wildlife habitat values. Prepare an RNA/ACEC Activity Plan. The ACEC would be managed as follows:</p> <ul style="list-style-type: none"> • Closed to mineral materials development • Monitor spotted owls and other old-growth characteristics. Continue to inventory habitat conservation/ critical habitat areas. • Sign entrance to public lands regarding OHV designations. • Contact universities/research institutions for expressions of interest in conducting research. • Contact surrounding landowners about acquisitions. • Prepare land report(s) to address: <ul style="list-style-type: none"> – Specific acquisition methods – Site-specific inventories and requirements 	<p>Management Direction: Butte Creek ACEC (2,250 acres) would be managed the same as the No Action alternative to protect old-growth reserves and the NSO with additional management as follows:</p> <ul style="list-style-type: none"> • VRM class III • ROW avoidance • OHV limited • Not available for livestock grazing • Closed to mineral leasing 	<p>Management Direction: The existing ACEC designation would not be retained. Old growth values would be managed under LSR designations.</p>	<p>Management Direction: Same as Alternative B.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
258	Deer Creek ACEC			
259	Management Direction: Redding RMP 1993 Designate Deer Creek as an ACEC (567 acres). The ACEC would be managed as follows: <ul style="list-style-type: none">• Not available for grazing• VRM class I.• OHV closed• No surface occupancy for mineral leasing• Closed to mineral materials development• Manage as Semi-primitive Nonmotorized. (ROS)• Acquire available unimproved lands within the canyon.• 200 acres in Section 14, T. 25 N., R. 1 E. are designated as wilderness	Management Direction: Deer Creek ACEC (570 acres) would add fisheries as part of the relevance and importance criteria. The ACEC would be managed the same as Alternative A with the following exceptions to protect the scenic qualities of the canyon, to ensure the long-term protection of the raptors in the area, to conserve cultural resources, and to protect ecologically intact habitat for wildlife: <ul style="list-style-type: none">• ROW avoidance• OHV limited• Closed to mineral leasing• VRM Class II• Prioritize non-BLM lands adjacent to the ACEC for acquisition	Management Direction: The existing ACEC designation would not be retained.	Management Direction: Same as Alternative B.
260	Elder Creek RNA/ACEC			
261	Management Direction: Arcata RMP 1992 The Elder Creek RNA/ACEC (3,060 acres) is designated as a Registered Natural History Landmark under the Historic Sites Act/United Nations Educational, Scientific and Cultural Organization Biosphere Reserve to protect water quality and forest heath.	Management Direction: The Elder Creek RNA/ACEC (3,060 acres) would not be carried forward in the RMP because it is designated wilderness and would be managed under the Wilderness Act.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
262	Forks of Butte Creek ACEC			
263	<p>Management Direction: Redding RMP 1993 Designate Butte Creek Canyon from above the Forks of Butte Creek to Helltown as an Outstanding Natural Area/ACEC (2,900 acres)</p> <ul style="list-style-type: none"> • Manage as Semi-Primitive Motorized. • OHV limited • Withdrawn from mineral entry under Public Land Order 5329, 2,070 acres withdrawn, January 18, 1973. • Recreational mineral collection is permitted within the canyon. • VRM class II. • Closed to grazing. • Acquire available, unimproved lands to protect scenic quality and enhance the recreational experience. • All of the available commercial forest land within Butte Creek Canyon would be managed for the enhancement of other resource values. All other available commercial forest land would be managed as restricted. 	<p>Management Direction: The Forks of Butte Creek ACEC (2,900 acres) would be managed as follows to protect scenic values, cultural resources, and fisheries. The ONA term would not be retained because it is not Congressionally-designated and would no longer be referred to as an ONA:</p> <ul style="list-style-type: none"> • ROW exclusion • OHV limited • VRM class II • Closed to mineral leasing • Withdrawn from mineral entry under PLO 5329, 2,070 acres withdrawn, January 18, 1973. • Closed to mineral materials development unless for restoration purposes. • Not available for livestock grazing, except for Helltown parcels which would be available. • Prioritize fuels and forest management for fire prevention and resilience within the ACEC. • Prioritize obtaining easements from landowners to obtain administrative and public access. • Restrict ground-disturbing fire suppression with the Forks of Butte National Register District. • ACEC would be designated day use only; however, overnight camping may be considered for organized groups, events, and commercial uses when part of a SRP. (**) • Prioritize trail maintenance and development to allow for non-motorized access and recreational use within the ACEC. • Motor vehicle access to the day use area would be seasonally closed. A gate and/or barriers would be installed and maintained. (**) • All trail development and barriers would be analyzed and disclosed through site-specific implementation-level NEPA. 	<p>Management Direction: Same as Alternative B, with the addition of the following:</p> <ul style="list-style-type: none"> • Day use only. (**) • Explore developing a designated campground and restrict motorized access beyond the designated campground. Details of this campground would be considered and analyzed with site-specific implementation level NEPA. Work in developing cooperative management of the campground with other agencies and organizations where practicable. • Motor vehicle access to the campground would be seasonally closed. A gate and/or barriers would be installed and maintained. (**) • No new trail development would occur within the ACEC. 	<p>Management Direction: Same as Alternative B, with addition of the following:</p> <ul style="list-style-type: none"> • Work on developing cooperative management of the day use area with other agencies and organizations where practicable. (**) • ROW avoidance

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
264	Gilham Butte ACEC			
265	Management Direction: Arcata RMP 1992 Designate Gilham Butte as RNA/ACEC (2,619 acres) for the preservation of old-growth values. Prepare an ACEC Activity Plan to address site-specific needs, access, research proposals and priorities. The ACEC would be managed as follows: <ul style="list-style-type: none"> • Available for nonconsumptive research and cone collecting. • Control fire, disease, and insects to prevent spreading to other lands and to protect the existing forest conditions. 	Management Direction: The Gilham Butte ACEC would be expanded to 9,330 acres as externally proposed. The RNA designation would not be retained. The ACEC would be managed as follows to protect old growth reserves: <ul style="list-style-type: none"> • OHV limited, except where closed by deed restriction on acquired lands. • Closed to discharge of firearms where prohibited by deed restriction on acquired lands. • ROW exclusion • VRM class III • Closed to mineral leasing • Closed to mineral materials development. • Recommend for withdrawal from locatable mineral entry • Not available for livestock grazing. • Prioritize obtaining easements in this area to help maintain a corridor between Humboldt Redwoods State Park and the King Range National Conservation Area. 	Management Direction: The Gilham Butte ACEC designation would be retained (2,620 acres). The RNA designation would not be retained. The ACEC would be managed as follows: <ul style="list-style-type: none"> • ROW avoidance • OHV limited to existing routes • VRM class III • Closed to mineral leasing • Closed to mineral materials development. • Recommend for withdrawal from locatable mineral entry. • Not available for livestock grazing. • Prioritize obtaining easements in this area to help maintain a corridor between Humboldt Redwoods State Park and the King Range National Conservation Area. 	Management Direction: Same as Alternative B, except for the following: <ul style="list-style-type: none"> • ROW avoidance
266	Hawes Corner ACEC			
267	Management Direction: Redding RMP 1993 Designate Hawes Corner as an RNA/ACEC (38 acres). The RNA/ACEC would be managed as follows: <ul style="list-style-type: none"> • OHV Closed • Not available for livestock grazing. • Acquire the available, unimproved privately owned portion of <i>Orcuttia tenuis</i> habitat or develop cooperative management agreement to protect the habitat. 	Management Direction: The Hawes Corner ACEC (40 acres) designation would be retained. The RNA designation would not be retained. The ACEC would be managed as follows to protect communities of slender Orcutt grass (<i>Orcuttia tenuis</i>): <ul style="list-style-type: none"> • ROW exclusion • OHV closed • VRM class III • Closed to mineral leasing • Closed to mineral materials development • Not available for livestock grazing • Prioritize obtaining easements from landowners to obtain administrative access. • Prioritize acquisition of nearby lands to preserve hydrologic regime. • Work cooperatively with surrounding landowners to prevent trespass, unauthorized grazing, and cross-country OHV. 	Management Direction: The Hawes Corner ACEC designation would not be retained.	Management Direction: Same as Alternative B.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
268	Iaqua Butte ACEC			
269	Management Direction: Arcata RMP 1992 Designate Iaqua Butte as an RNA/ACEC (1,111 acres) for the preservation of old-growth values. Prepare an ACEC Activity Plan to address site-specific needs, access, research proposals and priorities. The ACEC would be managed as follows: <ul style="list-style-type: none">• Available for nonconsumptive research and cone collecting.• Control fire, disease, and insects to prevent spreading to other lands and to protect the existing forest conditions.	Management Direction: The Iaqua Butte ACEC (1,110 acres) designation would be retained. The RNA designation would not be retained. The ACEC would be managed as follows to protect old-growth reserves: <ul style="list-style-type: none">• ROW avoidance• VRM class III• OHV limited• Closed to mineral leasing• Recommend for withdrawal from locatable mineral entry.• Closed to mineral materials development• Not available for livestock grazing	Management Direction: The Iaqua Butte ACEC designation would not be retained. Old growth values would be managed under LSR designations.	Management Direction: Same as Alternative B.
270	Lacks Creek ACEC			
271	Management Direction: Arcata RMP 1992 Designate the Lacks Creek RNA/ACEC (800 acres) for the preservation of old growth values.	Management Direction: The Lacks Creek ACEC would be expanded to 2,140 acres. The RNA designation would not be retained. The ACEC would be managed as follows to protect old growth reserves: <ul style="list-style-type: none">• ROW avoidance• OHV closed• VRM class III• Closed to mineral leasing• Closed to mineral materials development, unless for restoration purposes• Not available for livestock grazing• Seasonal limitations on mountain biking would be considered as necessary to limit conflict and provide for public safety.	Management Direction: The Lacks Creek ACEC designation would not be retained.	Management Direction: Same as Alternative B, with the following exception: <ul style="list-style-type: none">• Closed to mineral materials development.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
272	Ma-le'I Dunes ACEC			
273	Management Direction: Arcata RMP 1992 Designate the entire 150 acres of the Manila Dunes as an ONA/ACEC for protection and interpretation of natural values. Prepare an ACEC activity plan for Manila Dunes after completion of Humboldt County Beach and Dunes Management Plan. The ACEC plan will be consistent with this plan. The ACEC will be managed as follows: <ul style="list-style-type: none">OHV limited	Management Direction: The Manila Dunes ACEC would be renamed as the Ma-le'I Dunes ACEC and expanded to 180 acres (this acreage fluctuates based on shoreline). The ONA term would not be retained because it is not Congressionally-designated and would no longer be referred to as an ONA. The ACEC would be managed as follows to protect sensitive plant and wetland habitat and cultural resources: <ul style="list-style-type: none">ROW exclusion outside of existing ROWs.OHV closedClosed to mechanized vehicles (**)Closed to e-bikes (**)VRM class IIClosed to mineral leasingRecommend for withdrawal from mineral entryClosed to mineral materials development.Not available for grazing.Day use only (**) Surface-disturbing activities would only be allowed if they are consistent with relevance and importance values, or in an existing ROW.	Management Direction: Management would be the same as Alternative B with the addition of the following exceptions: <ul style="list-style-type: none">ROW avoidanceOpen to locatable mineral entry	Management Direction: Same as Alternative B.
274	Red Mountain RNA/ACEC			
275	Management Direction: Arcata RMP 1992 The Red Mountain RNA/ACEC (6,800 acres) is designated to protect unique botanical values associated with red, serpentine soils, anadromous fisheries (Cedar Creek), and rare vegetation type/wildlife habitat (LSRs).	Management Direction: The Red Mountain RNA/ACEC (6,800 acres) would not be carried forward in the RMP because it is designated wilderness and would be managed under the Wilderness Act.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
276	Sacramento Island ACEC			
277	Management Direction: Redding RMP 1993 Designate Sacramento Island as an RNA/ACEC (91 acres). Develop a Research Natural Area/ACEC management plan for the Sacramento Island that identifies specific land acquisition and cooperative agreement needs for ad joining private lands, establishes a desired plant community for the river and adjacent ecological sites, identifies waterfowl and anadromous salmonid habitat improvement actions, and depicts necessary management facilities to disallow vehicle use while promoting pedestrian use. The ACEC would be managed as follows: <ul style="list-style-type: none">• Withdraw from mineral entry.• No surface occupancy for mineral leasing• Allow mineral materials disposals only if such actions are intended to enhance the natural values (i.e., anadromous salmonid habitat, waterfowl habitat, or long-term vegetation management).• Manage as Semi- Primitive Motorized.• OHV Closed• VRM Class II.• Not available for livestock grazing.• Acquire adjacent available unimproved lands to enhance manageability.	Management Direction: The Sacramento Island ACEC (90 acres) designation would be retained. The RNA designation would not be retained. The ACEC would be managed as follows to protect rare riparian habitat and fisheries: <ul style="list-style-type: none">• ROW avoidance• OHV closed• VRM class III• Closed to mineral leasing• Closed to mineral materials development, unless for restoration purposes• Closed to grazing, except for targeted grazing for weed control on a case-by- case basis.• Day use only and closed to campfires (**)• Explore developing a closure to shooting with exception of archery and shotguns. (**)• Prioritize riparian restoration, with an emphasis on removal of nonnative species.	Management Direction: The Sacramento Island ACEC designation would not be retained.	Management Direction: Same as Alternative B.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
278	Sacramento River Bend ACEC			
279	<p>Management Direction:</p> <p>Redding RMP 1993</p> <p>Designate the Sacramento River Bend Area as an ONA/ACEC (18,596 acres).</p> <p>The ACEC would be management as follows:</p> <ul style="list-style-type: none"> • Manage as Semi-Primitive Motorized and Roaded Natural. • No surface occupancy for mineral leasing within one mile of the Sacramento River. • OHV limited to designated roads and trails. • VRM Class II. • Allow livestock grazing in upland areas as a means to improve the desired plant community. Close riparian areas to livestock grazing. • Permit mineral materials disposals only if such action will not adversely affect habitat or management of the desired plant community. • Acquire available unimproved lands which (in descending priority): <ul style="list-style-type: none"> – Contain high priority habitat along the Sacramento River as depicted in the 1988 Sacramento River Riparian Atlas – Front the Sacramento River – Provide physical access to public land – Contain known/potential wetland or special status species habitat – Contain important cultural resources – Facilitate overall public management within the area. 	<p>Management Direction:</p> <p>The Sacramento River Bend ACEC would be expanded to 20,420 acres. The ONA term would not be retained because it is not Congressionally-designated and would no longer be referred to as an ONA. Approximately 1,950 acres would be added due to acquisitions since approval of the 1993 Redding RMP and to make it easier to manage some parcels for the relevance and importance criteria.</p> <p>The ACEC would be managed as follows to protect cultural resources and rare habitats (vernal pools and wetlands that support slender Orcutt grass [<i>Orcuttia tenuis</i>]):</p> <ul style="list-style-type: none"> • ROW exclusion outside of existing ROWs. • OHV limited • Closed to mineral leasing • Closed to mineral materials development, unless for restoration purposes • Day use only. (**) • Not available for livestock grazing in riparian areas • VRM class II • Limit SRP and non-SRP group uses to minimize resource impacts in Spring and Fall. • Limit target shooting to designated areas. Engage with stakeholders to determine designated shooting areas. Identification of those areas would be analyzed and disclosed through subsequent implementation-level NEPA. (**) • Prioritize control of invasive, nonnative species. • Manage and add to the wetlands to provide for additional waterfowl habitat. • Manage for riparian relevance and importance values. • Prioritize prescribed burning (includes broadcast burning or isolated pile burning) to mimic natural fire return or to reintroduce fire into the ACEC that meets multiple resource objectives. • Prioritize land acquisition to maintain riparian connectivity and to selectively expand the National Register quality archaeological landscape. • Prioritize restoration for riparian areas. • Prioritize cultural resource interpretation at trailheads, parking lots and select locations. • Pursue barriers or gates to emphasize day use areas to protect natural and cultural resources. • Emphasize infrastructure at Bass Pond for recreational day use, including ADA facilities and hardened trails around the pond. • Prioritize trail management to reduce redundant and unsustainable trails. 	<p>Management Direction:</p> <p>The Sacramento River Bend ACEC (18,600 acres) designation would be carried forward. The ONA term would not be retained because it is not Congressionally- designated and would no longer be referred to as an ONA. The ACEC would be managed the same as Alternative B, with the following exceptions:</p> <ul style="list-style-type: none"> • VRM class III • Camping would be allowed at Perry Riffle (14-day limit). (**) 	<p>Management Direction:</p> <p>Same as Alternative B, with the following exceptions:</p> <ul style="list-style-type: none"> • Width expansions to existing ROW areas would be considered on a case-by-case basis. • Camping is prohibited within 0.25 miles of roads in the Sacramento Bend ERMA. (**) • VRM class III within the ACEC boundaries, VRM class II where Wild and Scenic WSR suitable segments are located as described in the WSR Suitability Report (Appendix I), VRM II in the Sacramento River Bend lands with wilderness characteristics unit (Subunit 2). • Public firewood cutting and collection would be permitted within the Sacramento River Bend ACEC only within 100 feet of established roads, trails, parking areas. Firewood collection would be limited to already downed trees and other woody vegetation. Felling of live or dead trees (snags) for the purposes of firewood harvesting is not permitted. Wood maybe be harvested only by hand no heavy equipment. Harvesting would not occur from April 15 through September 1 to avoid impacts to nesting migratory birds. • Work with state agencies and partners on anadromous fish habitat enhancement.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
279 (cont.)	(see above)	<ul style="list-style-type: none"> Focus the recreation program to balance and administer SRPs to conserve the identified recreation outcomes, manage visitor use, public access, protect recreational, cultural, and natural resources, and provide for the health and safety of visitors. Prioritize land acquisition for lands that contribute to ACEC relevance and importance values. Pursue easements for recreational and administrative access. 	(see above)	(see above)
280	Shasta and Klamath River Canyon ACEC			
281	Management Direction: Redding RMP 1993 Designate all public land in the Shasta River Canyon below the Highway 263 bridge crossing below Yreka Creek to the confluence with the Klamath River and within a quarter mile of the normal high-water mark as an ACEC (1,207 acres).	Management Direction: The Shasta and Klamath River Canyon ACEC designation (1,210 acres) would be retained. It would be managed according to the existing requirements of the Klamath WSR under Alternative A, with the following additional management to protect rare and sensitive riparian and fisheries habitat values: <ul style="list-style-type: none"> ROW avoidance outside of existing ROWs Not available for grazing VRM class III OHV limited Recommend for withdrawal from locatable mineral entry Closed to mineral leasing Closed to mineral materials development, unless for restoration purposes Work with state agencies and partners on anadromous fish habitat enhancement. 	Management Direction: The Shasta and Klamath River Canyon ACEC designation would not be retained.	Management Direction: The Shasta and Klamath River Canyon ACEC would be managed according to the requirements of the Klamath WSR identified under Alternative B.
282	South Fork Eel River RNA/ACEC			
283	Management Direction: Arcata RMP 1992 The South Fork Eel River RNA/ACEC (7,110 acres) is designated to protect anadromous fisheries, rare vegetation type, wildlife habitat (LSRs), unique botanical values associated with red, serpentine soils, and anadromous fishery (Cedar Creek).	Management Direction: The South Fork Eel River RNA/ACEC (7,110 acres) would not be carried forward because it is designated wilderness and would be managed under the Wilderness Act.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
284	Swasey Drive ACEC			
285	<p>Management Direction: Redding RMP 1993 The Swasey Drive Area is designated as an ACEC (468 acres). The ACEC would be management as follows:</p> <ul style="list-style-type: none"> • Conserve and interpret prehistoric and historic archaeological resources on public lands. • Semi-Primitive Motorized • OHV limited to designated roads and trails 	<p>Management Direction: The Swasey Drive Area ACEC would be combined with the internally nominated Upper and Lower Clear Creek ACEC and other nearby lands and renamed the Swasey Drive Clear Creek Greenway ACEC (see Swasey Drive Clear Creek Greenway ACEC row for management actions).</p>	<p>Management Direction: The Swasey Drive Area ACEC (470 acres) designation would be retained. The ACEC would be managed as to routinely assess impacts to cultural resources, such as historic ditches and roads, from ground disturbance by recreational users and in coordination with recreational staff.</p> <ul style="list-style-type: none"> • ROW avoidance • Not available for livestock grazing • VRM class III • Closed to mineral materials development • Closed to mineral leasing • Designated trails would continue to be maintained within the ACEC. • Consider trail re-routes to protect relevance and importance values. • Signage would use the following new name for the area: Swasey Recreation and Heritage Area • Develop a trail monitoring program to gauge impact to sedimentation and cultural resources • Promote a trail stewardship program • Establish an interpretive/educational center to assist the public in understanding the relevance and importance of the ACEC. BLM would collaborate with Tribes on development and presentation of materials at this center. • Limitations to large organized recreational groups would be implemented if monitoring indicates adverse impacts to cultural resources in the area. These potential future limitations could include: <ul style="list-style-type: none"> – Limitations on group size – Limitations of number of groups annually – Closure of impacted areas to organized events. • Allow for additional trail development only in designated areas with low potential for conflict or impacts to cultural or natural resources. • Future trailhead, road, and parking area improvements and expansions would only be allowed if they are consistent with relevance and importance values. • Future expansion of overflow and event parking would only be allowed if they are consistent with relevance and importance values. 	<p>Management Direction: Same as Alternative C, except additional trail development would not be allowed.</p>

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
286	Proposed ACECs			
287	Eden Valley ACEC			
288	Management Direction: No similar management action.	Management Direction: The Eden Valley ACEC (10,810 acres as internally nominated) would be designated. The ACEC would be managed as follows to protect rare and unique geologic features, rare and endemic plants and plant communities, and cold-water source for listed salmonids, and to conserve cultural and archeological values: <ul style="list-style-type: none"> • ROW avoidance • OHV limited • VRM class II (WSA); VRM class III (remaining area) • Closed to mineral leasing • Closed to livestock grazing. • Recommend for withdrawal from locatable mineral entry • Closed to mineral material development • Prioritize improved access through land acquisition or easements • Incorporate acquired adjacent lands into ACEC as appropriate and if consistent with maintaining relevant and important values • Prioritize rare plant surveys • Open to dispersed camping 	Management Direction: The Eden Valley ACEC would not be designated.	Management Direction: Same as Alternative B.
289	Grass Valley Creek ACEC			
290	Management Direction: Redding RMP 1993 If significant acreage is acquired in the Grass Valley Creek watershed, consider the area for an ACEC.	Management Direction: The Grass Valley Creek ACEC (19,560 acres) would be designated. The ACEC would be managed as follows to protect fragile highly erosive soils, reduce undesired sediment delivery to the Trinity River, and maintain the important stronghold to climate change and ecosystem resiliency and diversity: <ul style="list-style-type: none"> • ROW avoidance • OHV limited • VRM class III north of Hwy 299 • VRM class II south of Hwy 299 • Closed to mineral leasing • Recommend for withdrawal from mineral entry • Closed to mineral materials development, unless for restoration purposes • Not available for livestock grazing • Maintain existing roads to minimize erosion and sedimentation. • Area would be managed per the Grass Valley Fire Management Plan and subsequent fire management planning, to include the following: <ul style="list-style-type: none"> – Promote use of wildfire and prescribed fire to manage fuel loading and fire behavior. – Suppression techniques which result in the least amount of resource damage to the underlying granitic soils would be used. – The use of heavy mechanical equipment (i.e., dozers) would be restricted to existing roads to ensure passage for suppression equipment and crews unless otherwise authorized by the Redding BLM Authorized Officer. 	Management Direction: The Grass Valley Creek ACEC (13,090 acres) would be designated. The ACEC would be managed the same as Alternative B.	Management Direction: Same as Alternative B.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
291	Upper and Lower Clear Creek ACEC			
292	Management Direction: No similar management action.	Management Direction: No similar management action. (see Swasey Drive Clear Creek Greenway ACEC).	Management Direction: The Upper and Lower Clear Creek ACEC would not be designated.	Management Direction: The Upper and Lower Clear Creek ACEC (4,560 acres) would be designated. The ACEC would be managed as follows to protect and improve anadromous salmonid habitat and the scenic values of the Clear Creek canyon: <ul style="list-style-type: none">• ROW avoidance• OHV limited• VRM class III• Closed to mineral leasing• Recommend for withdrawal from locatable mineral entry• Closed to mineral materials development.• Not available for livestock grazing• Limited to day use only (*)• Prioritize riparian restoration and nonnative and invasive species management.• Prioritize nearby land acquisition in the ACEC that contribute to the relevance and importance criteria including maintenance of anadromous fish habitat.• Prioritize collaborative management and stewardship with local landowners, interest groups, and agencies.• Develop interpretive educational materials and signage to provide for safe recreational access and use of the area. This would include information regarding the difficulty of rapids on the creek.• SRPs for commercial guided fishing would not be issued.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
293	Swasey Drive Clear Creek Greenway ACEC			
294	<p>Management Direction: No similar management action (see the Swasey Drive ACEC).</p>	<p>Management Direction: The Swasey Drive Clear Creek Greenway ACEC (5,960 acres) would be designated. This ACEC is comprised of the existing Swasey Drive ACEC, the potential Upper and Lower Clear Creek ACEC, and other nearby areas. The Upper and Lower Clear Creek portion of the ACEC would be managed as follows:</p> <ul style="list-style-type: none"> • Prioritize riparian restoration and nonnative and invasive species management. • Develop interpretive educational materials and signage to provide for safe recreational access and use of the area. This would include information regarding the difficulty of rapids on the creek. • Prioritize riparian restoration and nonnative and invasive species management. • No SRPs for commercial outfitting for fishing would be issued within this ACEC. <p>The Swasey Drive portion of the ACEC would be managed as follows:</p> <ul style="list-style-type: none"> • Existing trails would continue to be maintained within the ACEC. No new trail development would occur within the ACEC. • Consider trail re-routes to protect relevance and importance values. • Signage would use a new name for the area: “Swasey Recreation and Heritage Area.” • Develop a trail monitoring program to gauge impact to sedimentation and cultural resources. • Promote a trail stewardship program. • Establish an interpretive/educational center to assist the public in understanding the relevance and importance of the ACEC. BLM would collaborate with the Native American Tribes on development and presentation of materials at this center. • Limitations to large organized recreational groups would be implemented if monitoring indicates adverse impacts to cultural resources in the area. These potential future limitations could include: <ul style="list-style-type: none"> – Limitations on group size – Limitations of number of groups annually – Closure of impacted areas to organized events. <p>The areas outside of the Swasey Drive and Upper and Lower Clear Creek portions of the ACEC would be managed as follows:</p> <ul style="list-style-type: none"> • ROW avoidance • OHV limited • VRM class III • Closed to mineral leasing • Closed to mineral materials development, unless for restoration purposes 	<p>Management Direction: The Swasey Drive Clear Creek Greenway ACEC would not be designated. See Swasey Drive ACEC under Alternatives C and D and the Upper and Lower Clear Creek ACEC under Alternative D.</p>	

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
294 (cont.)	(see above)	<ul style="list-style-type: none"> Recommend for withdrawal from locatable mineral entry Not available for livestock grazing Day use only (**) Prioritize nearby land acquisition in the ACEC that contribute to the relevance and importance criteria including maintenance of anadromous fish habitat and preservation of cultural resources. Prioritize collaborative management and stewardship with local landowners, interest groups, and agencies. 	(see above)	
295	Sheep Rock ACEC			
296	Management Direction: No similar management action.	Management Direction: The Sheep Rock ACEC (1,410 acres) would be designated. The ACEC would be managed as follows to protect irreplaceable scenic, wildlife, historic, and cultural values: <ul style="list-style-type: none"> ROW exclusion OHV limited VRM class II Closed to mineral leasing Closed to mineral materials development In the event that the USFWS proposes bighorn sheep reintroduction in this area, the ACEC would be unavailable for domestic sheep grazing or trailing. Prioritize for scientific studies Prioritize acquisition of lands nearby the ACEC. Pursue easements for administrative and public access. Maintain the Yreka Trail as available for cattle trailing. 	Management Direction: The Sheep Rock ACEC would not be designated.	Management Direction: Same as Alternative B.
297	Black Mountain ACEC			
298	Management Direction: No similar management action.	Management Direction: The Black Mountain ACEC (1,110 acres) would be designated. The ACEC would be managed as follows to protect irreplaceable old-growth coniferous forests habitat, unique geologic features, cultural resources, and wildlife: <ul style="list-style-type: none"> ROW exclusion OHV limited VRM class III Closed to mineral leasing Closed to mineral materials development Prioritize ACEC for access for scientific research 	Management Direction: The Black Mountain ACEC would not be designated.	Management Direction: Same as Alternative B.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
299	Upper Klamath Bench ACEC			
300	Management Direction: No similar management action.	Management Direction: The Upper Klamath Bench ACEC (90 acres) would be designated. The ACEC would be managed as follows to conserve the prehistoric historic, and Tribal resources: <ul style="list-style-type: none">• ROW exclusion• OHV closed• VRM class III• Closed to mineral leasing• Recommend for withdrawal from locatable mineral entry• Closed to mineral materials development• Not available for livestock grazing• Cultural sites may be fenced, and trespass livestock removed as needed to protect the cultural setting.	Management Direction: The Upper Klamath Bench ACEC would not be designated.	Management Direction: Same as Alternative B.
301	Upper Mattole ACEC			
302	Management Direction: No similar management action.	Management Direction: The Upper Mattole ACEC (460 acres) would be designated. The ACEC would be managed as follows to protect rare and sensitive riparian and fisheries habitat values: <ul style="list-style-type: none">• ROW avoidance• OHV limited• VRM class III• Closed to mineral leasing• Closed to livestock grazing• Prioritize fisheries restoration and forest management to promote late seral conditions• Prioritize acquisition of nearby parcels• Promote actions that increase summer stream flows (for example, forest management, beaver dam analogs, groundwater retention projects)• Manage projects to increase soil infiltration and groundwater recharge• Work with state agencies and partners on anadromous fish habitat enhancement.	Management Direction: The Upper Mattole ACEC would not be designated.	Management Direction: Same as Alternative B.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
303	Eden Creek ACEC			
304	Management Direction: No similar management action.	Management Direction: The Eden Creek ACEC would not be designated.	Management Direction: The Eden Creek ACEC (4,590 acres as externally nominated) would be designated. The ACEC would be managed as follows: <ul style="list-style-type: none"> • ROW avoidance • OHV limited • VRM class II (where overlaps with WSR corridor); VRM class III (remaining area) • No surface occupancy for mineral leasing • Recommend for withdrawal from locatable mineral entry • Closed to mineral materials development • Not available for livestock grazing. • Prioritize improved access through land acquisition or easements • Incorporate acquired adjacent lands into ACEC as appropriate and if consistent with maintaining relevant and important values • Prioritize rare plant surveys. 	Management Direction: The Eden Creek ACEC would not be designated. This proposed ACEC would be included within the boundary of the Eden Valley ACEC.
305	Beegum Creek Gorge ACEC			
306	Management Direction: No similar management action.	Management Direction: The Beegum Creek Gorge ACEC (4,380 acres) would be designated. The ACEC would be managed as follows to protect scenic, fisheries, and wildlife resources, ecological intactness, and rare and sensitive geological and lithological features that supports rare and endemic serpentine plant species: <ul style="list-style-type: none"> • ROW exclusion • OHV limited • VRM class II • Closed to mineral leasing • Not available for livestock grazing • Recommend for withdrawal from locatable mineral entry • Closed to mineral materials development • Prioritize scientific study • Pursue recreational development to increase non-motorized access to the gorge 	Management Direction: The Beegum Creek Gorge ACEC would not be designated.	Management Direction: Same as Alternative B.
307	North Fork Eel ACEC			
308	Management Direction: No similar management action.	Management Direction: The North Fork Eel ACEC (500 acres) would be designated. The ACEC would be managed as follows to protect sensitive geological and lithological features, along with fisheries, and wildlife resources: <ul style="list-style-type: none"> • ROW avoidance • OHV closed • VRM class II (WSR corridor); VRM class III (remaining acres) • Closed to mineral leasing • Closed to mineral materials development • Not available for livestock grazing • Prioritize acquisition along anadromous fish streams 	Management Direction: The North Fork Eel ACEC would not be designated. Old growth values would be managed under LSR designations.	Management Direction: Same as Alternative B.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
309	Willis Ridge ACEC			
310	Management Direction: No similar management action.	Management Direction: The Willis Ridge ACEC (3,180 acres) would be designated. The ACEC would be managed as follows to protect old- growth reserves, along with fisheries and wildlife resources: <ul style="list-style-type: none"> • VRM class III • ROW avoidance • OHV Limited • Closed to mineral leasing • Closed to mineral materials development • Prioritize acquisition along anadromous fish streams 	Management Direction: The Willis Ridge ACEC would not be designated. Old growth values would be managed under LSR designations.	Management Direction: Same as Alternative B.
311	South Spit ACEC			
312	Management Direction: The South Spit is not currently designated an ACEC. Arcata RMP 1992 and Supplementary Rules South Spit <ul style="list-style-type: none"> • Public lands are available for dispersed recreation. • Area is open for day use only 1 hour before sunrise to 1 hour after sunset). During brant season, gate opens at 4:00 a.m. • Day use only • No OHVs allowed except on vehicle access corridors and wave slope. No vehicles on wave slope within plover restoration area during plover season. • Dogs must be leashed on west side of Jetty Road during plover season. • No public use in plover restoration area during plover season. • Kites, model airplanes, and campfires not allowed within 300 feet of temporary or permanent plover protection areas. • Lands on west side of Jetty Road open to equestrian use; all other lands closed to equestrian use. • Firewood cutting or collecting is allowed by permit from Sept. 16 – Feb. 28. Casual collecting is allowed year-round. • Firearm use is allowed only for hunting of waterfowl during State season. Target shooting is not allowed. • Fireworks are not allowed. 	Management Direction: The South Spit ¹ ACEC (630 acres) would be designated once BLM acquires fee ownership. Upon acquisition, the ACEC would be managed as follows to protect sensitive wildlife, plant and wetland habitat and cultural resources: <ul style="list-style-type: none"> • ROW avoidance • OHV limited • VRM class III • Closed to mineral leasing • Closed to mineral materials development • Day use only • Prioritize conserving and recovering critically imperiled vegetation types (see Table 3.20 in the Analysis of the Management Situation) • Maintain and promote natural dune processes. • Maintain pristine condition of archaeological sites. • Prioritize acquisition within spit area. 	Management Direction: The South Spit ³ ACEC would not be designated. The area would be managed according to existing stipulations in the Conservation Easement (see Coastal Resources and Recreation sections).	Management Direction: The South Spit ¹ ACEC (630 acres) would be designated once BLM acquires fee ownership. Upon acquisition, the ACEC would be managed as follows to protect sensitive wildlife, plant and wetland habitat and cultural resources while continuing to provide access to dispersed recreation opportunities: <ul style="list-style-type: none"> • ROW avoidance • OHV limited • VRM class III • Closed to mineral leasing • Closed to mineral materials development • Day use only • Prioritize conserving and recovering critically imperiled vegetation types (see Table 3.20 in the Analysis of the Management Situation) • Maintain and promote natural dune processes. • Maintain pristine condition of archaeological sites. • In coordination with CDFW, consider state or federal acquisitions to protect additional acreage to support ACEC values • Public lands are available for dispersed recreation. • Area is open for day use only 1 hour before sunrise to 1 hour after sunset). During brant season, gate opens at 4:00 am. • Day use only • OHV wave slope access may be restricted on a case-by- case basis as necessary to protect nesting plovers and/or plover habitat • Dogs must be leashed on west side of Jetty Road during plover season. • No public use in plover restoration area during plover season. • Kites, model airplanes, UAVs and campfires not allowed within 300 feet of temporary or permanent plover protection areas. • Lands on west side of Jetty Road open to equestrian use; all other lands closed to equestrian use. • Firewood cutting or collecting is allowed by permit from Sept. 16 – Feb. 28. Casual collecting is allowed year-round. • Firearm use is allowed only for hunting of waterfowl during State season. Target shooting is not allowed. • Fireworks are not allowed.

³ Lands associated with South Spit ACEC are not currently owned by BLM. However, if acquisition by BLM were to occur the lands would be managed as an ACEC.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
313	Corning Vernal Pools ACEC			
314	Management Direction: No similar management action.	Management Direction: The Corning Vernal Pools ACEC (170 acres) would be designated. The ACEC would be managed as follows to protect habitat that supports threatened and endangered species: <ul style="list-style-type: none">• ROW exclusion• OHV closed• VRM class III• Closed to mineral leasing• Open to locatable mineral entry• Closed to mineral materials development• Prioritize prescribed burning (includes broadcast burning or isolated pile burning) to mimic natural fire or re- introduce fire into the ACEC that meets relevance and importance values.• Livestock grazing would be available if compatible with vernal pool ecology and relevant and important values.• Prioritize acquisition of adjacent land with vernal pools and hydrologic connection for existing pools• Prioritize acquiring administrative access with easements and acquisitions.	Management Direction: The Corning Vernal Pools ACEC would not be designated.	Management Direction: Same as Alternative B.
315	North Table Mountain ACEC			
316	Management Direction: <ul style="list-style-type: none">• No similar management action.	Management Direction: The North Table Mountain ACEC (50 acres) would be designated. The ACEC would be managed as follows to protect habitat that supports the rare Butte County Golden Clover (<i>Trifolium jokerstii</i>): <ul style="list-style-type: none">• ROW exclusion• OHV closed• VRM class III• Closed to mineral leasing• Recommend for withdrawal from locatable mineral entry• Not available for livestock grazing• Closed to mineral materials development• Prioritize acquisition of nearby land with vernal pools and hydrologic connection for existing pools and include those lands as part of the ACEC.• Acquire administrative access with easements and acquisitions.	Management Direction: The North Table Mountain ACEC would not be designated.	Management Direction: Same as Alternative B.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
317	National Scenic and Historic Trails			
318	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none">• Coordinate with NPS to develop added protections to the Yreka Trail corridor (part of the California National Historic Trail).• Manage National Scenic and Historic Trails in a manner that is consistent with provisions from applicable comprehensive management plans required by the National Trails System Act.• Manage for visual values of National Scenic and Historic Trails.• Manage for recreation values of National Scenic and Historic Trails.• Manage for the historic preservation values of National Historic Trails.• Work cooperatively with partners to develop consistent interpretation and educational themes across the landscape for National Scenic and Historic Trails.• Identify utility corridors that can cross the National Historic Trail alignments in non-contributing sections of the California NHT. Corridor infrastructure (especially visual features such as transmission lines) will not detract from the heritage values except where features are already in place. Future changes to existing infrastructure in corridors will not detract from the trail values.• Consider layered management of National Scenic and Historic Trails (i.e., other special designations such as ACECs)• Work towards acquiring non-public lands within the trail management corridor to provide for consistent management of the values for which the trail was designated. National Historic Trails acquisitions are arranged on a willing-seller basis only.• Inventory, maintain, and enhance the important qualities of high-potential National Trail segments and sites as defined in the National Trails System Act (NTSA).• Where practicable, avoid adverse effects to intact National Trail segments, their settings, and associated sites and interference with the resources associated with the nature and purpose of the trail.• Protect historic viewshed, trail traces, landmarks, artifacts, and other remains associated with National Trail to enhance historical research and public use and enjoyment.• Aim for no net loss of protected National Trail resources on BLM-managed public lands. BLM would also work cooperatively with other landowners with National Trail resources to compensate for net loss by developing opportunities to provide compensatory mitigation via acquisition of unprotected National Trail resources.• Identify, describe, and manage National Scenic and Historic Trails boundaries to protect values (per MS-6250, National Scenic and Historic Trail Administration, MS-6280, Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation, MS-8353, Trail Management Areas - Secretariially Designated National Recreation, Water, and Connecting and Side Trails, 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-I Cadastral Survey Handbook).		
319	Management Common to all Alternatives: <ul style="list-style-type: none">• Management for National Trails does not vary by alternative. There is no existing management included in the current RMPs. Coordinate with NPS to develop added protections to the Yreka Trail corridor (part of the California National Historic Trail).• Identify utility corridors that can cross the NHT alignments (and scenic trails) in non-contributing sections of the California NHT. Corridor infrastructure will not detract from the heritage values except where features are already in place. Future changes to existing infrastructure in corridors will not detract from the trail values.			
320	Management Direction: Nobles Trail Route of the California NHT <ul style="list-style-type: none">• Establish a 150-foot-wide national trail management corridor (NTMC) for the Nobles Trail route (1.5 miles on BLM-administered lands, Map 2-47 in Appendix A that would be managed as follows:<ul style="list-style-type: none">– OHV limited– VRM class II– No surface occupancy for mineral leasing– Recommend for withdrawal from locatable mineral entry– Closed to mineral materials development– Closed to camping– Surface-disturbing activities that are inconsistent with heritage values are prohibited– Open to administrative access– Emergency fire ingress and egress is allowed– ROW avoidance			

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
321	Management Direction: Yreka Trail Route of the California NHT <ul style="list-style-type: none">Establish a 150-foot-wide NTMC for the Yreka Trail route (1.7 miles on BLM-administered lands, Map 2-47 in Appendix A that would be managed as follows:<ul style="list-style-type: none">Cattle trailing would be allowed as part of the heritage value of the trailSurface-disturbing activities that are inconsistent with heritage values are prohibitedOHV closedOpen to administrative accessVRM Class IINo surface occupancy to mineral leasingRecommend for withdrawal from locatable mineral entryClosed to mineral materials developmentOpen to dispersed camping.ROW avoidance			
322	Wild and Scenic Rivers			
323	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none">Administer designated WSRs to protect and enhance the values (free-flowing condition, water quality, ORVs) that caused it to be designated. For suitable rivers, manage their free-flowing condition, water quality, tentative classification, and any outstandingly remarkable values until Congress designates the river or releases it for other uses. Designated WSRs and suitable rivers will be managed for the benefit and enjoyment of present and future generations, giving consideration to other resource values and uses. Continue to acquire lands in the wild and scenic corridor from willing sellers.Coordinate with Tribes in the management for ORVs related to traditional and cultural uses.Develop implementation level plans for management of previously designated VWSR segments.Identify, describe, and manage Wild and Scenic Rivers boundaries to protect values (per MS-6400, Wild and Scenic Rivers - Policy and Program Direction for Identification, Evaluation, Planning, and Management, 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-I Cadastral Survey Handbook).		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
324	<p>Management Direction: Designated WSRs Manage the designated Eel River, Klamath River, and Trinity River under the Wild and Scenic Rivers Act of 1968 and BLM Manual 6400 (totaling 52.0 miles; Map 2-48 in Appendix A). The rivers and their subsegments have the following classifications:</p> <ol style="list-style-type: none">1. Mainstem Eel River (1.8 miles Wild, 3.1 miles Recreational)2. Middle Fork Eel River (8.1 miles Wild, 4.2 miles Scenic)3. North Fork Eel River (4.6 miles Wild)4. South Fork Eel River (6.2 miles Wild, 0.9 miles Recreational)5. Van Duzen River (0.2 miles Recreational)6. Klamath River (3.4 miles Recreational)7. Trinity River (18.6 miles Recreational)8. North Fork Trinity River (0.8 miles Recreational) <p>Arcata RMP Forest Plan Amendment 1995 Designated components of the National Wild and Scenic Rivers System (NWSRS) within the plan amendment area include segments of the main stem Eel River, South Fork Eel River, North Fork Eel River, Middle Fork Eel River, Klamath River, and Van Duzen River. Designated river segments will be managed in accordance with the NWSRS; Final Revised Guidelines of Eligibility, Classification and Management of River Areas (47 FR39454, September 7, 1982) (WSR Guidelines) pending development of formal management plans and designation of corridor boundaries. The WSR Guidelines define the "river corridor" as the area measured horizontally, 0.25 miles from normal high water line on either side of the river. Management actions within designated river corridors will also comply with the NVFPA ACS and objectives and standards and guidelines for Key Watersheds, LSRs, and riparian management areas, where applicable. Those features of the interim guidance or standards and guidelines providing greater benefits to late successional forest-related species and attainment of Aquatic Conservation Strategy objectives will apply.</p>	<p>Management Direction: Designated WSRs</p> <ul style="list-style-type: none">• Existing designated WSRs (Eel River WSR [Mainstem Eel, Middle Fork Eel, North Fork Eel, South Fork Eel, Van Duzen], Klamath River, Trinity River WSR,) would be retained (totaling 52.0 miles). These are State-designated (Section 2(a)(ii) of WSR Act) rivers in both Redding and Arcata FOs. If a designated WSR does not have an identified management corridor, then the management corridor would be 0.25 miles on each side of the river until an implementation-level WSR management plan is completed.• The BLM would pursue perfecting existing federally-reserved water rights to protect and enhance ORVs on designated WSRs as needed. All designated rivers possess 'Fish' ORVs, and the Middle Fork Eel River possesses a 'Recreation' ORV.• The BLM will manage all designated WSRs to protect and enhance the river values of free-flowing condition, water quality, and ORVs in coordination with the classifications.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
325	<p>Management Direction: Manage the Trinity WSR (Mainstem Trinity and North Fork Trinity) as Recreational under the provisions of the Wild and Scenic River Act and the BLM Manual 6400. Additional management direction in the Redding RMP 1993:</p> <ul style="list-style-type: none"> Enhance recreation opportunities related to use of the Trinity River including mineral collection. Maintain scenic quality along the river corridor. Protect and enhance the anadromous fisheries of the Trinity River. Interpret and protect key cultural and natural resources for the public including the Helena Townsite, Rush Creek, Montana Cabin and Salt Flat. Maintain the riparian habitat in Class I or Class II condition. Resolve survey-related trespass uses. Consolidate and increase, as feasible, public ownership within areas of low intensity or undeveloped land uses which constitute the designated river corridor. Designate the corridor for this "Recreational" component of the National Wild and Scenic Rivers System. This variable width corridor excludes existing and approved developed land uses. Within developed areas, the corridor is limited to the riparian zone and, if appropriate, the undeveloped viewshed behind the developed area. Outermost boundaries of the corridors were established using the following criteria (in descending priority): definable topographic features, roads, surveyed ownership lines, line-of-sight, and 1/4 mile from normal high water. Due to scale, a very few small developed areas excluded from the corridor are not shown. Manage all public lands as VRM Class II. Manage all public lands within the corridor as Roaded Natural or Semi-Primitive Motorized. Limit motorized vehicle use to designated roads and trails. Allow forest management practices consistent with VRM Class II guidelines and special status species protection. All available commercial forest land would be managed for the enhancement of other resource values. Maintain existing withdrawals from mineral entry at Junction City and Douglas City campgrounds (58 acres and 140 acres respectively). Withdraw other proposed and developed public facilities from mineral entry. Withdraw specific cultural resources from mineral entry including Helena, Rush Creek, Ohio Flat, Salt Flat, and Montana Cabin. Withdraw anadromous fisheries habitat improvements from mineral entry including Steiner Flat and Cemetery Hole. New acquisitions in this area would not be opened for locatable mineral entry. Offer for mineral leasing with no surface occupancy within areas withdrawn from mineral entry. 	<p>Management Direction: The Trinity River WSR corridor (segments include Trinity River [main stem] and North Fork) would be managed as Recreational. The Trinity WSR has a designated management corridor as described in the 1993 Redding RMP below and as depicted on Map 2-49 in Appendix A. As mapping and surveys become more accurate, the WSR corridor may be modified to exclude developed areas in association with a Comprehensive River Management Plan or at the site-specific level.</p> <ul style="list-style-type: none"> The corridor excludes existing and approved developed land uses. Within developed areas, the corridor is limited to the riparian zone and, if appropriate, the undeveloped viewshed behind the developed area. Outermost boundaries of the corridors were established using the following criteria (in descending priority): definable topographic features, roads, surveyed ownership lines, line-of-sight, and 0.25 miles from normal high water. <p>Management of the Trinity WSR would be as follows:</p> <ul style="list-style-type: none"> VRM class II (segments from Douglas City Campground to Sky Ranch and Limekiln Gulch to Steel Bridge) and VRM class III (remainder of the Trinity WSR). OHV limited ROW avoidance (the BLM would determine if the ROW proposal is compatible with the river's classification and the protection and enhancement of river values. Incompatible proposals would not be allowed/modified to ensure compatibility). Closed to livestock grazing Closed to mineral leasing Closed to mineral materials development, unless for restoration purposes Surface-disturbing activities that are compatible with and fully protect or enhance identified WSR values may be permitted and would not otherwise cause unnecessary or undue degradation. Continue and maintain withdrawal from mineral entry Recreational development may be located inside the river corridor but should be designed to be protect and enhance river values and screened from view from the river to the extent possible. Habitat enhancement and vegetation management projects would be allowed where they can protect and enhance river values. Prioritize public lands acquisition with willing landowners within the boundary of WSR corridor. Collaborate with the Trinity River Restoration Program and prioritize river restoration projects. Monitor fishing impacts in conjunction with Trinity River Restoration Program and CDFW and determine if fish ORVs or the sustainability of the recreational angling opportunities are being adversely impacted. If adverse impacts are occurring, collaborate with the Trinity River Restoration Program and CDFW in determining management to reduce impacts to fisheries ORVs. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
325 (cont.)	<ul style="list-style-type: none">• Offer mineral material disposals only to enhance riparian vegetation, anadromous fisheries habitat or when not in conflict with the long-term protection of natural values.• Area is closed to livestock grazing.• Acquire available unimproved lands within the corridor.• Seek administrative transfer of three parcels (N1/2 Section 4, N1/2 Section 5, T. 32 N., R. 10 W., W ½ Section 29, All Section 30, All except W 1/2 of SW ¼ Section 31, and W 1/2 Section 32, T. 33 N., R. 10 W.) totaling approximately 1,450 acres from the Trinity National Forest.• Modify the existing Trinity River Recreation Area Management Plan to reflect the designated corridor of the Trinity River (i.e. a "Recreational" component of the National Wild and Scenic Rivers System). Continue implementation of recreational developments and monitoring prescribed in the existing management plan.• Publish Federal Register notice(s) regarding designation of the Trinity River corridor, mineral withdrawals, Interagency transfers, and road designations.	(see above)		
326	<p>Management Direction: Manage the Klamath WSR as Recreational under the provisions of the Wild and Scenic River Act and the BLM Manual 6400. Additional management direction in the Redding RMP 1993:</p> <ul style="list-style-type: none">• Restore riparian vegetation to Class II or better.• Enhance non-motorized recreation opportunities.• Protect historic and prehistoric resources within the area.• Enhance access for traditional uses of rivers by Native American Indians.• Establish a corridor for the segment of the Klamath River between River Mile 181 and the Klamath National Forest boundary (approximately 400 feet downstream of the mouth of Ash Creek) that does not exceed 1/4 mile above the normal high-water mark of this "Recreational" component of the National Wild and Scenic Rivers System.• Manage the area as Roaded Natural• Vehicle use is limited to designated roads and trails.• Manage future developments outside of public highway rights of way as VRM Class II.• The area is closed to livestock grazing.	<p>Management Direction: The Klamath River WSR would be managed as Recreational. Management would be as follows:</p> <ul style="list-style-type: none">• VRM class III• OHV limited• ROW avoidance (the BLM would determine if the ROW proposal is compatible with the river’s classification and the protection and enhancement of river values)• Closed to livestock grazing• Closed to mineral leasing• Mineral materials development may be allowed with application of necessary conditions to protect resource values.• Permitted surface-disturbing activities that are compatible with and fully protect identified values would be allowed and would not otherwise cause unnecessary or undue degradation.• Recreational development may be located inside the river corridor, but should be designed to be protect and enhance river values and screened from view from the river to the extent possible• Habitat enhancement and vegetation management projects would be allowed where they can protect and enhance river values.• Emphasize public lands acquisition within the boundary of designated segments.• Coordinate with agencies and partners in managing the river when Iron Gate and Copco Dams are removed.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
327	Management Direction: Manage the Wild segments of the Eel WSR (Mainstem Eel, Middle Fork Eel, North Fork Eel, South Fork Eel [20.7 miles]) under the provisions of the Wild and Scenic River Act and the BLM Manual 6400.	Management Direction: The Eel River WSR (Mainstem Eel, Middle Fork Eel, North Fork Eel, South Fork Eel [20.7 miles]) designated as Wild would be managed as follows: <ul style="list-style-type: none"> • VRM class II • ROW exclusion • OHV limited • Minimize route density to protect ORVs • Closed to mineral leasing • No permitted surface-disturbing activities (exception of permitted research activities consistent with maintaining ORVs) • Closed to mineral materials development • Recommend for withdrawal from mineral entry • Recreational development should be located outside the river corridor and not visible from the river • Habitat enhancement and vegetation management projects would be allowed where they can protect and enhance river values and be compatible with the area's essentially primitive condition. • Emphasize public lands acquisition along designated segments. 		
328	Management Direction: Manage the Scenic segments of the Eel WSR (Middle Fork Eel [4.2 miles]) under the provisions of the Wild and Scenic River Act and the BLM Manual 6400.	Management Direction: The Eel River WSR (Middle Fork Eel [4.2 miles]) designated as Scenic would be managed as follows: <ul style="list-style-type: none"> • VRM class II • ROW avoidance (the BLM would determine if the ROW proposal is compatible with the river's classification and the protection and enhancement of river values) • OHV limited • Closed to mineral leasing • Closed to mineral materials development • Permitted surface-disturbing activities that are compatible with and fully protect identified values would be allowed and would not otherwise cause unnecessary or undue degradation. • Existing or new mining activity would be conducted in a manner that minimizes surface disturbance. • Limited recreational development may be located inside the river corridor but should be designed to protect and enhance river values and screened from view from the river to the extent possible. • Habitat enhancement and vegetation management projects would be allowed where they can protect and enhance river values. • Prioritize public lands acquisition along designated segments. 		
329	Management Direction: Manage the Recreational segments of the Eel WSR (Mainstem Eel, South Fork Eel, Van Duzen [4.2 miles]) under the provisions of the Wild and Scenic River Act and the BLM Manual 6400.	Management Direction: The Eel River WSR (Mainstem Eel, South Fork Eel, Van Duzen [4.2 miles]) designated as Recreational would be managed as follows: <ul style="list-style-type: none"> • VRM class III • OHV limited • ROW avoidance (the BLM would determine if the ROW proposal is compatible with the river's classification and the protection and enhancement of river values) • Closed to mineral leasing • Mineral materials development may be allowed with application of necessary conditions to protect resource values. • Permitted surface-disturbing activities that are compatible with and fully protect identified values would be allowed and would not otherwise cause unnecessary or undue degradation. • Existing or new mining activity would be conducted in a manner that minimizes surface disturbance. • Recreational development may be located inside the river corridor but should be designed to protect and enhance river values and screened from view from the river to the extent possible. • Habitat enhancement and vegetation management projects would be allowed where they can protect and enhance river values. • Prioritize public lands acquisition within the boundary of designated segments. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
330	<p>Management Direction: Manage the Upper Klamath River (0.1 miles) as suitable for inclusion in the NWSRS (Map 2-49 in Appendix A) under the provisions of the the Wild and Scenic River Act and the BLM Manual 6400. Additional management direction in the Redding RMP 1993:</p> <ul style="list-style-type: none"> • Maintain the scenic quality of the river corridor. • Improve the condition of riparian vegetation to Class II or better. • Protect the cultural resources of the river corridor. • Improve semi-primitive non-motorized recreation opportunities. • This portion of the Klamath River is considered eligible and suitable for inclusion in the National Wild and Scenic Rivers System. All public land in the corridor bounded by the northern canyon rim and within 1/4 mile of normal high water along the southern bank will be managed in a manner which will not impair the outstanding remarkable values and consistent with a preliminary classification as "Scenic". • Manage area as Semi-Primitive Motorized. • Vehicle use is limited to designated roads and trails. • Manage area as VRM Class II. • The river corridor is closed to livestock grazing. • Offer public lands within the river corridor for mineral leasing with no surface occupancy. • Mineral material disposals are not allowed within the river corridor. • Acquire available unimproved lands within the area and/or develop cooperative management agreements with Pacific Power and Light or their successor(s). 	<p>Management Direction: Manage the Upper Klamath River (0.1 miles) as suitable for inclusion in the NWSRS (Map 2-50 in Appendix A) (BLM 2023).</p>	<p>Management Direction: No similar management action.</p>	<p>Management Direction: Manage the Upper Klamath River (0.1 miles) as suitable for inclusion in the NWSRS (Map 2-50 in Appendix A) (BLM 2023).</p>
331	<p>Management Direction: Manage eligible segments to protect their free-flowing condition, water quality, tentative classification, and any outstandingly remarkable values until a suitability determination can be made. Manage 117 river segments (totaling 201.7 miles) as eligible for inclusion in the NWSRS (Map 2-49 in Appendix A) (BLM 2023). Segments tentatively classified as Wild:</p> <ol style="list-style-type: none"> 1. Bear Creek Segment B 2. Beegum Creek 3. Bell Springs Creek 4. Bell Springs Creek Tributary 5. Board Tree Canyon 6. Butler Creek 7. Butte Creek 2 (Van Duzen River Tributary) 8. Butte Creek 2 Tributary 1 9. Butte Creek 2 Tributary 2 10. Cedar Creek Segment A 11. Cedar Creek Segment B 12. Cedar Creek Tributary 1 13. Cedar Creek Tributary 2 14. Chamise Creek 15. Chamise Creek Tributaries 16. Charlton Creek 17. Charlton Creek Tributaries 18. Eden Creek 	<p>Management Direction: New Suitable VWSRs Manage all 117 eligible river segments (totaling 201.7 miles, the same segments as in Alternative A) as suitable for inclusion in the NWSRS (Map 2-50 in Appendix A; Appendix I)</p>	<p>Management Direction: New Suitable VWSRs Manage the following river segments (totaling 14.2 miles) as suitable for inclusion in the NWSRS (Map 2-51) in Appendix A; Appendix I:</p> <ul style="list-style-type: none"> • Lacks Creek • Lacks Creek tributaries • Canyon Creek <p>All other eligible rivers and creeks revert to management direction provided in the Plan. The ORVs on these non-suitable segments would be protected through other means, such as those provided in the Plan (e.g., Riparian Management Areas, Water Quality, ACECs), as well as regulatory mechanisms such as the Endangered Species Act and Clean Water Act.</p>	<p>Management Direction: New Suitable VWSRs Manage 62 river segments (totaling 147.3 miles) as suitable for inclusion in the NWSRS (Map 2-52) in Appendix A; Appendix I: Segments preliminarily classified as Wild:</p> <ol style="list-style-type: none"> 1. Beegum Creek 2. Cedar Creek Segment A 3. Cedar Creek Segment B 4. Cedar Creek Tributary 1 5. Cedar Creek Tributary 2 6. Eden Creek 7. Eden Creek Tributary 1 8. Eden Creek Tributary 2 9. Elder Creek 10. Elder Creek Tributaries 11. Hayshed Creek 12. Indian Creek 1 (Trinity River Tributary) Segment A 13. Inks Creek 14. Inks Creek Tributary 15. Lacks Creek 16. Lacks Creek Tributaries 17. Middle Fork Cottonwood Creek Segment B 18. Misery Creek 19. North Fork Battle Creek

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
331 (cont.)	19. Eden Creek Tributary 1 20. Eden Creek Tributary 2 21. Elder Creek 22. Elder Creek Tributaries 23. Grindstone Creek 24. Hayshed Creek 25. Indian Creek I (Trinity River Tributary) Segment A 26. Inks Creek 27. Inks Creek Tributary 28. Lacks Creek 29. Lacks Creek Tributaries 30. Mattole River Segment A 31. Middle Fork Cottonwood Creek Segment B 32. Mill Creek 33. Misery Creek 34. North Fork Battle Creek 35. North Fork Cedar Creek 36. Paralyze Canyon and Tributaries 37. Sacramento River Bend Tributary I Segment A 38. Sacramento River Segment E 39. Sacramento River Segment G 40. South Fork Cottonwood Creek Segment A 41. Tenmile Creek 42. Thatcher Creek 43. Tom Long Creek 44. Tom Long Creek Tributaries 45. White Rock Creek Tributary 2 46. White Rock Creek Tributary 4 Segments preliminarily classified as Scenic: 47. Ancestor Creek 48. Baker Creek 49. Bear Creek Segment A 50. Big Chico Creek Segment A 51. Brin Canyon Creek 52. Butte Creek I Segment A 53. Butte Creek I Segment B 54. Casoose Creek 55. Cedar Gulch 56. Clear Creek Segment A 57. Clear Creek Segment B 58. Clear Creek Segment C 59. Coleman Creek 60. Cruso Cabin Creek 61. Deep Hole Creek 62. Deer Creek 63. East Branch South Fork Eel River 64. Elk Creek 65. Elkhorn Creek 66. Fish Creek 67. Fourmile Creek 68. Grub Gulch 69. Horse Canyon Creek 70. Hulls Creek Segment B 71. Indian Creek I (Trinity River Tributary) Segment B	(see above)	(see above)	20. North Fork Cedar Creek 21. Paralyze Canyon and Tributaries 22. Sacramento River Bend Tributary I Segment A 23. Sacramento River Segment E 24. South Fork Cottonwood Creek Segment A 25. Thatcher Creek Segments preliminarily classified as Scenic: 26. Brin Canyon Creek 27. Butte Creek I Segment B 28. Casoose Creek 29. Clear Creek Segment A 30. Clear Creek Segment B 31. Clear Creek Segment C 32. Deep Hole Creek 33. Elk Creek 34. Grub Gulch 35. Horse Canyon Creek 36. Hulls Creek Segment B 37. Indian Creek I (Trinity River Tributary) Segment B 38. Indian Creek I (Trinity River Tributary) Segment C 39. Massacre Creek 40. North Fork Cottonwood Creek 41. Paynes Creek 42. Sacramento River Bend Tributary I Segment B 43. Sacramento River Bend Tributary 2 44. Sacramento River Segment B 45. Sacramento River Segment F 46. Sevenmile Creek 47. Sevenmile Creek Tributaries 48. Shasta River Segment A 49. South Fork Cottonwood Creek Segment B 50. Turtle Creek 51. West Branch Butte Creek I 52. West Weaver Creek 53. West Weaver Creek Tributary Segments preliminarily classified as Recreational: 54. Battle Creek 55. Canyon Creek 56. Hulls Creek Segment A 57. Middle Fork Cottonwood Creek Segment A 58. Sacramento River Segment A 59. Sacramento River Segment C 60. Sacramento River Segment D 61. Shasta River Segment B 62. South Fork Battle Creek Consistent with the WSR classification, prioritize Tribal access as appropriate while protecting ORVs. All other eligible rivers and creeks revert to management direction provided in the Plan. The ORVs on these non-suitable segments would be protected through other means, such as those provided in the Plan (e.g., Riparian Management Areas, Water Quality, ACECs), as well as regulatory mechanisms such as the Endangered Species Act and Clean Water Act.

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
331 (cont.)	72. Indian Creek I (Trinity River Tributary) Segment C 73. Mad River 74. Massacre Creek 75. Mattole River Segment B 76. McAdam Creek 77. McAdam Creek tributary 78. North Fork Cottonwood Creek 79. Paynes Creek 80. Pipe Creek 81. Sacramento River Bend Tributary I Segment B 82. Sacramento River Bend Tributary 2 83. Sacramento River Segment B 84. Sacramento River Segment F 85. School Section Creek 86. School Section Creek Tributary I 87. School Section Creek Tributary 2 88. Scorpion Gulch 89. Sevenmile Creek 90. Sevenmile Creek Tributaries 91. Shasta River Segment A 92. Shell Rock Creek 93. Sholes Creek 94. South Fork Cottonwood Creek Segment B 95. Tomki Creek 96. Turtle Creek 97. West Branch Butte Creek I 98. West Weaver Creek 99. West Weaver Creek Tributary 100. White Rock Creek 101. White Rock Creek Tributary I 102. White Rock Creek Tributary 3 103. Woodman Creek 104. Eubank Creek 105. Mattole River Segment C Segments preliminarily classified as Recreational: 106. Battle Creek 107. Big Chico Creek Segment B 108. Canyon Creek 109. Hulls Creek Segment A 110. Indian Creek 2 (Eel River Tributary) 111. Middle Fork Cottonwood Creek Segment A 112. Rattlesnake Creek 113. Sacramento River Segment A 114. Sacramento River Segment C 115. Sacramento River Segment D 116. Shasta River Segment B 117. South Fork Battle Creek	Management Direction: The BLM will manage all suitable segments (Appendix I) to protect and enhance the free-flowing character and identified river values in coordination with the tentative classification and subject to prior existing rights. Individual projects within the VSR corridors (0.25 miles from normal high-water line on either side of the river) would be analyzed at the site-specific implementation level as needed. Management of suitable segments would be as follows: <ul style="list-style-type: none"> • Wild: <ul style="list-style-type: none"> – VRM class II – ROW exclusion – OHV limited (minimized route density to protect ORVs) – Closed to mineral leasing – No permitted surface-disturbing activities (exception of permitted research activities consistent with maintaining ORVs) – Closed to mineral materials development, unless for restoration purposes – Recommend for withdrawal from locatable mineral entry – Recreational infrastructure development should be located outside the river corridor and not visible from the river – Habitat enhancement and vegetation management projects would be allowed where they can protect and enhance river values and be compatible with the area's essentially primitive condition in the long-term. – Emphasize public lands acquisition along suitable segments • Scenic: <ul style="list-style-type: none"> – VRM class II – ROW avoidance (the BLM would determine if the ROW proposal is compatible with the river's classification and the protection and enhancement of river values) – OHV limited – Closed to mineral leasing – Closed to mineral materials development, unless for restoration purposes – Permitted surface-disturbing activities that are compatible with and fully protect identified values would be allowed and would not cause unnecessary or undue degradation. – Existing or new mining activity would be conducted in a manner that minimizes surface disturbance. – Limited recreational development may be located inside the river corridor but should be designed to protect and enhance river values and screened from view from the river to the extent possible. – Habitat enhancement and vegetation management projects would be allowed where they can protect and enhance river values. – Emphasize public lands acquisition along suitable segments. – In the limited cases where small hydropower projects are located within suitable segment corridors, the BLM would, within its authorities, protect the values which make the river suitable during the relicensing processes, while honoring the prior existing rights and withdrawals located in the corridors. • Recreational: <ul style="list-style-type: none"> – VRM class III – OHV limited – ROW avoidance (the BLM would determine if the ROW proposal is compatible with the river's classification and the protection and enhancement of river values) – Closed to mineral leasing – Mineral materials development may be allowed with application of necessary conditions to protect resource values. – Permitted surface-disturbing activities that are compatible with and fully protect identified values would be allowed and would not cause unnecessary or undue degradation – Existing or new mining would be conducted in a manner that minimizes surface disturbance. – Recreational development may be located inside the river corridor but should be designed to protect and enhance river values and screened from view from the river to the extent possible. – Habitat enhancement and vegetation management projects would be allowed where they can protect and enhance river values. – Emphasize acquisition of public lands along suitable segments. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
332	Wilderness Areas, Wilderness Study Areas, and Lands with Wilderness Characteristics			
333	Goals and Objectives: No similar goals and objectives	Goals and Objectives: <u>Wilderness</u> <ul style="list-style-type: none">• Preserve wilderness character in designated Wilderness Areas, as defined under the Wilderness Act of 1964.• Prioritize development of Wilderness Management Plans as funding is available.• Manage wilderness areas to protect values per BLM Manual 6340 - Management of BLM Wilderness.• Identify, describe and manage wilderness boundaries per BLM Manual 6340, 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-I Cadastral Survey Handbook. <u>Wilderness Study Areas</u> <ul style="list-style-type: none">• Manage and protect WSAs to preserve wilderness characteristics so as not to impair the suitability of such areas as per BLM Manual 6330 - Management of Wilderness Study Areas.• Identify, describe, and manage WSA boundaries per BLM Manual 6330, 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-I Cadastral Survey Handbook. <u>Lands with Wilderness Characteristics</u> <ul style="list-style-type: none">• Ensure allowable uses are consistent with management actions to preserve lands with wilderness characteristics.		
334	Wilderness			
335	Management Direction: The following areas would continue to be managed as wilderness areas (50,040 acres) under existing designation by Congress (Map 2-53 in Appendix A): <ol style="list-style-type: none">1. Elkhorn Ridge (11,120 acres)2. Yuki (17,150 acres)3. South Fork Eel River (13,020 acres)4. Yolla Bolly-Middle Eel (BLM-managed lands only) (8,550 acres)5. Ishi (200 acres)			
336	Management Direction: The designated wilderness areas listed above would be managed as follows: <ul style="list-style-type: none">• VRM class I• ROW exclusion• OHV closed• Closed to mechanized uses• Closed to mineral leasing• Withdrawn from locatable mineral entry• Closed to mineral materials development	Management Direction: The designated wilderness areas listed above would be managed as follows: <ul style="list-style-type: none">• Same as Alternative A, plus:• Prohibit taking off or landing of drones• Unavailable to grazing, except areas with existing leases that are found to be compatible with resource values.• Prioritize development of trailheads or access to wilderness areas, except within the Ishi Wilderness.• Vegetation, fuels treatments, and restoration would be implemented based on analysis using the Minimum Requirements Analysis Framework.• Facilitate Tribal access to wilderness areas with traditional Tribal values and uses.		
337	Management Direction: No similar management action.	Management Direction: Any new wilderness areas designated by Congress would also be managed to preserve wilderness character. Coordinate with the USFS to review and update/renew, as needed, the Ishi Wilderness MOU.		
338	Section 603 Wilderness Study Areas			
339	Management Direction: The following areas would continue to be managed as Section 603 WSAs (8,450 acres) under existing designation (Map 2-53 in Appendix A): <ol style="list-style-type: none">1. Big Butte (1,550 acres)2. Eden Valley (6,150 acres)3. Thatcher Ridge (150 acres)4. Yolla Bolly Contiguous (600 acres)			
340	Management Direction: The existing Section 603 WSAs listed above would be managed as follows: <ul style="list-style-type: none">• VRM Class I• ROW exclusion• OHV closed• Closed to mineral leasing• Closed to mineral materials development	Management Direction: The existing Section 603 WSAs listed above would be managed as follows: <ul style="list-style-type: none">• Same as Alternative A, plus:• Recommend for withdrawal from locatable mineral entry under the Mining Law of 1872 as amended.• Prioritize development of trailheads or access to WSAs, except within the Yolla Bolly Contiguous WSA• Unavailable to grazing except where grazing occurred prior to designation (e.g. Big Butte WSA)• Facilitate Tribal access to WSAs with traditional Tribal values and uses.		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
341	Management Direction: No similar management action.	Management Direction: If Congress releases Section 603 WSAs or portions of these WSAs, the BLM would continue to manage released lands to emphasize primitive recreation opportunities with the same management described above.	Management Direction: If Congress releases Section 603 WSAs or portions of these WSAs, the BLM would manage those released lands similar to the management of the surrounding non-wilderness areas.	
342	Management Direction: No similar management action.	Management Direction: Coordinate with the USFS to review and update/renew, as needed, the Big Butte WSA MOU.		
343	Section 202 Wilderness Study Areas			
344	Management Direction: No similar management action.	Management Direction: The following lands inventoried as having wilderness characteristics. These lands would be designated as Section 202 WSAs and managed under a non-impairment standard consistent with BLM Manual 6330 – Management of BLM Wilderness Study Areas in order to maintain the area’s suitability for preservation as wilderness (12,090 acres, Map 2-54 in Appendix A): <ol style="list-style-type: none"> 1. Brushy Mountain/English Ridge (5,500 acres) 2. Gilham Butte (5,840 acres) 3. Red Mountain (320 acres) 4. Trinity Alps (220 acres) 5. Yolla Bolly (Subunit 1 30 acres) 6. Yolla Bolly (Subunit 2 180 acres) 	Management Direction: No Section 202 WSAs would be designated.	Management Direction: The following lands inventoried as having wilderness characteristics would be designated as Section 202 WSAs and managed under a non-impairment standard consistent with BLM Manual 6330 – Management of BLM Wilderness Study Areas in order to maintain the area’s suitability for preservation as wilderness (540 acres, Map 2-56 in Appendix A): <ol style="list-style-type: none"> 1. Red Mountain (320 acres) 2. Trinity Alps (Subunit 4- 220 acres) Upon securing adequate public access, Brushy Mountain/English Ridge (Subunit 1- 5,500 acres) would also be designated a Section 202 Wilderness Study Area
345	Management Direction: No similar management action.	Management Direction: Section 202 WSAs would be managed as follows: <ul style="list-style-type: none"> • VRM class I • OHV closed • ROW exclusion • Closed to mechanized uses • Not available for livestock grazing except where grazing occurred prior to designation. • Mining and energy development <ul style="list-style-type: none"> – Where not already withdrawn, recommend for withdrawal from locatable mineral entry – Closed to mineral leasing – Closed to mineral materials development – Closed to renewable energy development • Development work, extraction, and patenting for locatable minerals would be allowed only on valid claims existing before withdrawal. • Prohibit taking off or landing of UAV except for BLM permitted activities • Prioritize development of trailheads or access to WSAs • Facilitate Tribal access to WSAs with traditional Tribal values and uses. 	Management Direction: No similar management action.	Management Direction: Same as Alternative B, with the following exception: <ul style="list-style-type: none"> • OHV limited

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
346	Lands with Wilderness Characteristics Managed as Priority			
347	Management Direction: No designation and management of lands with wilderness characteristics to protect wilderness characteristics as a priority over other multiple uses.	Management Direction: The lands with wilderness characteristics listed below would be managed to protect wilderness characteristics as a priority over other multiple uses (21,970 acres, Map 2-54 in Appendix A): <ol style="list-style-type: none"> 1. Cahto Peak (Subunit 1- 310 acres) 2. Camp St. Michael Subunits 3 and 4, (50 acres) 3. Chappie-Shasta (Subunit 3, 7,250 acres) 4. Grass Valley South (Subunit 1, 7,700 acres) 5. Sacramento River Bend (Subunit 2, 6,640 acres) 6. Yolla Bolly (Subunit 3, 20 acres) If future acquisitions adjacent to an inventory unit increase the size of the unit so that it meets the size criteria of 5,000 acres or cause the unit to become contiguous with designated wilderness or WSA, BLM would update the wilderness characteristics inventory for the unit.	Management Direction: The land with wilderness characteristics listed below would be managed to protect wilderness characteristics as a priority over other multiple uses (5,840 acres, Map 2-55 in Appendix A): <ol style="list-style-type: none"> 1. Gilham Butte (Subunit 1- 5,840 acres) If future acquisitions adjacent to an inventory unit increase the size of the unit so that it meets the size criteria of 5,000 acres or cause the unit to become contiguous with designated wilderness or WSA, BLM would update the wilderness characteristics inventory for the unit.	Management Direction: The lands with wilderness characteristics listed below would be managed to protect wilderness characteristics as a priority over other multiple uses (11,570 acres, Map 2-56 in Appendix A): <ol style="list-style-type: none"> 1. Brushy Mountain/English Ridge (Subunit 1- 5,500 acres)* 2. Gilham Butte (Subunit 1- 5,840 acres) 3. Yolla Bolly (Subunit 1- 30 acres) 4. Yolla Bolly (Subunit 2- 180 acres) 5. Yolla Bolly (Subunit 3- 20 acres) If future acquisitions adjacent to an inventory unit increase the size of the unit so that it meets the size criteria of 5,000 acres or cause the unit to become contiguous with designated wilderness or WSA, BLM would update the wilderness characteristics inventory for the unit. <ul style="list-style-type: none"> • Upon securing adequate public access, Brushy Mountain/English Ridge would be designated a Section 202 Wilderness Study Area.
348	Management Direction: No similar management action.	Management Direction: The lands managed to protect wilderness characteristics as a priority over other multiple uses under each alternative would be subject to the following: <ul style="list-style-type: none"> • VRM class II • OHV limited to designated routes • Mechanized use limited to designated routes • Vegetation management treatments that are specifically designed to provide for resource benefits, such as T&E species habitat protection will be allowed in these areas. Additionally, vegetation treatments including forest and fuels management treatments, specialty forest product collection and fire treatments, would be allowed provided that they are designed to protect the identified wilderness characteristics of the area over the long-term. Timber harvest may be allowed as a part of treatments with the primary objective of improving forest health. • Prohibit construction of new permanent roads • Prohibit taking off or landing of UAS except for BLM permitted activities • Mining and energy development <ul style="list-style-type: none"> – Recommend for withdrawal from locatable mineral entry – Closed to mineral leasing – Closed to mineral materials development – Closed to renewable energy development • Retain in federal ownership • Manage as ROW exclusion area • Consider acquisitions, exchanges, or other decisions that will increase the functional size of areas managed for wilderness characteristics • Prioritize acquisition of non-BLM parcels which are adjacent to lands with wilderness characteristics that contain similar values • Assess newly acquired parcels for wilderness characteristics. • Avoid construction of new structures and facilities unrelated to the preservation or enhancement of wilderness characteristics • Avoid or minimize adverse environmental effects by applying management restrictions (conditions of use, mitigation measures) • Where Recreation Management Areas and lands with wilderness characteristics that would managed as a priority overlap, recreational development would be limited to the types of recreation experiences that promote wilderness characteristics. • Consider impacts to wilderness characteristics in implementation-level decisions and avoid, minimize, or mitigate those impacts to the extent possible • Manage for supplemental values of wilderness – such as traditional Tribal values, geologic values, and TCPs • Facilitate Tribal access to lands with wilderness characteristics with traditional Tribal values and uses. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
349	Lands with Wilderness Characteristics Managed to Minimize Impacts			
350	Management Direction: No similar management action.	Management Direction: No lands with wilderness characteristics would be managed to minimize impacts to wilderness characteristics while emphasizing other uses.	Management Direction: The lands with wilderness characteristics listed below would be managed to minimize impacts to wilderness characteristics while emphasizing other uses (28,220, Map 2-55 in Appendix A): <ul style="list-style-type: none"> • Brushy Mountain/English Ridge (Subunit 1- 5,500 acres) • Cahto Peak (Subunit 1- 310 acres) • Camp St. Michael Subunits 3 and 4, (50 acres) • Red Mountain (320 acres) • Yolla Bolly (Subunits 1, 2, and 3- 240 acres) • Chappie-Shasta (Subunit 3- 7,250 acres) • Grass Valley South (Subunit 1- 7,700 acres) • Sacramento River Bend (Subunit 2- 6,640 acres) • Trinity Alps (Subunit 4- 220 acres) Consider impacts to wilderness characteristics in implementation-level decisions and minimize those impacts to the extent practicable while emphasizing other resource/use objectives	Management Direction: The lands with wilderness characteristics listed below would be managed to minimize impacts to wilderness characteristics while emphasizing other uses (21,950, Map 2-56 in Appendix A): <ul style="list-style-type: none"> • Cahto Peak (Subunit 1- 310 acres) • Camp St. Michael Subunits 3 and 4, (50 acres) • Chappie-Shasta (Subunit 3- 7,250 acres) • Grass Valley South (Subunit 1- 7,700 acres) • Sacramento River Bend (Subunit 2- 6,640 acres) Consider impacts to wilderness characteristics in implementation-level decisions and minimize those impacts to the extent practicable while emphasizing other resource/use objectives
351	Socioeconomics and Environmental Justice			
352	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <u>Socioeconomics</u> <ul style="list-style-type: none"> • Create a variety of recreation and public use opportunities that will also provide opportunities for forest management, mineral development, and restoration activities that benefit local communities. <u>Environmental Justice</u> <ul style="list-style-type: none"> • Work with USFS, Bureau of Reclamation, NPS, Shasta Regional Transportation Agency, Tribes, and local partners to plan and develop trail connections for recreation use and to provide travel for disadvantaged communities. <u>Recreational Equity</u> <ul style="list-style-type: none"> • Provide recreational opportunities and equity for diverse user groups, partners, the greater community and visiting populations in the administration of recreational access, planning and programming, encouraging socioeconomic development, and promoting responsible recreation and stewardship. Develop visitor services that are accessible to all user groups. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
353	<p>Management Common to all Action Alternatives Management for socioeconomics and environmental justice does not vary by alternative. There is no existing management direction included in the current RMPs.</p> <p>Socioeconomics</p> <ul style="list-style-type: none"> Utilize contracts and agreements with local non-profits and commercial vendors, volunteers, Tribes, and NGOs to help manage public lands and encourage socioeconomic development (e.g., vegetation, maintain trails, construct, and maintain facilities, and conduct monitoring). Work cooperatively with State of California, counties, Tribes, and local partners to enhance recreation and natural and cultural resource management along rivers in the planning area (such as boat launches, fishing, picnic, day-use areas, etc.). Forest management – While managing for forest health, provide opportunities for harvest and collection of: <ul style="list-style-type: none"> Commercial timber Non-timber forest products Biomass Individual and commercial firewood Provide for small scale mineral exploration and development as practicable. Provide opportunities for local communities and Tribes through planning and implementation of restoration activities. R&PP Act lease applications for low-income or homeless housing or other associated facilities would be considered on a case-by-case basis on lands identified for disposal. The proposed use would need to comply with this RMP; Section 212 of FLMPA; and 43 CFR 2740 and 2912. <p>Environmental Justice</p> <ul style="list-style-type: none"> Work with USFS, Bureau of Reclamation, NPS, Shasta Regional Transportation Agency, and local partners to plan and develop access for underserved communities. Consistent with existing Executive Orders, Secretarial Orders, and existing laws and regulatory requirements, BLM would consider environmental justice impacts, including those impacts arising from climate change, in its decision-making process. <p>Recreational Equity</p> <ul style="list-style-type: none"> ADA mobility devices would be allowed on routes that are consistent with safe use by those devices. Increase and prioritize development of recreational opportunities in historically underserved communities. Develop ADA/ABA access points where feasible. Throughout all ERMAs and SRMAs, support free or low expense, inclusive facilitated experience programs that introduce people to outdoor recreation activities in a safe and supportive environment. Develop visitor services information in multiple languages, including braille where appropriate. Use adaptive management to understand and respond to the diversity of outdoor recreation styles among demographics. 			
354	Tribal Interests			
355	<p>Goals and Objectives: No similar goals and objectives.</p>	<p>Goals and Objectives:</p> <ul style="list-style-type: none"> Build, strengthen, and maintain relationships with federally recognized and non-federally recognized Tribes through training, projects, partnerships, and sharing information. Fulfill the Trust Responsibility to Tribes in the Stewardship of BLM-managed federal lands and waters that are the ancestral homelands of numerous Tribes within the planning area, as directed by BLM Permanent Instruction Memorandum 2022-011 pursuant to Secretary's Order (SO) 3403. Acknowledge and affirm that cooperation with federally recognized and non-federally recognized Tribes and Tribal individuals, in accordance with legal and ethical requirements (including Executive Order 13175), adds equitable, social, economic, and ecological value to all of BLM's responsibilities. Consistent with existing laws and regulations, allow for the use of traditional Tribal land/ resource management practices to manage lands and rivers for the benefit of fish, wildlife, and production of other culturally important natural products and resources. Address Tribal concerns and where, when, and how management practices affect Tribal socio-cultural and religious values. In cooperation with appropriate Federal and State agencies, acknowledge and define Tribal trust responsibilities and resources that include aquatic trust resources such as water rights and fish, including salmon, steelhead, sturgeon, lamprey, and other native fish. Facilitate federally recognized and non-federally recognized Tribal use of federal lands and resources traditionally used for cultural and spiritual purposes consistent with existing laws and regulations. Manage and adequately protect cultural resources identified within the NCIP plan area that highlight tribal history. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
356	Management Common to All Alternatives <ul style="list-style-type: none"> • Management for Tribal Interests does not vary by alternative. There is no existing management included in the current RMPs. • Engage with Tribes in meaningful consultation to provide Tribes an opportunity to shape the direction of BLM's land management activities, as per IM 2022-01 I, and to build both Tribal and Federal capacity to carry out Secretary's Order 3403. • Actively seek Tribal input on an ongoing basis to ensure that BLM achieves the stated objective to "make a reasonable and good-faith effort to identify and consider contemporary Tribal concerns where projects might affect socio-cultural and religious values." • Continue use of agreements (such as Inter-Agency Agreements and Good Neighbor Authority) to collaborate on resource restoration/management projects. • Consistent with existing Executive Orders, Secretarial Orders, and existing laws and regulatory requirements, avoid adversely affecting the physical integrity, accessibility, or use of sacred sites. • Work with Tribes to apply Indigenous Knowledge in relation to localities within the planning boundaries to provide a long-term perspective in land use and management. Incorporate Indigenous Knowledge into management where practicable, and protect sensitive information provided by Tribes to the extent possible under Federal law. • Manage lands with particular connections to Tribes with explicit and focused attention to economic, cultural, social and ecological Tribal interests. Adhere to the principles set forth in SO 3403 and permanent IM 2022-01 I: <ul style="list-style-type: none"> – All BLM lands in the NCIP planning area are considered suitable for co-stewardship and co-management. – Work cooperatively with Tribes to conduct appropriate vegetation and wildlife management treatments (including cultural burning) to facilitate their ability to gather and use traditional plants and wildlife. – Work cooperatively with Tribes on management of wildlife and fishery resources. – Provide Tribes access to gather plant products, including individual firewood, biomass, seed, etc. – Prioritize development of agreements in place with local Tribes to provide opportunities to work with the BLM on common resource management concerns. – Coordinate with Tribes on attending training opportunities – Cooperate with legislative efforts to help unrecognized Tribes that receive recognition to receive a land base or help recognized Tribes to increase their land base. Consider R&PP leases or patents where appropriate. • Provide access to Tribes for natural, medicinal, and sacred resources or places. Consider the designation of Black Mountain and Stringtown Mountain as a Traditional Cultural Places and develop administrative access to those sites. Engage with Tribes to identify areas of significance and importance, including additional Traditional Cultural Places and Sacred Areas. • Seek out co-stewardship agreements with Tribes, agencies, private individuals, and private entities as practicable to achieve cultural resource management and preservation goals. • Seek out other types of cooperative agreements, such as those under the Good Neighbor Authority, with Tribes to achieve mutually desired resource management and preservation goals. Incorporate best available climate data, such as EcoAdapt climate change vulnerability studies, with available and appropriate Tribal Indigenous Knowledge into the planning and decision-making process. 			
357	Public Health and Safety/Hazardous Materials			
358	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: <ul style="list-style-type: none"> • Identify areas where hazardous materials or other public health and safety issues are present and identify management restrictions to minimize or mitigate contributing factors. • Identify and follow management direction for handling of hazardous materials by both permitted and administrative activities. • Minimize impacts to public safety on public lands. • Use effective reporting mechanisms for incidents involving accidental hazardous material releases. 		

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
359	<p>Management Common to All Alternatives Public health and safety and hazardous materials management does not vary by alternative. There is no existing management direction included in the current RMPs.</p> <p>Public Health and Safety</p> <ul style="list-style-type: none"> Consider management actions that limit access or sign problematic areas to control illegal dumping. Work with local communities to install tsunami sirens as necessary. All ROW applications would include consideration of needs for protection and monitoring related to potential of the project to cause wildfire ignitions and the potential for wildfire response. Develop and implement Emergency Stabilization and Rehabilitation (ES&R) strategies for areas impacted by recent wildfires to help stabilize denuded slopes and reduce erosion and sedimentation where possible. Pursue closing abandoned mines to address public health and safety issues while providing for scientifically acceptable means of bat passage. Coordinate with local law enforcement to provide for more regular patrols of BLM lands with enforcement problems. Where possible, enter into MOUs with Tribes, state, and local law enforcement to facilitate this process. Improve roads to facilitate emergency access and egress, as where appropriate. In order to avoid conflicts between mountain biking and hunting, ensure interpretive materials (signage, kiosks, brochures) educate recreationists regarding hunting as a use of the ERMA (Alternative D only) Consider seasonal limitations on mountain biking in Lacks Creek as necessary to limit conflict and provide for public safety. ROW holders will remove or abate hazard trees, including trees or vegetation that could cause wildfire ignition. Prioritize removal and clean-up of trespass cannabis cultivation sites that present risks to public health and safety or natural and cultural resources. Coordinate with Department of Defense, Drug Enforcement Agency, National Guard, state and local law enforcement in the identification and clean-up of trespass cannabis cultivation sites. BLM would work with permittees to maintain roads to critical infrastructure such as communication towers and would coordinate with the fire protection agency to prioritize fire protection for this infrastructure. Management of firearm use: <ul style="list-style-type: none"> In compliance with 43 CFR 8365.2-5 (a), discharge of firearms including recreational target shooting is prohibited in all developed recreation sites with the exception of designated target shooting areas. No exploding targets without permission from the BLM Authorized Officer. Shooting targets must be untreated wood, paper, cardboard or metal silhouette. Any other form of glass, plastic or metal used for target shooting is prohibited. Non-toxic clay pigeons would be allowed. Tracer rounds, ammunition considered to be incendiary or explosive, and body armor piercing ammunition would not be allowed. Steel core ammunition would not be allowed. All other forms of projectiles such as paintball, airsoft or any other form would be prohibited at developed recreation sites. Any paintballing or airsoft projectiles uses outside of developed recreation sites would be required to be biodegradable. <p>Hazardous Materials</p> <ul style="list-style-type: none"> All BLM-permitted activities would comply with all applicable federal and state laws, regulations, and policy regarding use of hazardous materials. Hazardous materials include fuel and oil, Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Hazardous Substances, Resource Conservation and Recovery Act (RCRA) Hazardous Waste, Hazardous Materials as identified by 49 CFR Part 397. Chemical treatments on BLM lands would be consistent with programmatic guidance included in the Final Programmatic EIS and Record of Decision for Vegetation Treatments using Herbicides on BLM Lands in 17 Western States (BLM 2007) and Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (BLM 2016) and applicable subsequent IMs (e.g., CA IM-2009-030) and/or applicable subsequent programmatic guidance. Per federal policy on <i>Protective Actions Regarding Per- and Polyfluoroalkyl Substances</i> (PFAS), discontinue the purchase and use of products containing PFAS, whenever feasible, paying particular attention to firefighting foam. All BLM-permitted activities using hazardous materials would comply with BMPs provided in Appendix F. All withdrawals relinquished to the BLM would be required to complete a Phase I Environmental Site Assessment documenting potential existing environmental liabilities. If environmental liabilities are identified, the holder of the withdrawal would be required to complete cleanup prior to relinquishment. An updated Phase I Environmental Site Assessment would then be completed to document cleanup and that there are no known environmental liabilities remaining on the property. BLM would prioritize cleanup of hazardous materials sites with eminent or existing discharge of hazardous materials based on the following criteria: <ul style="list-style-type: none"> Threatens public health and safety Adversely impacts drinking water sources Occurs within or adjacent to riparian management areas Impacts essential fish habitat (EFH) Impacts habitat for federally and/or state listed or BLM sensitive species Impacts cultural resources and traditional Tribal resources such as plant products. Project operator would be responsible for cleanup associated with any of their activities. Coordinate with CalTrans, CDFW, Coast Guard, NOAA, NMFS, USFWS and other agencies as needed to respond to hazardous material spills. Notify the BLM State Office Hazardous Material Management Program Lead when hazardous materials are encountered on public lands. In California, any significant release or threatened release of a hazardous material requires immediate reporting by the responsible person to the California Office of Emergency Services State Warning Center (800) 852-7550 and the Unified Program Agency (UPA) or 911. Notifying the State Warning Center (800) 852-7550 and the UPA or 911 constitutes compliance with the requirements of Section 11004 of title 42 of the USC regarding verbal notification of the SERC and LEPC (California Code of Regulations, Title 19 Section 2631 (e)). 			

Row	Alternative A (Existing Management)	Alternative B	Alternative C	Alternative D (Proposed Alternative)
360	Education and Interpretation			
361	Goals and Objectives: No similar goals and objectives.	Goals and Objectives: Education and Interpretation <ul style="list-style-type: none">Facilitate connections between visitors and the natural, cultural, and recreational resources within the NCIP planning area, so visitors may develop an understanding of the complexity of resource and stewardship values.Foster partnerships with Tribes, non-profit organizations, educational institutions, stakeholder groups and the public within the NCIP planning area to broaden the reach of public land stewardship.Strengthen the capacity of partners to develop and deliver quality interpretive programing and products.Work with community partners to develop interpretive programing and stewardship.Create outdoor classroom educational sites within the NCIP planning area.Continue to develop cultural heritage programs to foster appreciation for study and conservation of cultural and archaeological resources.Emphasize national education and awareness campaigns.Provide education and/or interpretation on fire prevention practices for visitors to BLM lands.Use best technology available and emerging technology to educate the public and interpret resources.Utilize innovative education and interpretation opportunities.Integrate education and interpretation into planning for special designation and resources uses. Research <ul style="list-style-type: none">Provide opportunities for scientific research on public lands.		
362	Management Common to all Action Alternatives Management actions for education and interpretation do not vary by action alternative. There is no existing management direction included in the current RMPs. Education and Interpretation <ul style="list-style-type: none">Develop a comprehensive interpretive plan or plans for the planning area. The interpretive plan(s) would follow BLM guidelines as well as defining the BLM’s overall interpretation and education vision, goals, themes, strategies, and opportunities. The plan would include a long-range implementation strategy that includes partnership development, staffing needs, and program costs.Interpret and protect key cultural, historical, and natural resources for the public. Priorities for interpretation will be sites of high public interest that receive high visitation or are at risk for damage (see <i>Cultural Resources</i> section for more information on specific cultural sites).Promote the use of citizen science on public lands to support education and site or resource-specific monitoring goals.Cultural sites would only be used for interpretation if it does not impact integrity of those sites or conflict with Tribal values.Cultural sites with Tribal affiliation would be interpreted in collaboration with Tribes.Prioritize opportunities to interpret unique coastal resources through collaboration with adjacent landowners and partners.Promote the understanding of fire’s role in ecosystems in the planning area and how both fire prevention and the use of fire as a management tool are important for resources in the planning area.Continue interpretive emphasis and environmental education programs in high visitation areas or areas with a special designation.Pursue integrated interpretation of restoration activities in coordination with Tribes.Develop visitor services information in multiple languages, including braille.Provide the public information regarding the location of accessible (e.g., ADA) recreation opportunities.Promote public education programs to assist trail users in stewardship of the trail systems.Facilitate relationships with schools on public lands. Research <ul style="list-style-type: none">Facilitate research and educational uses in the planning area.Use assistance agreements and other means (e.g., permits) for research for key cultural and natural resource areas.Collaborate and consult with Tribes regarding research in areas of special cultural and natural significance to the Tribes.Work with Tribes to gather Indigenous Knowledge in relation to localities within the planning boundaries to provide a long-term perspective. Use Indigenous Knowledge to inform research design.Prioritize forest resiliency and ecosystem dynamics research resulting from changing environmental conditions.Make natural and cultural collections available under the existing permit system as appropriate to scientists and Tribes or make available to the appropriate systems for research opportunities.Ensure data is available for agencies and partners to assist in collaborative management (e.g., nonnative and invasive species tracking).Permits<ul style="list-style-type: none">BLM would authorize research and monitoring proposals under 43 CFR 2920, Leases, Permits, and Easements through issuance of a Special Use Permit.Several factors would be considered in evaluating proposed research. The primary factor for approval is a showing that the research contributes useful information about the resources and their effective management or makes meaningful contributions in addressing questions important to science or society.			

Appendix C

Approach to the Environmental Analysis

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TABLE OF CONTENTS

Chapter	Page
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APPENDIX C. APPROACH TO THE ENVIRONMENTAL ANALYSIS.....C-I

C.1	Introduction	C-1
C.1.1	Past, Present, and Reasonably Foreseeable Future Actions	C-1
C.2	Resource Methodology, Indicators, and Assumptions.....	C-9
C.2.1	Analytical Assumptions.....	C-9
C.2.2	Air Quality and Climate	C-10
C.2.3	Soil Resources	C-11
C.2.4	Water Resources.....	C-15
C.2.5	Vegetation.....	C-18
C.2.6	Wildlife	C-24
C.2.7	Fish and Aquatic Species	C-28
C.2.8	Coastal Resources and Management	C-32
C.2.9	Wildland Fire Ecology and Management	C-33
C.2.10	Cultural Resources.....	C-36
C.2.11	Paleontological Resources	C-38
C.2.12	Visual Resources	C-41
C.2.13	Lands with Wilderness Characteristics	C-43
C.2.14	Cave and Karst.....	C-45
C.2.15	Forestry.....	C-46
C.2.16	Lands and Realty	C-48
C.2.17	Energy and Minerals	C-50
C.2.18	Recreation and Visitor Services	C-52
C.2.19	Travel and Transportation Management.....	C-54
C.2.20	Livestock Grazing	C-55
C.2.21	Renewable Energy	C-56
C.2.22	Areas of Critical Environmental Concern	C-57
C.2.23	National Scenic and Historic Trails	C-58
C.2.24	Wild and Scenic Rivers.....	C-59
C.2.25	Wilderness and Wilderness Study Areas.....	C-60
C.2.26	Social and Economic Conditions.....	C-63
C.2.27	Environmental Justice.....	C-64
C.2.28	Tribal Interests	C-65
C.2.29	Public Health and Safety	C-67
C.2.30	Interpretation and Environmental Education.....	C-69

TABLE	Page
-------	------

C-I	Past, Present, and Reasonably Foreseeable Future Actions Considered in the Cumulative Effects Analysis	C-2
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Appendix C. Approach to the Environmental Analysis

C.I INTRODUCTION

This appendix presents the background for and approach to identifying the environmental, social, and economic impacts on the human and natural environment that are predicted to result from implementing the alternatives presented in **Appendix B**. The goals, objectives, and management actions described in **Appendix B** by alternative are plan-level decisions and do not result in direct, on-the-ground changes. Plan-level decisions establish allocations that identify the uses that are allowed, restricted, or prohibited on BLM-administered lands and federal mineral estate. These allocations set the stage to guide future land management actions and subsequent site-specific or implementation decisions and the corresponding resource use levels.

Because the alternatives provide a broad management framework, the exact location, timing, and level of development or resource extraction are not known and cannot be accurately predicted. The actual levels of activities may be more than or less than the levels estimated for analysis purposes; however, the estimated levels allow the BLM to analyze and display the relative differences among the alternatives.

Impact analyses and conclusions are based on interdisciplinary team knowledge of the resources and the planning area, information provided by experts in the BLM, monitoring data and information contained in pertinent literature, and professional judgment. The baseline used for the impact analysis is the current condition or situation, as described in the *Affected Environment* section of **Chapter 3** (see **Appendix D** for full chapter).

The methodology for the impact assessment conforms to the guidance found in the following sections of the Council on Environmental Quality regulations for implementing the National Environmental Policy Act (NEPA): 40 Code of Federal Regulations (CFR) 1502.23 (Methodology and Scientific Accuracy), 40 CFR 1502.16 (Environmental Consequences) and cumulative impacts as defined in 40 CFR 1508.1. Direct, indirect, and cumulative methodology is included in **Section D.1** of **Appendix D**.

C.I.1 Past, Present, and Reasonably Foreseeable Future Actions

Recent environmental reports, surveys, research plans, NEPA compliance documents, and other source documents were evaluated to identify past, present, and reasonably foreseeable future actions. These actions were assessed to determine if they were speculative and would occur within the analytical timeframe of the NCIP. Projects and activities considered in the cumulative effects analysis are summarized in **Table C-1**.

Table C-1
Past, Present, and Reasonably Foreseeable Future Actions Considered in the Cumulative Effects Analysis

Human and Natural Actions that Contribute to Cumulative Impacts	
Energy and Minerals Development – Mineral Materials	Outside of BLM-administered permits (see BLM2021a), there are several large aggregate mines on private land within the planning area, including several along Clear Creek Road, the Trinity River, and in the Bend area.
Water Resources – Water Quantity	<p>Water demands continue to increase with population increase and climate change continues to exacerbate streamflow issues (i.e., decreasing summer low flows). Summer low flows have decreased in Northern California coastal streams and this trend is expected to continue. Flow variability is expected to increase, and for California as a whole, higher winter flows are expected. The extent and seasonality of snowpack is expected to decrease in response to climate change. Snow depths are expected to decrease over the winter months and the period of accumulation is expected to shrink by 1 month (EcoAdapt 2016; Cayan et al. 2008; Snyder et al. 2004; Thorne et al. 2015). These changes in snow accumulation will affect the magnitude and duration of streamflows. Drought frequency is expected to increase over the coming century. Over the next several decades, drought years are twice as likely to occur, with increased risk of multi-year droughts exacerbated by warming air temperatures (EcoAdapt 2016; Diffenbaugh et al. 2015; Griffin and Anchukaitis 2014).</p> <p>Lower Klamath Dam Removals (Federal Energy Regulatory Commission): The Lower Klamath Project is located along the Klamath River, in Siskiyou County, California, and in Klamath County, Oregon. The project would remove four dams (JC Boyle, Copco No. 1 and No. 2, and Iron Gate) to and restore formerly inundated lands. Water flows in the lower Klamath watershed would more closely mimic natural variability and water quality related to low flows and high-water temperature will be improved.</p> <p>Trinity River Restoration Program (TRRP) Winter Flow Variability (Bureau of Reclamation [BOR]): The TRRP is updating the timing of restoration flows from Lewiston Dam in the winter period to meet geomorphic, fish habitat, and temperature objectives. Expected to occur in Winter 2023.</p> <p>Corral Gulch Restoration (USFS Hayfork Ranger District): The Forest Service will work with the Watershed Center of Hayfork, CA to restore floodplain function, raise the groundwater table, increase streamflow, decrease water temperatures, and decrease erosion and sedimentation, ultimately improving wildlife habitat.</p>
Water Resources – Water Quality	<p>Increased water demands and a changing climate continue to compromise water quality across the planning area. Increases in water temperatures are expected as air temperatures increase. Increased sediment loading associated with wildfires is expected to contribute to degraded water quality across the planning area.</p> <p>In the Redding FO boundary, restoration and rehabilitation projects are taking place along the Mainstem Trinity River, Clear Creek, and side channels of the Sacramento River. Additionally, the North Coast and Central Valley Water Board Non-Point Source Pollution programs are revising and implementing their non-point source pollution waiver process to include federal lands. These programs including best management practices, correcting legacy issues, monitoring, and reporting.</p>
Water Resources – Groundwater	<p>Recent drought conditions have led to an increasing reliance on groundwater resources for agricultural and residential demands. These trends are expected to continue in light of increasing population pressures and a changing climate. Groundwater resources will experience increased demands as availability of summer surface water shrinks. Since many of these groundwater sources are linked to adjacent surface waters, reductions in surface water availability will likely translate to reductions in groundwater availability.</p>

Human and Natural Actions that Contribute to Cumulative Impacts

Vegetation

Climate change will likely be a strong vector of potentially dramatic effects on vegetation distribution, reproductive success, and plant-wildlife relationships in the planning area. Impacts to plant survival, reproduction, and gene flow may inhibit many plant communities' ability to adapt in ways that might keep pace with climatological changes. Expansion, contraction, or reorganization of some plant communities will likely occur. Refugia such as riparian areas, topographically diverse or higher-elevation areas, and areas within climatological influence of the coast may be able to accommodate cold-adapted plant communities that are unable to tolerate extended heat or drought. Conversely, warm-adapted plants may expand in areas previously occupied by cold-adapted plants.

Butz and Safford (2010, 2011) report the following projections applicable to the planning area:

- Evergreen conifer forests in inland northwest California show significant declines and subsequent replacement by Douglas-fir–tanoak forest and tanoak–madrone–oak forest under most future climate scenarios.
- Projected vegetation changes along the coast are much less dramatic, due to maritime buffering of changes in temperature and precipitation.
- For inland northern California, a large expansion of grassland was projected, due primarily to increased fire frequency in shrublands and forest; grasslands were not projected to increase notably in moister forest habitats closer to the coast.
- Increased frequency and/or intensity of fire in coniferous forest in California could alter forest species composition and reduce the size and extent of late-successional refugia. Thus, if fire becomes more active under future climates, there may be significant repercussions for old-growth forest and old-growth-dependent biota.

[Reading-Indian Creek Woodland Restoration](#) (BLM Redding FO): Forest health and woodland restoration treatment aimed at improving forest health, enhancing fire resilient characteristics of woodlands, restoring oak woodlands (via removal of encroaching conifer), reducing hazardous fuels around infrastructure and other improvements, and improving habitat of wildlife species.

Rancho Breisgau Oak Woodland Restoration (BLM Redding FO): Restore 300 acres of old walnut orchards to native oak and riparian woodlands.

[Lacks Creek Prairie Pollinator Habitat Enhancement Project](#) (BLM Arcata FO): This project aims to enhance pollinator plant populations within nine prairies located in the Lacks Creek Management Area. Target species will be strategically selected matching current and historic biodiversity of native annual and perennial forbs and shrubs found within the management area.

Beach Layia and Menzie's Wallflower Recovery Project (BLM Arcata FO): In 2003, the BLM began restoration effort aimed at recovering Federally listed (*Layia carnosa*) and Menzie's Wallflower (*Erysimum menziesii*) populations on BLM administered lands. Habitat restoration is accomplished through manual removal of non-native invasive european beachgrass (*Ammophila arenaria*) and iceplant (*Carpobrotus edulis*).

Human and Natural Actions that Contribute to Cumulative Impacts	
Vegetation – Fuels Treatments	<p>Vegetation treatments that include mechanical, biological, and chemical treatments and prescribed fire to reduce hazardous fuels and undesirable vegetation were used in the past on BLM-administered land, other federal lands, and private lands in the planning area. These treatments, and maintenance of these vegetation treatments, will likely continue on BLM-administered land, other federal lands, and private lands. There are currently 20 wildland fire management projects proposed within the Redding FO boundary, these include a range of vegetation and fuels treatments, including hazard tree and vegetation removal near critical infrastructure such as powerlines, fuels treatments to include vegetation reduction and prescribed fire, and wildland health treatments in WUIs and other areas where increased fuel loading increases risk of wildland fire, and the construction of fuel breaks. The goals of these projects are to reduce fuel loading, protect critical infrastructure, and create more resilient landscapes to reduce the potential for severe wildfires. Similar projects are occurring nearby on the Klamath National Forest.</p> <p>There are two wildland fire management projects proposed within the Arcata FO boundary. The goal of these projects is to reduce fuels, improve fire resiliency, and reduce the potential for severe wildfires. One project involves restoration of an area burned during a previous wildfire.</p> <p>Hazard Removal and Vegetation Management (BLM Redding FO): This Programmatic EA provides a comprehensive hazard removal and vegetation management treatment framework and analysis for the BLM California State Office. It provides broad, programmatic analysis for hazard tree or vegetation removal near critical infrastructure areas such as roads, powerlines, recreation areas, and water facilities.</p> <p>Statewide WUI Fuels Treatment Programmatic EA (BLM Redding FO): The goal of planned fuels treatments is to reduce intensity, severity, and spread of wildfire in and around communities that border BLM lands and reduce the likelihood of loss of life, property, and community infrastructure from catastrophic wildfire.</p> <p>Big Chico Creek Ecological Reserve & Phoenix Hill Vegetation Management Plan (BLM Redding FO): Proposed hazardous fuels reduction, prescribed burning, and wildland health treatments within the Big Chico Creek watershed and Phoenix Hill Vegetation Management Plan area of Butte County, California. The project would allow treatments that consist of mechanical and manual thinning of vegetation combined with prescribed burning. NEPA analysis is concluding.</p> <p>Weaverville Community Protection (BLM Redding FO): The project would remove dead and dying trees, understory shrubs, overstocked live fuels, and heavy accumulations of downed woody materials to reduce hazardous fuel loading in and around Weaverville, CA. The project would authorize the creation and maintenance of linear fuel breaks on up to 414 acres of BLM-administered public land alongside existing features such as roadways, property boundaries, or infrastructure. All treatments would be limited to 200 feet in width from critical infrastructure.</p> <p>Placer West Hazardous Community Protection (BLM Redding FO): The project would create and maintain linear fuel breaks on up to approximately 133 acres of BLM-administered public land in the west Redding area. Fuel breaks will be created alongside existing features such as roadways, property boundaries, or infrastructure by removing dead and dying trees, understory shrubs, overstocked live standing and dead downed fuels. Fuels breaks will be created and maintained to reduce overall fuel loadings and continuity from pre-treatment conditions. All treatments would be limited to 200 feet in width from identified features.</p> <p>Lewiston Community Protection Fuels Reduction (BLM Redding FO): The project includes the creation and maintenance of linear fuel breaks on up to 237 acres of BLM-administered public land alongside existing features such as roadways, property boundaries, or infrastructure. All treatments would be limited to 200 feet from critical infrastructure.</p>

Human and Natural Actions that Contribute to Cumulative Impacts	
Vegetation – Fuels Treatments (<i>cont.</i>)	<p>August Fire Restoration Project – Phase 2 (USFS Yolla Bolla Ranger District): Restoration activities on approximately 3,000 acres in order to treat the long-term impacts from the August Complex Fire. Activities may include fuels reduction, reforestation, road maintenance, and restoring priority watershed conditions.</p> <p>Trinity Priority Landscape (Forest Service): 900,000 acres of the Shasta-Trinity and Rivers National Forests are now designated as priority landscapes by the Forest Service will receive funding from the Bipartisan Infrastructure Law to complete wildfire risk reduction treatments around high-risk communities.</p> <p>Trinity Unit Campground Forest Health (USFS Weaverville Ranger District): Approximately 1,450 acres including 17 recreation sites within the Trinity Unit of the Whiskeytown-Shasta-Trinity National Recreation Area. Thinning w/in developed campgrounds. Fuels reduction without commercial removal of trees w/in dispersed camping areas or adjacent to developed campgrounds. Fuels reduction with commercial removal of trees between or adjacent to developed campgrounds.</p> <p>Butte Creek and Larabee Buttes Hazardous Fuels Reduction and Fire Resiliency (BLM Arcata FO): This project will remove dead and dying trees and decrease stand densities along the roads in the Butte Creek and Larabee Buttes parcels to achieve the goals of hazardous fuels reduction, improved fire resiliency for the area, and increased landscape resiliency to fire and pathogen spread. The project would accomplish this via a combination of cutting, removal, and slash treatment methods.</p> <p>Mad River August Complex Restoration Project (USFS Mad River Ranger District): The proposal would treat 10,781 acres targeting post-fire fuels management, safety, native plant, oak and wildlife habitat restoration, economic recovery of timber salvage and installing a new radio repeater on Grizzly Peak. Project area is near Three Forks, Berry Creek, Kettenpom and Hettenshaw Valleys, and populated areas near town of Ruth, Long Ridge, Haman Ridge, and Hoaglin Valley in California.</p>
Forestry	<p>Forest health is anticipated to decline across the planning area as a result of insects, disease, and changing climatic conditions. These changes could result in increased mortality for some tree species.</p> <p>Forestry treatments by the BLM and other agencies, particularly the US Forest Service, to address changes in forest health and increase ecosystem resiliency are anticipated to increase in the future with more acreage treated each year.</p> <p>Future forestry use of woody biomass for energy production could occur.</p> <p>The BLM is undertaking two forest health and habitat enhancement projects within the Redding FO boundary totaling approximately 300 acres:</p> <ul style="list-style-type: none"> • Oregon Mountain Forest Health Thinning and Fuels Reduction Project • Baker Cypress Restoration <p>There are two additional projects within the Arcata FO boundary totaling approximately 500 acres:</p> <ul style="list-style-type: none"> • Butte Creek and Larabee Buttes Hazardous Fuels Reduction and Fire Resiliency Project • Cahto Peak Oak Woodland Restoration

Human and Natural Actions that Contribute to Cumulative Impacts	
Lands and Realty – Linear Rights-of-Way	<p>The Redding FO processes about 30 applications for linear ROWs and other uses (for example, utility lines, access roads, waterlines) each year. Applications for linear ROWs and other uses within the Arcata FO boundary are less common. Combined, the BLM typically receives 30–40 new applications for linear ROWs each year within the planning area. Of this total, approximately 20 are applications for new access ROWs (roads) per year. It is likely that improvements to major transportation infrastructure will be ongoing. This may include bridge replacements and fixing roads and highways. The number of new developments related to residential use that would precipitate small access ROWs is expected to remain static.</p> <p>Digital 299 Broadband Project (Third party; BLM is a Cooperating Agency): A regional telecommunications network project that would support portions of Shasta, Trinity, and Humboldt counties between Cottonwood and Eureka, California, with improved broadband infrastructure. The proponent would build a broadband network following California State Route (SR) 299, with portions crossing jurisdictional lands or waters managed by the BLM, National Park Service, U.S. Forest Service, U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, California Public Utilities Commission, California Department of Transportation, California Department of Fish and Wildlife, State Lands Commission, State Water Resources Control Board, and Hoopa Reservation. The project would include the installation of 300 miles of underground fiber optic cable buried along existing roadways to connect nearby communities and include direct connections to existing utility poles, public buildings, and to customers.</p> <p>Klamath River Rural Broadband Initiative (Karuk Tribe): This project is a 104-mile middle-mile and last-mile broadband project in Humboldt County.</p> <p>Wildfire Risk Reduction, Reliability and Asset Protection Project (Trinity Public Utilities): The Trinity Public Utilities District and the Western Area Power Administration are proposing a proactive ROW expansion and vegetation management project to reduce fire risk to the surrounding communities and public lands as well as to increase electrical reliability to maintain critical services in the local communities.</p> <p>State of California Middle Mile Initiative (State of California): In July 2021, Governor Gavin Newsom signed into law Senate Bill 156 to create an open-access middle-mile network to bring equitable high-speed broadband service to all Californians. The bill provides \$3.25 billion to build the necessary infrastructure to bring internet connectivity to homes, businesses, and community institutions. CalTrans ROWs and easements will be used for the project.</p> <p>PG&E Master Operations and Maintenance and Consolidation Project: Consolidation and renewal of PG&E ROWs with development of a cohesive Operations and Maintenance Plan. Includes enhanced vegetation maintenance to address forest health and wildfire issues.</p> <p>PG&E Undergrounding Initiative. PG&E plans to underground 10,000 miles of powerline throughout the state in high-risk areas. Currently, the Redding FO has one ongoing undergrounding project of several miles.</p>
Recreation and Visitor Use	<p>Continued development of trail systems and the linking of trails to the City of Redding's recreation sites and trails will further increase use of BLM-administered lands within the urban interface. The BLM is also constructing 7 miles of new motorized trails within the Chappie-Shasta OHV area that will connect with and parallel existing heavy-use roads.</p> <p>Continued increases and decreases in recreational use resulting from motorized closures as well as past and present motorized trail/route loss.</p>

Human and Natural Actions that Contribute to Cumulative Impacts	
Recreation and Visitor Use (cont.)	Trinity River Recreation Improvements (BLM): This project would develop recreational infrastructure at three established recreation sites along the Trinity River. This includes developing approximately six existing campsites, creating approximately 16 new campsites for a total of 22 designated camping spots. Other amenity upgrades include installing an additional vault toilet and a septic system, developing an additional trash receptacle site, and a three-mile-long trail that connects recreation sites along Steiner Flat Road.
	Ewing Reservoir Trails (BLM): This project would build, in partnership with Friends Enjoying Ewing Trails and members of the Watershed Research and Training Center, approximately 10 miles of non-motorized trail on BLM-administered public lands (and approximately 1 mile on USFS land) surrounding Ewing Reservoir near Hayfork. The proposed trail system would connect with the existing trail system on Waterworks District land immediately surrounding the reservoir.
	Cascade and Sierra Foothills Trails (Paradise Recreation and Parks District): Funded and proposed multi-use natural surface 15-mile trail loop to connect the community to recreational resources. The project will provide an amenity that helps promotes healing through nature in a community traumatized by the Camp Fire. Trail system will pass through BLM, Town of Paradise, and USFS parcels. To be completed in 2024.
	Weaver Basin Trail Improvements (USFS – Weaverville Ranger District): Up to 50 miles of trails for hiking, running, biking and horseback riding, with multiple entry points around the town of Weaverville. Project is ongoing.
	Great Redwood Trail (Sonoma-Marín Area Rail Transit): The Great Redwood Trail is envisioned as a 316-mile, multi-use, rail-to-trail project connecting California's San Francisco and Humboldt Bays. Draft plan expected 2024.
Fish and Wildlife – Habitat Restoration	The Trinity River Restoration Program (TRRP) is a multi-agency program that implements the 2000 DOI ROD directing the agency to restore the fisheries of the Trinity River impacted by dam construction and related diversions of the Trinity River Division. Several projects are ongoing or proposed as part of this program, including those listed below.
	Trinity River Watershed Restoration Project (BLM and USFS): The Bureau of Reclamation's (Reclamation) TRPP, US Forest Service's Shasta-Trinity National Forest, and the BLM's Redding FO are preparing a Programmatic Environmental Assessment to evaluate aquatic habitat restoration activities in the Trinity River watershed in Trinity and Humboldt Counties. The analysis will focus on restoration activities that improve the quality and quantity of accessible cold-water aquatic habitat.
	Oregon Gulch Channel Rehabilitation (TRRP): This is an ongoing channel restoration project. The activities are in two phases: excavation/removal of mine tailings to Eagle Rock (on Highway 299, approximately 3 miles from Oregon Gulch) in the first phase (2021 up to 2025) and in-river channel/floodplain rehabilitation work in the second (between 2023 to 2026). Phase I has commenced.
	Initial excavation and hauling of up to 500,000 cubic yards of mine tailings will continue, as funding is available, for approximately 1.5 – 4 years prior to commencement of in-river restoration work planned in the second phase. The intensity of trucking materials to Eagle Rock would substantially decrease if the project duration is extended. When the bulk excavation and transport of mine tailing material is completed, work would shift to in-channel restoration work. In-river work would occur between July 15 and Oct. 15, and take an additional one to two seasons (summer and fall). The second phase of the project work could extend through 2026. Full revegetation efforts would not start until fall following in-river construction.

Human and Natural Actions that Contribute to Cumulative Impacts	
Fish and Wildlife – Habitat Restoration (<i>cont.</i>)	<p>Channel Rehabilitation and Sediment Management for Remaining Phase I Activities (TRPP): This project includes several in-channel activities at each of the Remaining Phase I sites, as well as at least one temporary river crossing at most of these sites. Excavation activities associated with the remaining Phase I sites are expected to yield more than 400,000 cubic yards of alluvial material. Collectively, the sites have the capacity to place (dispose of) nearly 500,000 cubic yards of excavated material. Riverine activities on both sides of the Trinity River would use adjacent upland and staging areas within the boundaries of the sites for disposing of and/or stockpiling excavated or processed materials. NEPA analysis in progress.</p> <p>Trinity River Restoration Program New Gravel Augmentation (TRRP): TRRP is proposing to permit four new high flow sites for sediment augmentation in the Trinity River upstream of the Indian Creek confluence. Augmentation at these sites could take place during the authorized in-channel work period (July 15 through October 15) or in synchronization with spring restoration releases, which generally begin on April 15. Activities would involve in-channel placement of sediment that is up to 5 inches in diameter during spring releases or summer low-flow. Sediment augmentation may also include larger sediment (cobbles and/or small boulders) to support long-term gravel bar and instream habitat development in the placement area.</p> <p>Six Rivers Aquatic Restoration Project (USFS): This project addresses recovery actions for listed salmonids and aquatic habitat restoration including riparian treatments, large woody debris recruitment and placement, off-channel winter rearing habitat, and invasive species management.</p>
Spread of Noxious/Invasive Weeds	Manual, biological, chemical, and mechanical treatments of noxious weeds and invasive plants on BLM-administered lands are likely to continue in the foreseeable future. The Redding FO is implementing an Integrated Vegetation Management program to control invasive weeds and other target species using chemical, mechanical, and manual means. Treatment is limited to 300 acres per year.
Drought	For much of the last decade, most of the western US has experienced drought. California regularly goes through periods of drought that may be statewide, region-wide, or within a more localized area. Agriculture, shifts in vegetation communities, drinking water supplies, and wildland fires are all impacted by drought.
Habitat loss	<p>Terrestrial wildlife habitat will follow the trends of the vegetative communities. Climate change is likely to result in a less productive landscape and associated habitats. In general, less productive habitats will be able to support less wildlife. Warmer and drier conditions due to climate change also influence wildlife habitat by increasing the frequency and severity of wildfires (CARB 2020). Wildlife habitat loss and alterations due to fire can be expected to continue into the future.</p> <p>There will continue to be a loss of aquatic habitat within the planning area, however, efforts by the BLM and other federal agencies to preserve and protect these areas are expected to increase.</p> <p>The BLM and other agencies will continue to emphasize preservation and protection of special status species and habitats through programs such as the Aquatic Conservation Strategy.</p> <p>Cannabis cultivation also has the potential for environmental damage to terrestrial and aquatic habitats. The increase of marijuana production in the planning area has polluted water with fertilizers, fuels, and pesticides, and triggered erosion that buries the habitats where the native fish spawn (Levy 2020). Garbage and trash, including hazardous substances, is an associated problem (Turner 2014).</p>

C.2 RESOURCE METHODOLOGY, INDICATORS, AND ASSUMPTIONS

For organizational purposes, **Chapter 3** is divided into sections by subject area (such as water resources, wildlife, and recreation) from the land use planning handbook, BLM Handbook H-1601-1. Though they are described and analyzed in discrete sections, these subjects are dynamic and interrelated. A change in one resource can have cascading or synergistic impacts on other resources. For example, erosion affects water quality, which in turn affects fish populations, which could have implications on other human outcomes, such as health and sociocultural systems. As a result, there is some overlap among the resource sections in **Chapter 3**, and the impacts described in one section may depend on the analysis from another section.

During the writing process, resource specialists shared data and discussed interrelated aspects of the analyses to better capture the interrelated nature of environmental resources. The indicators, analysis areas, and assumptions used for each resource analysis are detailed below. The impact analyses for direct, indirect, and cumulative impacts for all resources are found in **Chapter 3**.

C.2.1 Analytical Assumptions

The BLM made several assumptions to facilitate the analysis of potential effects. Below are general assumptions that apply to all resources. These assumptions set guidelines and provide reasonably foreseeable projected levels of development that would occur within the NCIP planning area during the planning period. These assumptions should not be interpreted as constraining or redefining the management objectives and actions proposed for each alternative in **Chapter 2**. Specific resource assumptions are found in the resource sections below:

- Acres are approximate projections for comparison and analytical purposes. Readers should not infer that they reflect exact calculations.
- Land allocations do not compel or authorize any ground-disturbing actions. Future actions and development proposals could be brought forward that will be subject to additional site-specific environmental study and permitting requirements.
- The discussion of effects is based on the best available data. Where data are limited, the BLM used knowledge of the planning area and professional judgment, based on observation and analysis of conditions and responses in similar areas.
- Surface-disturbing actions related to fluid mineral development will comply with Gold Book surface operating standards (and subsequent updates).
- Lands recommended for withdrawal would require a separate action of the Secretary of the Interior or the US Congress to withdraw lands from locatable mineral entry.

C.2.2 Air Quality and Climate

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
BLM management decisions involve the link in the permitting process to Best Management Practices/SOPs to meet National Ambient Air Quality Standards/California AAQS. BLM-permitted activities have the potential to impact air quality in Class I and Class II Sensitive areas, sensitive receptors, urban interface areas, National Landscape Conservation System units, and in or near areas that contains sensitive resources in the planning area; analysis and mitigation will be considered on a case-by-case basis.	Avoid or minimize impacts to various components of air quality. Greenhouse gas (GHG) impacts are covered under the Climate Change IAP Worksheet.	Qualitative assessment (map) of areas warranting site specific analysis coupled with an estimate of the number and nature of permitted activity over the life of the plan. Link of that activity with qualitative discussion to indicate projected emissions associated with activities based on known emission factors.
BLM management decisions related to mineral or renewable development, and travel management could result in increased potential for air pollution, including dust. Transportation right-of-ways near communities may require dust abatement or road hardening/stabilization.	Increase in particle emissions and fugitive dust.	Miles existing routes open/closed/limited to OHV. Past permit history and best estimate/forecast of the number and nature of activities estimated over the life of the RMP (including acres of surface disturbance and miles of new roads from RFD and Affected Environment/Reasonably Foreseeable Trends and Actions impacts scenario).
Wildland fire management.	Increase in particulate (smoke and dust from roadways) and combustion pollutants (including criteria, HAP, and GHG) from vehicles and equipment. Changes to smoke production based on fuel treatments.	Qualitative discussion of criteria pollutant emissions based on annual assumptions of prescribed burns and wildland fire.
Management decisions (e.g., Forest Management) that could result in changes in carbon sequestration.	Potential increase in GHGs. Changes in carbon sequestration from native grasses.	Acres identified for harvest by alternative and estimate of GHGs not sequestered based on timber type/amount. If acres by alternative are not available, better to look at goals for timber harvest and management.

Impact Analysis Area

- Direct/Indirect—For air quality and AQRVs: the planning area airshed (APCD/AQMD within planning area).
- Cumulative—For air quality and AQRVs: APCD/AQMD within the planning area. For GHGs: the analysis area is the planning area, the state of California, and the United States.

Analysis Assumptions

- Air quality is good throughout the planning area, although a small portion of the Southern Sacramento Valley Region (Butte County) of the planning area is out of attainment with some of the federal NAAQS criteria pollutants (8-Hour ozone and PM_{2.5}). Additionally, a portion of the Sacramento Valley, extending up to Shasta County, is out of attainment with the CARB standards for ozone. Generally, problems occur around cities and towns located in valleys from winter wood burning, particularly during temperature inversions. Motor vehicle use throughout the year, seasonal prescribed fire, and timber operations are some of the more notable pollution sources. Some pollutants in the planning area originate from the heavily populated Sacramento metropolitan area to the south, outside of the planning area, and are transported in the air northward. Exceptional events may occur throughout the planning area, most notably during summer wildfires.
- Activity and emission inventories may be based on standard formulations by area and populations. Specific activities and emissions may be too small or temporary to be accurately identified.
- Smoke from wildfires will be geographically episodic.
- Current emissions factors are available for burning of representative vegetation types and for use of representative vehicles.

C.2.3 Soil Resources**Impacts and Indicators**

Action Affecting Resource	Type of Impact	Impact Indicators
Restrictions and allowable disturbance related to the following resource or resource use management: <ul style="list-style-type: none"> • Leasable, locatable and salable decisions (open) • Open to Grazing • Permitted surface disturbing activities • Open and Limited OHV areas • Utility corridors • Fire and vegetation management or suppression using heavy equipment • Timber harvest, thinning, and site preparation for reforestation 	All of these management actions would surface disturbance to soils	<p>Acres open to surface disturbing activities, particularly in highly erosive soils.</p> <p>For mineral development with an RFD, actual estimated disturbance acreage would be calculated.</p> <p>Analysis would consider BMPs and restoration requirements under MCA and how that would minimize these disturbance impacts.</p>

Action Affecting Resource	Type of Impact	Impact Indicators
BLM would develop and implement a multi-tier sediment source assessment that would identify watersheds and evaluate and inventory sediment inputs. BLM would use this information to prioritize watersheds for treatment to address sediment sources and reduce sedimentation	Identification and management of sedimentation in priority watersheds	Estimated acreage of watershed that would be prioritized for treatment (if possible). If not possible, qualitative discussion of watershed impacts from this process.
Maintain and restore native grasslands	Grasslands sequester carbon.	Acres of existing native grasslands and grasslands projected for restoration, estimate of amount of carbon sequestration for those areas if data are available.
Prioritize research on rare biocrusts, serpentine soils, and coccidiomycosis (Valley Fever). Identify and implement strategies to restore biocrusts and serpentine soils and manage hazards associated with Valley Fever.	Increase protection and or restoration of rare biocrusts and serpentine soils. Mitigate dust emissions from soil surfaces and potential spread of Valley fever.	Acres of anticipated restoration of biocrusts and serpentine soils; if data are unavailable, estimate the acreage of damaged biocrusts and serpentine soils, assume these soils would eventually be restored during the life of the plan. Estimate acreage of potential Valley Fever hazard areas. and location parameters
Support effort to protect prime and unique farmlands under the federal Farmland Protection Policy Act.	Maintain or increase protection of farmlands with special designations.	Acres of prime and unique farmlands
Identify and establish working relationships with potential partners who can help provide information, inventory, monitoring, or restoration implementation support for soils resources.	Increase potential availability of informational, monitoring, and land management resources.	Number of potential partners. Qualitative description of resources that can be provided by partners that would support soil resources management.

Action Affecting Resource	Type of Impact	Impact Indicators
<p>Identify highly erodible or sensitive soils in the planning area that may need special protection or management intervention. Protection may include limitations on development in the following: NSO leasable, no surface disturbing activities, ROW avoidance or exclusion, no commercial timber harvest. Soils that require special consideration include:</p> <ul style="list-style-type: none"> • Steep and/or unstable terrain • Decomposed granite • Ultramafic/serpentine • Biocrusts/cryptobiotic • Anthropogenic • Bioturbation agents such as ground squirrel, wild pigs, weed infestation, etc. 	<p>Identification and management strategies for highly erodible and other sensitive soils. Any limitations on development would potentially decrease surface disturbance to these soils.</p>	<p>Acres of known occurrence of these soils (if available), and where management intervention or limitations may be needed. Qualitative description of how management actions would protect or impact that those acreages.</p>
<p>BLM will require general performance standards for all BLM-permitted surface-disturbing activities. Operator would be required to use equipment, devices, and practices (BMPs and mitigation measures) that would meet the performance standards of the surface management regulations. Any authorized activities (road building, mining, and OHV use) would be required to comply with site specific stipulations and mitigation measures set out by the BLM, including requirements for concurrent reclamation efforts.</p>	<p>Minimize soil degradation from surface disturbing activities.</p>	<p>Qualitative discussion of impacts from application of performance standards and mitigation activities, supported by a description of the permitting process.</p>
<p>BLM will require that operators meet specific performance standards for mining waste and demonstrate their reclamation efforts.</p>	<p>Minimize effects of surface disturbing activities.</p>	<p>Qualitative discussion of impacts supported by a description of the permitting process.</p>

Action Affecting Resource	Type of Impact	Impact Indicators
BLM will implement management of recreation, vegetation, forest, and post-fire treatment activities to maintain, enhance, and restore ecosystem function. Specifically, the BLM will manage authorized activities to make progress towards properly functioning soil conditions with soil properties appropriate to specific climate and landform.	Minimize soil degradation and increase soil function.	Qualitative discussion of impacts to soil resources, which would be supported by a discussion of management activities. Acres of proposed management and treatment activities (if data are available) for various soil types.
BLM will identify and implement strategies to monitor and mitigate impacts of climate change on soil resources.	Minimize soil degradation associated with climate change.	Qualitative discussion of management impacts to soil resources, which would be supported by a discussion of expected impacts from various types of management activities.
BLM will implement grazing management strategies that protect soil resources, supporting long-term ecological resilience.	Minimize soil degradation and improve condition of soil resources.	Qualitative discussion of management impacts to soil resources, which would be supported by a discussion of expected impacts from various types of management activities. Acres of proposed management and treatment activities (if data are available) for various soil types.

Impact Analysis Area

- Direct/Indirect—NCIP decision area
- Cumulative—NCIP decision area.

Impact Analysis Assumptions

- Soils occur on all land within the management area except those covered by a body of water or extensive bedrock outcropping.
- Information about the amount of surface-disturbing activities, specific types of soil resources, and management activities can be drawn or generalized from relevant reports and spatial data.
- Ground disturbing activities associated with management actions could result in wind and water erosion, soil compaction, soil nutrient losses, and degradation leading to a decrease in soil function and productivity.
- Sediment loading to surface waterbodies varies based on: topography, soil texture, hydrological intensity of precipitation events (including duration and runoff), vegetation structure and condition, and distance to waterbody.
- Disturbance on steeper slopes would cause greater erosion potential than equal disturbances on flat or moderate slopes.
- The removal of soil cover (e.g., loss of vegetation, biocrusts, or natural mulch) increases susceptibility of soils to wind and water erosion.

C.2.4 Water Resources

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
BLM would develop and implement a multi-tier sediment source assessment that would identify watersheds and evaluate and inventory sediment inputs based on watershed condition, road density, past management and acres of BLM managed land within the watershed. BLM would use this information to prioritize watersheds for treatment to address sediment sources and reduce sedimentation	Identification and management of sedimentation in priority watersheds	<p>Estimated acreage of watershed that would its reasonably foreseeable would be prioritized for treatment (if possible). If not possible, qualitative discussion of watershed impacts from this process.</p> <p>Road density inventory map would provide information on ways to reduce sediment delivery into streams.</p> <p>Proportion of watersheds managed by BLM</p> <p>Documentation of fine sediment in select waterways (if data available)</p> <p>Note if watershed 303d listed (TMDL) for sediment.</p>
Water resources MCA/BMPs to reduce the impacts surface disturbing activities on water quality/quantity.	Water could be adversely impacted from a variety of potential developments on BLM, including roads, mining, logging, collection of natural resources, erosion, and various types of discharges.	Qualitative description of how BMPs will reduce water resource impacts throughout the planning area.
Dredging not allowed in certain special designations or certain resource areas	Impacts or reduction in disturbance from dredging or not dredging	<p>Miles of stream where dredging would and would not be allowed and qualitative description of impacts of dredging.</p> <p>Guidelines on accepted dredging techniques</p> <p>Dredging permit required; however, dredging is not conducted at the moment, but need to consider among actions</p>
Land tenure adjustment along key riparian corridors to improve riparian connectivity and maintain riparian habitat integrity.	Improving riparian connectivity and intact riparian systems	Estimated acres of lands that would be acquired in riparian corridors (if acquisition parcels or areas are identified).
Disposal of lands	Potential loss of riparian habitat and riparian connectivity	Qualitative acreage assessment. Estimated acres of lands in riparian corridors that would be disposed of (if disposal parcels or areas are identified)

Action Affecting Resource	Type of Impact	Impact Indicators
Leasable, locatable and salable decisions (open)	These activities would cause surface disturbance with attendant risk of sedimentation impacts on water quality. Runoff in post-burn areas could affect water resources through poor water quality and have direct impacts on aquatic biota with increased sedimentation and ash input into waterways.	Acres open to surface-disturbing activities in watersheds supporting perennial water bodies.
Grazing		Leasable, locatable, and salable mineral overlay with highly erodible soils layer; however, it is unclear if this highly erodible soils layer is available.
Permitted surface disturbing activities		It could also be done for OHV open areas assuming a certain level of vegetation loss and for prescribed fire and wildland fire use if there is an estimate of how much of that would occur annually over the life of the plan.
Open OHV areas		
Utility corridors		Fire frequency data exists for plan area as well as fire history.
Fire and vegetation management or suppression using heavy equipment		Water quality exceedances
Post-burn management and how effects water quality		
Timber harvest, thinning activities, and site preparation for reforestation	Prevention of surface disturbance to soils in watersheds supporting perennial waterbodies	Acres closed to surface-disturbing activities in watersheds supporting perennial water bodies.
Areas closed to above surface disturbing activities because of resource management allocations (i.e., ACECs, Wilderness, LWC as a priority)		
Water Rights: BLM would pursue water rights for rivers in the planning area and may prioritize doing this for certain waterbodies		The number and location of these waterbodies that may have increased water for this management.
Restrictions on water ROW permits across BLM lands that access seeps and springs	Vegetation management has implications for risk of surface disturbance affecting sedimentation, as well as amount and type of vegetation, which affects sedimentation and runoff volume	The number and location of other water rights in the basins and analyses of possible impacts to those reservations (may not be possible). There are existing water rights.
Forestry and vegetation management (riparian management areas, Oak Woodlands, LSRs, non-LSR forested areas, other vegetation cover types)		Acres of vegetation managed a certain way in watersheds supporting perennial waterbodies with a qualitative discussion of impacts of this management on water resources. Analysis of riparian management area widths for alternatives.
Restrictions on water rights-of-ways (in land uses section)		Acres/miles of streams potentially protected.

Impact Analysis Area

- Direct/Indirect—NCIP decision area
- Cumulative—NCIP planning area

Analysis Assumptions

- An estimate can be made of reasonably foreseeable annual prescribed fire, and wildland fire treatments and wildfire acreages.
- An estimate can be made of reasonably foreseeable annual prescribed fire, and wildland fire treatments and wildfire acreages.
- Ground disturbing activities associated with management actions could result in wind and water erosion, resulting in sedimentation and increased impairment to waterbodies.
- Sediment loading to surface waterbodies varies based on topography, soil texture, hydrological intensity of precipitation events (including duration and runoff), vegetation structure and condition, and distance of ground disturbance to waterbody.
- Disturbance on steeper slopes would cause greater erosion potential than equal disturbances on flat or moderate slopes.
- The removal of vegetation increases susceptibility of soil surface to wind and water erosion resulting in increased sedimentation and impacts to waterbodies.
- Water resource impacts are generally greater with increasing area and magnitude of surface disturbance. Acreage of potential surface disturbance can serve as a comparative tool for evaluating potential water resource impacts between various management strategies and alternatives.
- The following areas are deemed to have lower impact to water resources based on acreage serving as a proxy for potential magnitude of water quality impacts:
 - Areas closed to surface disturbing activities, or where certain management activities minimize surface disturbance such as grazing, fire and vegetation suppression using heavy equipment, and utility corridors (note grazing and utility use will vary depending on the nature of the activity, topography, and vegetation).
 - Lands protected through purchase and set aside versus losses of protected lands disposed through sales.
 - Lands where dredging and other maintenance would or would not be allowed.
 - Areas where streamside and floodplain road density and associated culvert repair or removal have been reduced.
- Water quality in the planning area is higher quality in upstream catchment areas and it has the potential to degrade downstream as withdrawals of supply and inputs of pollutants increase. As water flows downstream, biological, physical, and chemical parameters deteriorate water quality. Water quality is generally better in areas where riparian vegetation is native and in good condition. One main exception being the Klamath River where cold water inputs below the dams are generally thought to improve flows and water temperatures as accretions occur.

C.2.5 Vegetation

Impacts and Indicators – Vegetation Cover Types

Action Affecting Resource	Type of Impact	Impact Indicators
Activities in vegetation cover types based on Forestry decisions related to riparian management areas, Oak Woodlands, LSR, and non-LSR forested areas.	Restrictions and allowable activities would either disturb or retain/enhance vegetation cover types in these forestry categories.	Acres of vegetation cover type within these categories
Vegetation, Forestry, and Wildland Fire management decisions: <ul style="list-style-type: none"> Fire and vegetation management or suppression using heavy equipment Timber harvest, thinning activities, site preparation for reforestation, and young stand improvement activities 	Restrictions and allowable activities for vegetation, forestry, and fuels would either disturb or retain/enhance vegetation cover types	Acres of vegetation cover type within these categories
Special designation management: <ul style="list-style-type: none"> National Scenic and Historic Trails Wild and Scenic Rivers Wilderness, Wilderness Study Areas Lands with Wilderness Characteristics Areas of Critical Environmental Concern Others 	This would conserve/maintain vegetation. Some short-term disturbing management to enhance long-term conservation (e.g., prescribed fire, other vegetation treatments)	Acres of vegetation cover types managed in special designation areas
Fish and wildlife species management	This would conserve/maintain vegetation that is habitat for fish and wildlife species.	Acres of vegetation cover types in wildlife range (critical deer winter range, others) Acres of vegetation cover types in riparian management areas
Restrictions on activities in sensitive soils or areas such as serpentine soils.	This would prevent damage to vegetation associated with those sensitive areas	Acres of vegetation protected by limiting disturbance in sensitive soils (for example, implementing BMPs for surface disturbing activities; this would likely be accounted for above in decisions to have areas open or closed to activities that remove vegetation.)
Livestock Grazing	Areas open to livestock grazing would experience low-intensity, widespread effects that could alter the vegetation cover structure or function Livestock grazing range improvements would cause localized removal or disturbance of vegetation	Acres open and unavailable to livestock grazing

Action Affecting Resource	Type of Impact	Impact Indicators
Leasable, locatable, and mineral materials decisions	Mineral allocations and allowable mineral activities would disturb vegetation cover types	<p>Acres of vegetation cover types converted or lost due to surface-disturbing activities associated with minerals decisions.</p> <p>If an RFD for mineral development is available, estimates of direct disturbance to vegetation types could be inferred.</p>
Recreation management	Management decisions in ERMA and SRMA would affect vegetation cover. Typically, management would result in disturbance/removal, impact intensity would vary depending on specific direction in the RMA.	Acres of SRMA and ERMA
Travel and transportation management decisions	<p>Limiting or prohibiting OHV use would protect special status species from disturbance or habitat degradation.</p> <p>Limitations within Travel Management Areas would protect any special status species within those areas.</p>	<p>Miles of trails or acres designated as open, limited or closed to motorized use within vegetation cover types.</p> <p>Acres of vegetation cover types within Travel Management Areas.</p>
VRM classifications	Managing for visual resources can impact/limit how vegetation management is conducted.	Acres of vegetation cover types managed as VRM I and II and how it would impact the vegetation and forestry management, and subsequently, the vegetation. This would likely overlap with areas designated for no surface occupancy for other development.
Lands and realty decisions (Land tenure adjustment, land use authorizations)	<p>Retaining, acquiring, or disposing of land would impact vegetation cover types by removing it from public lands management.</p> <p>Acres of vegetation cover types converted or lost due to surface-disturbing activities associated with land use authorizations (ROWs, communication towers)</p> <p>Rare plant populations and habitat and vulnerable vegetation communities would be maintained in areas where native pollinator populations are maintained. Prohibiting apiaries in areas near rare plants and vulnerable communities would facilitate this.</p>	<p>Acres of vegetation cover types retained/acquired or disposed of and qualitative discussion of impacts of changed land use on that habitat</p> <p>Acres of vegetation cover types potentially disturbed by land use authorizations</p>

Action Affecting Resource	Type of Impact	Impact Indicators
Renewable energy	Renewable energy developments (wind, solar, geothermal, biomass) and ROWs could disturb vegetation cover types No designated leasing or variance areas – case-by-case decisions only	Acres of vegetation cover types converted or lost due to surface-disturbing activities associated with renewable energy development /ROWs
Reseeding requirements and vegetation salvage requirements	Use of native seed and propagules and requirements for salvage of topsoil and vegetative mat, would allow for effective revegetation efforts and prevent introduction of nonnative invasive species.	Qualitative discussion on impacts of this BMP. If there is an a reasonably foreseeable disturbance scenario where this would be applied, this can be related to actual acreage of impact where this would be applied.
AIM monitoring and use of state and transition models to adjust vegetation management	This would provide for flexible management to adapt to changing vegetation conditions and manage for fire, fuel loading and vegetation condition in response to climatic changes	Qualitative discussion on impacts of this management

Impacts and Indicators – Special Status Species

Action Affecting Resource	Type of Impact	Impact Indicators
Incorporate protection measures for rare habitats into fire response agreements	These would provide additional protection for sensitive vegetation species during fire suppression and/or treatment activities.	Acres of habitat for special status species flora or unique ecosystems that could be protected by this, as appropriate. Qualitative discussion of these impacts.
Restrictions on activities in vegetation cover types based on Forestry decisions related to riparian management areas, Oak Woodlands, LSR, and non-LSR forested areas.	Restrictions and allowable activities would either disturb or retain/enhance special status plant habitat in these forestry categories.	Acres of special status species habitat within these categories
Same resource and resource use management decisions discussed for vegetation, above.	Decisions that would result in vegetation disturbance would also potentially remove special status plant populations, seedbanks, and suitable habitat, while protective decisions would conserve or enhance special status plants.	Acres or numbers of special status plant populations (for example, number of element occurrences potentially affected) Acres of special status plant habitat.

Impacts and Indicators – Invasive, Non-native Plants

Action Affecting Resource	Type of Impact	Impact Indicators
All actions implemented or authorized by the BLM would include measures to prevent the introduction and spread of invasive plants.	Invasive plants may out-compete native species for resources, change predator-prey relationships, alter the availability of forage for wildlife, and generally alter ecosystem structure and function.	Quantitative discussion of impacts in terms of potential for containment or expansion of invasive or non-native species.

Action Affecting Resource	Type of Impact	Impact Indicators
Herbicide use will be consistent with procedures and limitations outlined in the Vegetation Treatments on Bureau of Land Management Lands in 17 Western States ROD (2007a, as amended), and Vegetation Treatments Using Aminopyralid Fluroxypyr and Rimsulfuron on BLM Lands in 17 Western States ROD (2016).	This will allow for herbicide to control invasives and non-natives as appropriate.	Qualitative discussion of impacts with tiering to programmatic EIS analysis as appropriate.
Same resource and resource use management decisions discussed for vegetation, above.	Decisions that would result in vegetation disturbance would also increase the potential for nonnative, invasive plant establishment and spread, while protective decisions would minimize this potential. More protective decisions may limit the types of treatments available to control nonnative, invasive species (e.g., herbicide use).	Acres of resource and resource use management decisions (e.g., allocations of special designations areas and areas open and closed to various resource uses) Acres of known noxious weed infestations in the decision area.
When conducting restoration or reclamation, permittees must use native seed and propagules applicable for existing climatic conditions and desired ecosystem function as demonstrated by benchmark areas and/or applicable vegetation outplanting trials (planting of raised nursery plants or seeds into the natural environment). Coordination with the BLM Botany Program Lead must begin during the permitting process and final seed/propagule mixes must receive prior approval by the BLM before restoration or reclamation efforts can begin. Seeds for Success collection guidelines and stands operating procedures (SOPs) must be adhered to during any collection on native plant material that would occur on BLM managed lands.	Use of native seed and propagules, or certified and approved alternatives, would allow for effective revegetation efforts and prevent introduction of invasive plants.	Qualitative discussion of the impacts of this BMP on the potential for nonnative, invasive plant establishment and spread.

Action Affecting Resource	Type of Impact	Impact Indicators
Where practicable, the BLM would require BLM-permitted operators to salvage and store the vegetative mat and topsoils for restoration/reclamation. These would include small scale projects where the vegetation mat can be kept alive and restored in a timely fashion (before the vegetation mat dies). If the BLM decides that vegetative mat and topsoil cannot be salvaged, other measures to protect vegetation and soils would be considered, including (but not limited to) emergency stabilization or importation of native weed-free topsoil and vegetative mat or material from an exterior source.	Salvage and use of vegetative mats where practicable would facilitate effective restoration/reclamation efforts while minimizing risk of spreading weeds and prevent introduction of invasive plants.	Qualitative discussion of the impacts of this BMP on the potential for nonnative, invasive plant establishment and spread.

Impact Analysis Area

Vegetation Cover Types, Special Status Species, and Invasive Non-native Plants

- Direct/Indirect—BLM-administered lands in the planning area
- Cumulative—HUC-8 watersheds in which BLM-administered lands are located

Analysis Assumptions

Vegetation Cover Types

- Adaptive management tools would be implemented to test, evaluate and adjust the assumptions, objectives, actions, and subsequent on-the-ground results from the implementation of RMP decisions. This strategy would provide resource managers with the flexibility to respond quickly and effectively to changing resource and user conditions.
- Desired future condition for vegetation cover types would include sustainable ecosystems comprised of natural landscapes that provide connectivity, ecological function, and resilience to disturbance; supporting plant community health, pollination, reproduction, gene flow, adaptation to changes in temperature and/or precipitation trends, and healthy native and special status plant population distributions and sizes.
- Planned vegetation treatment results and success can be estimated from past experience combined with existing data and studies.
- The planning area has low minerals and renewable energy development potential. Reference the RFD if available and incorporate into analysis.
- Desired future conditions for vegetation cover types would be native plant communities that are comprised of predominantly native species with all historic, comparable, or healthy vegetation communities represented and proportional to pre-contact conditions.

- GIS data does not exist for the knobcone and rare cypress vegetation cover types. Qualitative analysis is used for these vegetation cover types.

Special Status Species

- Implementation of all of the alternatives would be in accordance with existing laws, regulations, and standard management guidelines.
- Impacts to special status wildlife species are based primarily on potential impacts to habitats managed by the BLM.
- Precise quantitative estimates of impacts generally are not possible because the exact locations of future actions are unknown, population data for species status species are often lacking, or habitat types impacted by surface-disturbing activities cannot be predicted.
- Actions impacting one species have similar impacts on other species using the same habitats or areas. Measures to protect one species generally will result in long-term benefits to other species occurring within that habitat. Where resources overlap, management actions associated with protecting habitats and cultural resources directly benefit special status plant species.
- The more acreage of habitat protected, the greater the benefit to the targeted species.
- Natural fire and prescribed fire are used to manage vegetative communities and can result in short-term adverse impacts with long-term beneficial impacts to wildlife and wildlife habitats.

Invasive, Non-native Plants

- Standard measures to minimize invasive, non-native plant introductions or spread would be in effect for all applicable projects authorized by the BLM.
- Future human development proposals would be evenly distributed in different habitat types that may be susceptible to invasive plants in proportion to the abundance of those habitat types under the baseline conditions.
- The number and type of invasive plants may increase during the life of the plan, however, would be concentrated and/or facilitated by surface disturbance.
- Increases in introduction and spread of invasive plants could be accelerated by longer growing seasons (climate change).
- Adaptive management tools would be implemented to test, evaluate and adjust the assumptions, objectives, actions, and subsequent on-the-ground results from the implementation of RMP decisions. This strategy would provide resource managers with the flexibility to respond quickly and effectively to changing resource and user conditions.

C.2.6 Wildlife

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
Permitted surface disturbing activities, such as: <ul style="list-style-type: none"> • Leasable, locatable and salable decisions (open) • Grazing • Open and Limited OHV areas • Utility corridors/communication tower sites • Fire and vegetation management or suppression using heavy equipment • Timber harvest 	All of these activities would cause removal of vegetation/habitat and disturbance (noise, injury, mortality) which would affect wildlife and their habitat.	<p>Change in the quantity and quality of wildlife habitat:</p> <ul style="list-style-type: none"> • Acres of wildlife habitat open or closed to surface-disturbing activities (where available) • Qualitative discussion on impacts of types of activities on wildlife habitat. • If an RFD for mineral development, projected timber harvest, and projected fire management is available, estimates of direct disturbance to wildlife habitat could be produced. <p>Potential for disturbance (noise, injury, mortality) leading to reduced species survivorship:</p> <ul style="list-style-type: none"> • Acres of wildlife habitat at risk to disturbance based on acres open or closed to the surface-disturbing activities (where available) • Qualitative discussion of the potential for disturbance of different activity types. • Qualitative discussion of potential increase in edge habitat due to activities (e.g., wildlife species would be at risk for increased predation by perching raptors on utility lines/communication towers or at risk of bird strike mortalities.
Wildlife management, including BMPs/stipulations to protect wildlife habitat (seasonal restrictions, etc.)	Management to enhance and protect habitat or to avoid or mitigate impacts to wildlife from BLM activities and externally-permitted projects	<p>Change in the quantity and quality of wildlife habitat:</p> <ul style="list-style-type: none"> • Acres of habitat and/or species protected through BMPs (where available) with qualitative discussion of impacts and effectiveness of BMPs. • Qualitative discussion of BMPs ability to maintain or improve wildlife habitat. <p>Potential for disturbance (noise, injury, mortality, disease transmission [bats]):</p> <ul style="list-style-type: none"> • Qualitative discussion of BMPs effectiveness in reducing disturbances.

Action Affecting Resource	Type of Impact	Impact Indicators
Vegetation/Forestry management (riparian management areas, LSRs, non-LSR Forested, other vegetation cover types)	<p>Vegetation/Forestry management will impact wildlife habitat through changes in species assemblages or seral stage; it would also cause short-term disturbance and habitat alterations.</p> <p>Vegetation/understory removal for fuels reduction reduces nesting habitat</p>	<p>Change in the quantity and quality of wildlife habitat:</p> <ul style="list-style-type: none"> Qualitative discussion of impacts on representative wildlife species; alternatives do not call out total acres treated, so this will be a qualitative discussion; project-specific BMPs may include nesting bird surveys, temporal restrictions; project pace and funding are increasing; focus will be on planning level - alternatives may emphasize areas for treatments (WUI), types of treatments, and areas to avoid (wilderness/special designations) <p>Potential for disturbance (noise, injury, mortality) leading to reduced species survivorship:</p> <ul style="list-style-type: none"> Qualitative discussion of the potential for disturbance due to treatments, equipment, etc.(short-term) vs. long-term benefit from improved conditions, decreased fire, invasives
Management of SRMAs and ERMAs	<p>Management for high density recreation would create potential conflict between wildlife and recreationists and would potentially decrease wildlife habitat suitability and increase disturbance for some species</p>	<p>Change in the quantity and quality of wildlife habitat:</p> <ul style="list-style-type: none"> Acres of wildlife habitat managed for recreation Qualitative discussion of how the different recreationists would affect representative wildlife species and habitat. <p>Potential for disturbance (noise, injury, mortality, disease transmission [bats]):</p> <ul style="list-style-type: none"> Qualitative discussion of the potential for disturbance due to noise, human presence, etc.

Action Affecting Resource	Type of Impact	Impact Indicators
Fire management, including restrictions on fire management and suppression	Fire management causes short-term loss or shifts in wildlife habitat and often long-term improvement; it would also cause short-term disturbance	<p>Change in the quantity and quality of wildlife habitat:</p> <ul style="list-style-type: none"> • Acres of wildlife habitat projected to receive fire management and where restricted (where available) • Qualitative analysis of impacts from management and restrictions on wildlife habitat in short- and long-term <p>Potential for disturbance (noise, injury, mortality):</p> <ul style="list-style-type: none"> • Qualitative discussion of the potential for disturbance due to management activities
VRM Class I and II designation	Areas designated as VRM Class I or II would include limitations on vegetation manipulation that may benefit wildlife species using that habitat.	<p>Change in the quantity and quality of wildlife habitat:</p> <ul style="list-style-type: none"> • Acres of wildlife habitat impacted VRM Class I and II within the planning area (where available) • Qualitative analysis of impacts on wildlife habitat due to restrictions on surface disturbing activities.
Management of land for wilderness characteristics	Management of land for wilderness characteristics would benefit wildlife because it would include measures protective of wildlife habitat. Conversely, lack of vegetation/fire treatments would make habitats less resilient to disturbances (fire, insects, invasives)	<p>Change in the quantity and quality of wildlife habitat:</p> <ul style="list-style-type: none"> • Acres of wildlife habitat impacted by management of lands managed for wilderness characteristics. • Qualitative analysis of impacts on wildlife habitat due to restrictions on surface disturbing activities.
ACEC designation and management	Designation of areas as ACECs would impact wildlife because it often would include measures protective of wildlife habitat.	<p>Change in the quantity and quality of wildlife habitat:</p> <ul style="list-style-type: none"> • Acres of wildlife habitat impacted by ACEC management. • Qualitative analysis of impacts on wildlife habitat due to restrictions on surface disturbing activities.
Decisions regarding Wild and Scenic River designations	Measures to protect WSR corridors would generally be protective of wildlife habitat.	<p>Change in the quantity and quality of wildlife habitat:</p> <ul style="list-style-type: none"> • Acres of wildlife habitat impacted by WSR management. • Qualitative analysis of impacts on wildlife habitat due to restrictions on surface disturbing activities.

Methodology

The environmental consequences to wildlife from implementing each of the alternatives are described in Chapter 3. For NCIP, management direction that may alleviate or exacerbate threats to ecological conditions is evaluated at a programmatic level. The RMP does not authorize site-specific projects or activities, and, therefore, it does not analyze site-specific impacts. Direct and indirect site-specific effects

will be analyzed when future projects are proposed. Although potential short-term consequences from implementing the programmatic approach may be described in the environmental consequences sections below, where appropriate, this analysis focuses on longer-term indirect and cumulative effects that may occur over the 20-year life of the plan.

The BLM identified potential effects of decisions and management actions on species, populations, and habitats by reviewing the best available science and using qualitative and quantitative data related to impact indicators. To best reflect the scale and magnitude of these effects, the BLM used GIS data and overlays of resources and resource uses to quantify areas where impacts from management decisions could potentially occur. Because the exact locations of future actions are unknown, precise quantitative estimates of impacts generally are not possible. The analysis also relies on a qualitative analysis of potential effects from different types of land uses.

Impact Analysis Area

- Direct/Indirect—NCIP decision area
- Cumulative—NCIP planning area

Analysis Assumptions

- The BLM is responsible for managing habitats, whereas state and federal wildlife management agencies (e.g., USFWS, California Department of Fish and Wildlife) oversee management of wildlife species. Therefore, this analysis primarily relies on changes to vegetation types to estimate impacts to wildlife habitats.
- Disturbance impacts to wildlife are evaluated by comparison to current management practices in the planning area; increased protection in time or space is beneficial, whereas reduced protection results in adverse impacts.
- Natural and prescribed fire are tools used to manage vegetative communities and can result in short-term adverse impacts with long-term beneficial impacts to wildlife and wildlife habitats.
- Management actions aimed at benefiting specific wildlife species can have adverse or beneficial impacts on other wildlife species.
- The BLM will use the best available information, management and conservation plans, and other research and related directives, as appropriate; to guide wildlife habitat management on BLM-administered lands.
- Design features, such as seasonal and spatial restrictions, would limit direct impacts on some species. The more acreage of habitat protected, the greater the benefit to the targeted species.
- Implementation of the alternatives would be in accordance with existing laws, regulations, and standard management guidelines.
- Precise quantitative estimates of impacts generally are not possible because the exact locations of future actions are unknown, population data for special status wildlife species are often lacking, or habitat types impacted by surface-disturbing activities cannot be predicted.

C.2.7 Fish and Aquatic Species

Impacts and Indicators – Fish and Aquatic Habitat

Action Affecting Resource	Type of Impact	Impact Indicators
Managing for Aquatic Conservation Strategy requirements, including allowing or not allowing surface disturbing activities, including grazing, within riparian/watersheds supporting fisheries	Surface disturbing activities within watershed can alter stream processes and degrade fish habitat.	Acres of watershed subject to mining, development, and timber harvest in close proximity to waterbodies. Linear miles of sensitive stream habitat and/or anadromous fish habitat available and closed to grazing
Actions that allow for or prohibit mineral development	Mining if withdrawals lifted or no mining if withdrawn.	Miles of stream open or closed to mineral development. Anadromous stream miles open or closed to mining.
Impacts of managing for riparian management areas	Management would affect how projects impact fish habitat, including direct disturbance impacts and indirect impacts from sedimentation.	Acres of watershed and miles of stream subject to specific types of management and qualitative discussion of the impacts of that management
Watersheds and riparian areas open to timber and forest products harvest and the BMPs required for that harvest.	Forest products and timber harvest can alter sediment transport across the landscape potentially increasing sediment loading in streams and can degrade fish habitat.	Acres of watershed and miles of stream where harvest would be allowed and qualitative discussion of impacts of that harvest.
Special recreation permits (SRPs) in RCAs require the containment and removal of human wastes.	Concentrated recreational use can increase nutrient inputs to streams and can alter aquatic productivity either beneficially or adversely; stream habitats can be degraded	Number of SRPs in proposed RCAs. Linear miles of stream habitat subject to potential concentrated recreation Linear miles of sensitive stream habitat subject to potential concentrated recreation (e.g., spawning habitat)
Travel and transportation decisions (Open, closed, or limited to OHVs)	Summer stream crossings with OHVs can create localized degradation of fish habitat and affect fish passage. Winter stream crossings with OHVs can affect sensitive fish overwintering habitat (including eggs of summer/fall spawning species)	Linear miles of stream habitat subject to OHV crossings during summer/winter. Linear miles of sensitive stream habitat subject to OHV crossings during summer/winter. (e.g., spawning/overwintering habitat) Miles of road within watersheds supporting anadromous fish streams that are OHV open and OHV limited to existing routes

Action Affecting Resource	Type of Impact	Impact Indicators
Prioritize/Pursue instream water rights for rivers/streams supporting fisheries; limitations of Water ROWs	Water withdrawal for industrial/domestic purposes can reduce water quantity and water quality thereby potentially degrading fish habitat and/or inhibiting fish passage.	<p>Number of streams where water rights may be pursued.</p> <p>Linear miles of stream potentially susceptible to water withdrawals that would be beneficially impacted by pursuing water rights or by limitations on water ROWs.</p> <p>Acres of pond/lake habitat potentially susceptible to water withdrawals that would be beneficially impacted by pursuing water rights or by limitations on water ROWs.</p>
Prioritizing acquisition of lands to provide for riparian/stream connectivity	Land acquisition would allow consistent federal land management of fisheries habitat	If possible, estimate the number of stream miles where land acquisition would provide for increased connectivity.
Prioritizing management actions that would improve or restore ecological function	Short term construction effects (localized sedimentation), long term beneficial habitat improvement and/or connectivity	<p>Linear miles of stream habitat impacted or reconnected.</p> <p>Acres of tidelands or waterbodies affected.</p>

Impacts and Indicators – Special Status Species

Action Affecting Resource	Type of Impact	Impact Indicators
For any BLM-authorized surface disturbing activity in known habitat for special status species (SSS) fish or unique ecosystems (as determined by the BLM), applicants would be required to conduct a survey using BLM-approved protocol. The map of known habitat would be revised when new information becomes available.	Without pre-disturbance surveys, any adverse impacts to SSS fish species from surface-disturbing activities would be unknown.	Acres of known habitat for special status species or unique ecosystems.
Soil and water protection BMPS.	Measures that are protective of soil and water quality would benefit special status species by preserving habitat.	Acres of land protected by required BMPs.
Vegetation and Fire Management decisions.	Measures that are protective of vegetation may benefit special status species.	Acres of land protected by regulations.
Restrictions on casual use timber sale operations regarding timing to avoid long-term disturbance to underlying soils and prohibiting operations within the flood-prone width of perennial rivers and streams, and riparian zone of perennial streams for house log harvesting.	Special status species that use the flood-prone width and riparian zone of perennial rivers and streams would benefit from that habitat being protected from timber harvest.	<p>Acres of habitat with the flood-prone width of perennial streams.</p> <p>Acres of riparian zone of perennial streams.</p>

Action Affecting Resource	Type of Impact	Impact Indicators
Travel management decisions.	Limiting or prohibiting OHV use would protect special status species from disturbance or habitat degradation. Limitations within Travel Management Areas would protect any special status species within those areas.	Miles of trails or acres designated as open, limited or closed to motorized use (include a subset of acres of riparian management areas that would be closed/open to OHV use). Acres within Travel Management Areas.
VRM Class I and II designation.	Areas designated as VRM Class I or II would include limitations on vegetation manipulation that may benefit special status species using that habitat.	Acres of VRM Class I and II within the planning area.
Management of land for wilderness characteristics.	Management of land for wilderness characteristics may benefit special status species because it would include measures protective of potential habitat.	Acres of lands managed for wilderness characteristics.
ACEC designation and management.	Designation of areas as ACECs may benefit special status species because it would include measures protective of potential habitat.	Acres of lands designated as ACECs.
Decisions regarding Wild and Scenic River designations.	Measures to protect WSR corridors would generally be protective of potential special status species habitat.	Acres of land within WSR corridors.

Impacts and Indicators – Aquatic Invasive Species

Action Affecting Resource	Type of Impact	Impact Indicators
All actions implemented or authorized by the BLM would include measures to prevent the introduction and spread of aquatic invasive species.	Aquatic invasive species may out-compete native species for resources, change predator-prey relationships, alter the availability of forage for wildlife, and generally alter ecosystem structure and function.	Estimated acreage at risk for invasions based on existing invasive species populations based on acreages available for management or permitted activities that spread invasive species combined with consideration of with proposed measures to prevent species spread.
Wildland fire management would include the following management measures to prevent exotic species introductions	Wildland fires and efforts to manage them may contribute to the spread of aquatic invasive species.	Acreage of burned and adjacent areas at risk of invasion by aquatic invasive species as a result of fire management activities.

Impact Analysis Area

Fish and Aquatic Habitat, Special Status Species, and Aquatic Invasive Species

- Direct/Indirect—NCIP decision area and connected downstream waters within 1.0 mile of BLM-administered lands.
- Cumulative—Watersheds within the NCIP planning area in which BLM-administered lands occur.

Analysis Assumptions

Fish and Aquatic Habitat

- Development associated with mining/timber harvest, development in general, stream crossings, water withdrawal, etc. would be evenly distributed, as allowed by the NCIP alternatives within any given watershed/drainage.
- Specific measures of change – TDS, stream hydro-geomorphics, fish population estimates etc. are not available adequately to use as landscape level indicators for this evaluation.
- Areas of unique fish habitat are captured under the ACEC descriptions.

Fish – Special Status Species

- Implementation of all of the alternatives would be in accordance with existing laws, regulations, and standard management guidelines.
- Impacts to special status fish species are based primarily on potential impacts to habitats managed by the BLM.
- Precise quantitative estimates of impacts generally are not possible because the exact locations of future actions are unknown, population data for species status species are often lacking, or habitat types impacted by surface-disturbing activities cannot be predicted.
- Actions impacting one species have similar impacts on other species using the same habitats or areas. Measures to protect one species generally will result in long-term benefits to other species occurring within that habitat. Where resources overlap, management actions associated with protecting habitats and cultural resources directly benefit special status plant species.
- The more acreage of habitat protected, the greater the benefit to the targeted species.
- Natural fire and prescribed fire are used to manage vegetative communities and can result in short-term adverse impacts with long-term beneficial impacts to fish habitats.
- Because of the migratory nature and relative mobility of some special status these species are impacted by actions on non-BLM-administered land more so than other species. In the case of migratory species, impacts to winter and migration habitats could adversely impact the viability of some species. Winter and migration habitats are assumed to be at least as important to long-term viability of these species as breeding and nesting habitats.

Aquatic Invasive Species

- Future human development proposals would be evenly distributed in different habitat types that may be susceptible to aquatic invasive species in proportion to the abundance of those habitat types under the baseline conditions.
- The number and type of aquatic invasive species may increase during the life of the plan but would be concentrated around areas of human activity (e.g., rivers, trails, roads).
- Increases in introduction and spread of aquatic invasive species could be accelerated by longer growing seasons (climate change).
- Adaptive management tools would be implemented to test, evaluate and adjust the assumptions, objectives, actions, and subsequent on-the-ground results from the implementation of RMP decisions. This strategy would provide resource managers with the flexibility to respond quickly and effectively to changing resource and user conditions.

C.2.8 Coastal Resources and Management

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
Land tenure adjustment in coastal areas.	Loss or gain of coastal lands.	Acres of coastal lands gained or lost by alternative, and qualitative discussion of how the addition or loss of coastal lands relates to coastal resilience to climate change.
Management of recreational access and type of recreation in coastal areas.	Increased or decreased disturbance from recreationists.	Acres of coastal lands subject to recreational use and qualitative discussion of how recreational uses would impact coastal lands and resources.
Revegetation/Restoration of coastal areas.	Increased coast habitat integrity and resilience. Increased opportunities for carbon sequestration through restoration and protection of coastal habitats.	Project acres of coastal lands planned for restoration. Qualitative discussion of highest and best use of coastal habitats as it pertains to coastal plant and animal species, carbon sequestration, coastal resiliency to sea level rise, ground water inundation, and climate change.
Allowing or not allowing locatable, salable, or leasable mineral development in coastal areas.	Increased or decreased disturbance due to permitted activities.	Acres of coastal lands that could be subject to disturbance and qualitative discussion of types and impacts of that disturbance.
Allowing or not allowing surface-disturbing permitted activities in coastal areas.	Increased or decreased disturbance due to permitted activities.	Acres of coastal lands that could be subject to disturbance and qualitative discussion of types and impacts of that disturbance.
Management of OHVs in coastal areas.	Increased or decreased disturbance to coastal resources, impacts to air quality (dust and emissions), soils (erosion and compaction), increased noise disturbance to coastal wildlife species.	<p>Acres of coastal lands subject to direct OHV disturbance and acres subject to indirect noise disturbance (estimated based on noise attenuation calculations and typical noise levels of OHVs).</p> <p>Acres of coastal lands for open riding and miles for designated trail use that are surrounded by endangered plant protection areas. Additionally, acres of coastal lands for open riding and miles for trail use and potential impacts to soils.</p> <p>The amount of OHV use will not be greater than attainment levels for air quality.</p>
Issuance and management of ROWs within the coastal area.	Physical loss of ROW or restrictions to ROW due to transitioning habitats within the coastal area.	Acres of coastal lands subject to sea level rise, dune migration, and/or coastal erosion.

Impact Analysis Area

- Direct/Indirect—BLM-administered coastal areas within the NCIP planning area
- Cumulative—The coastal strip within the planning area; defined by the BLM as 1,000 yards from mean high tide line.

Analysis Assumptions

The BLM made several assumptions to facilitate the analysis of potential effects. Below are general assumptions that apply to all resources. These assumptions set guidelines and provide reasonably foreseeable projected levels of development that would occur within the Northwestern California planning area during the planning period. These assumptions should not be interpreted as constraining or redefining the management objectives and actions proposed for each alternative in **Chapter 2**. Specific resource assumptions are found in **Appendix I**, Approach to the Environmental Analysis:

- Acres are approximate projections for comparison and analytical purposes. Readers should not infer that they reflect exact calculations.
- Land allocations do not compel or authorize any ground-disturbing actions. Future actions and development proposals could be brought forward that will be subject to additional site-specific environmental study and permitting requirements.
- The discussion of effects is based on the best available data. Where data are limited, the BLM used knowledge of the planning area and professional judgment, based on observation and analysis of conditions and responses in similar areas.
- Surface-disturbing actions related to fluid mineral development will comply with Gold Book surface operating standards (and subsequent updates).
- Recreation use within the planning area will increase over the next 20 years, given the increase in population and popularity of coastal recreation areas.
- Climate change and sea level rise would continue to increase the potential for inundation of and damage to coastal resources from high force wave events.

C.2.9 Wildland Fire Ecology and Management

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
BLM would use NFPORs, WFDSS, and IFTDSS as well as subsequent fire planning and decision support tools. BLM would also promote community engagement and partnerships, such as co-stewardship, in fire planning, wildfire risk management, and response through continued engagement in the California Management Agreement.	This would increase pre-fire planning and agency/community collaboration in identifying new fire management and suppression approaches.	Qualitative discussion on how this would impact vegetation and wildland fire in the planning area.

Action Affecting Resource	Type of Impact	Impact Indicators
Restrictions on the use of prescribed fire or wildland fire use because of resources	Prescribed fires or wildland limitations may cause limitations on the amount of type of vegetation treatment, with subsequent impacts on vegetation loading and/or fire behavior.	Identification of locations and acreages where prescribed fire and wildland fire use would be restricted and qualitative discussion of what that would mean for fire management and subsequent fire and vegetation conditions.
Restrictions on fire suppression activities (not allowing heavy equipment, not allowing chemical suppressants, etc.)	Restrictions on how suppression is done may limit the ability to control a wildland fire.	Acres and locations where fire suppression is restricted and qualitative description on how that would impact fire suppression success under varying wildland fire scenarios.
Areas where vegetation/fire management tools (prescribed fire and wildland fire use, chemical, mechanical) are allowed to meeting resource objectives (fuel loading, SOD, etc.)	Use of all available fire management tools provides more flexibility and greater effectiveness in managing in addressing long-term vegetation loading and fire behavior and returning the fire regime to more natural conditions or conditions more appropriate to maintain public health and safety or meet resource objectives.	Locations and acreages where fire management actions are allowed with qualitative discussion of what that would mean for fire management and subsequent fire and vegetation conditions.
General MCA/BMPs that apply across planning area (ES/BA, reclamation, use of MIST, etc.)	BMPs/MCA for fire management reduce post-fire environmental degradation, decrease potential risks to public safety, and would help protect sensitive resources.	Qualitative discussion of how general MCA/BMPs would impact fire management and resulting vegetation condition, fire behavior, and public health and safety.
Prioritization of areas for fire management (DPAs, Wilderness, WSAs, wildlife habitat areas, traditional Tribal uses, critical infrastructure, ROWs, etc.)	Prioritizing certain areas provides a greater likelihood that fuel loading will be controlled in those areas, thus reducing the likelihood of catastrophic fire events that can cause significant damage to resource values/function.	Acres and type of areas prioritized for fire management and qualitative description of how that would impact fire risk to those resources/uses.
Visual Resources Management (VRM)	Potential restrictions on the size, type and location of fuel treatments.	Acres of VRM Class I and II lands and qualitative discussion on how that would impact fire management activities.
Vegetation and Forestry management actions (thinning of vegetation, timber harvest, site preparation for reforestation, management of riparian management areas, Oak Woodlands, LSRs, non-LSR forested areas, other vegetation cover types, etc).	Vegetation management actions can affect fuel loading and change vegetation fuel types, which, in turn, can affect fire management and fire behavior.	Acres and type of forestry and vegetation management with qualitative discussion on what this management would do to fire behavior and fire management.
OHV designations and locations managed for high recreational use	OHV Open and Limited areas and areas with high recreational use create an additional risk of inadvertent ignitions along with concerns that establishing fuel breaks would increase OHV use within them.	Acres of areas classified as OHV Open or Limited and SRMAs with high recreational use with qualitative discussion of how this impacts ignition risk.

Action Affecting Resource	Type of Impact	Impact Indicators
Areas managed as infrastructure sites and/or utility corridors	Placement of utilities impacts fire management priorities and methods.	Acres of high fire risk/return interval that overlap with proposed infrastructure sites and existing utility corridors, and qualitative analysis on how that would impact fire ignition risk and fire management priorities.
Areas open/closed to these uses: <ul style="list-style-type: none"> • Locatable Minerals • Leasable Minerals • Mineral Materials • Utility Corridors • Permitted surface disturbing activities • Timber harvest • Harvest of forest products 	Areas open for these public land uses would increase the potential for human caused fires because of the presence of motorized construction equipment, transportation of chemicals or fuel, refueling. Additionally, the present of constructed infrastructure/facilities would increase suppression needs and change suppression priorities.	Acres open and closed to these activities and qualitative discussion of how that would impact fire ignition risk and fire management priorities.

Impact Analysis Area

- Direct/Indirect—NCIP planning area
- Cumulative—NCIP planning area

Analysis Assumptions

- Fuel treatments would reduce the potential spread and intensity of wildfire.
- Fire is an important functional, natural disturbance in many of the ecological systems found in the planning area.
- A direct relationship exists between the density of human use within the planning area and the frequency of human-caused fires.
- A direct relationship exists between fuel loading and potential fire intensity and severity.
- Human-caused wildfires would be suppressed.
- Demand for fuels treatments would likely increase over the life of this plan.
- Most fires in the planning area have natural causes (e.g., lightning strikes).

C.2.10 Cultural Resources**Impacts and Indicators**

Action Affecting Resource	Type of Impact	Impact Indicators
<p>Use Class I inventory and model to help prioritize surveys of cultural resources or areas that are sensitive/vulnerable. These include:</p> <ul style="list-style-type: none"> • ACECs with relevance and importance (R&I) for cultural resources. • Areas at risk due to climate change or other environmental factors. • Areas where scientific interest for continued research exist. • Areas with potential for future surface disturbing activities. 	<p>Climate change impacts, high recreational use, high fire risk, permitted development and erosion and sedimentation could damage sensitive cultural resources. Survey of vulnerable sites and areas allow hardening, data recovery, curation or other methods to protect those resources.</p>	<p>Number of specific sensitive, protected sites, and acres of survey coverage.</p>
<p>BMPs/stipulations under Management Common to All to help avoid/mitigate impacts to cultural resources from resource management activities and permitted projects.</p>	<p>BMPs/stipulations include survey and avoidance, reclamation and restoration, and monitoring sensitive cultural sites</p>	<p>Impacts of implementing BMPs/stipulations for cultural resources would be analyzed qualitatively; for BMPs/stipulations with requirements for specific sites or areas, acreages and numbers of sites that would be subject to BMPs would be used as an indicator.</p>
<ul style="list-style-type: none"> • Leasable, locatable, and salable decisions (open). • Grazing. • Permitted surface disturbing activities. • OHV use areas. • Utility corridors. • Fire and vegetation management or suppression using ground disturbing methods. • Timber harvest. • Reforestation and associated site preparation activities. 	<p>All of these decisions cause surface disturbances which has the potential to disturb or destroy cultural sites. They also cause visual and noise impacts which can affect the setting and integrity of cultural sites.</p>	<p>Acres open and closed to these surface disturbing areas, particularly in areas with high likelihood of finding significant cultural resources (if data is available). Analysis would include a qualitative description of the impacts these respective activities can have on cultural resources.</p>
<p>VRM class allocations.</p>	<p>Visual impacts can alter character, integrity, association and feeling of prehistoric, historic, and Tribal traditional use or sacred sites.</p>	<p>Acres managed at VRM class IV in areas with known sensitive cultural resources or high likelihood of finding cultural resources.</p>

Action Affecting Resource	Type of Impact	Impact Indicators
Areas that have a high probability for cultural sites eligible for fuels reductions and removal of hazardous trees	Wildfires could adversely affect surface, and shallowly buried historic properties and cultural resources, or impact integrity, character, nature, feeling or use of cultural resources. Cultural resources in planning area will experience greater risk of damage or destruction by wildfire as frequency and extent of wildfires increases.	Acres with high probability of cultural sites that would have decreased risk due to fuels reduction
Designate ACECs with cultural R&I and manage to maintain that R&I, including closing those areas to casual use metal detecting.	Managing for cultural R&I would protect significant cultural resources and cultural setting of these areas.	Acres of ACECs designated for cultural R&I and qualitative description of how management of these ACECS would protect cultural resources.
Closing or developing routes, including non-motorized/non-mechanized routes or acquiring lands to increase public access.	Human access to significant cultural sites increases risk of damage and vandalism.	Number of known significant cultural sites or acres of land with high likelihood of significant cultural resources within 100 meters of existing and proposed access routes/areas (see <i>Chasing Ghosts: A GIS Analysis and Photographic Comparison of Vandalism and Site Degradation in Range Creek Canyon, Utah, Utah Museum of Natural History Occasional Papers 2006-1</i>).
Land tenure adjustment.	Retaining, acquiring or disposing of lands impacts how cultural resources are managed. Lands retained in BLM ownership provide a mandated level of protection to cultural resources that would not be provided if lands are outside of federal ownership, including lands transferred to fee ownership (with the exception of transfer of lands to tribal entities for whom the cultural resources have special significance).	Acres of land with high likelihood of significant cultural resources that are retained/acquired or disposed of with a qualitative analysis of these changes in land use would impact cultural resources.
Areas or locations subject to past recurring vandalism, looting, illegal excavation.	Results in direct, physical alterations and disruption of significant context, historic integrity, and the cultural resource itself.	Acreage of lands where known vandalism, looting, and illegal excavations have occurred.

Impact Analysis Area

- Direct/Indirect—BLM-administered surface lands where ground-disturbing activities would be permitted.
- Cumulative—NCIP planning area. In some instances, the cumulative analysis area may extend into adjacent areas with shared historic, prehistoric, and ethnographic contexts and identified thematic areas of significance.

Analysis Assumptions

- Impacts to archaeological sites and historic properties in the planning area could result from activities associated with surface and subsurface disturbance such as development projects, recreational use/OHV travel, erosion and fire management. Sites are irreplaceable.
- Impacts to cultural resources such as Tribal sacred sites and historic structures could result from management decisions from non-surface disturbing activities that create auditory and/or visual effects that affect cultural setting. or limit or prohibit access to scientists.
- Impacts to Tribal traditional sites may result from management decisions that restrict traditional access or use of such sites.
- Transferring lands with cultural resources out of federal ownership removes the federally-mandated protection and decision-making process for those resources that is mandated under the NHPA.

C.2.11 Paleontological Resources**Impacts and Indicators**

Action Affecting Resource	Type of Impact	Impact Indicators
Prioritize research in PFYC 4 and 5* areas.	Inventory and monitoring of fossil localities is integral to managing, preserving and protecting important resources from damage or destruction	Acreage of PFYC 4 and 5* geologic units. Number of known significant paleontological locales (if applicable).
Prioritize fuels and vegetation management projects in areas with known or high probability of vertebrate fossils or significant non-vertebrate fossils to prevent wildfire related damage to those resources	Wildfires could adversely affect surface, and shallowly buried paleontological resources. Paleontological resources in planning area will experience greater risk of damage or destruction by wildfire as frequency and extent of wildfires increases	Number of known significant paleontological locales or acres of area with high likelihood of vertebrate fossils subject to fuels and vegetation management projects.

Action Affecting Resource	Type of Impact	Impact Indicators
<p>Inadvertent discovery stipulation to be included on all permitted actions. These stipulations would be consistent with Chapter III of BLM Handbook 8270-I and would include the following steps:</p> <ul style="list-style-type: none"> • An assessment by the BLM paleontologist (or other qualified paleontologist approved by the BLM) of the threat of damage to the resource. • A determination of whether avoidance of the resource is possible. • If avoidance is not possible, an assessment of appropriate mitigation for project impacts to the resource. • BLM would work with project applicant and/or other parties (if applicable) to develop a mitigation plan to address resource impacts. 	<p>ROW and other surface-disturbing actions and development could damage or destroy unidentified significant fossils</p>	<p>Qualitative or quantitative discussion on how the relative amount of ROWs and other surface-disturbing action that would be issued under the alternative would impact/benefit paleontological resources</p>
<p>An on-the-ground survey prior to approval of surface disturbing actions would be required for all activities authorized within PFYC Class 4 and 5* formations and depending on the proposed activity may be required within Class 3 formations where important paleontological resources have been found in the same geologic unit in the planning area.</p> <p>If discoveries are made, then management common to all described above would apply.</p>	<p>Surface-disturbing activities in PFYC Class 4 and 5 formations, and some PFYC Class 3 formations have the potential to damage or destroy significant paleontological resources</p>	<p>Amount (acreage) of areas subject to surface-disturbing activities surveyed and/or monitored; number of significant paleontological localities identified and managed as a result</p>

Action Affecting Resource	Type of Impact	Impact Indicators
<ul style="list-style-type: none"> • Leasable, locatable, and salable decisions (open) • Grazing • Permitted surface disturbing activities • Open OHV areas • Utility corridors, rights-of-ways • Fire and vegetation management or suppression using heavy equipment • Timber harvest, thinning activities, and site preparation for reforestation • Recreation • Land tenure, including disposal. • Other resource management that minimizes or eliminate surface disturbance or human use (e.g., ACECs, LWC, VRM) 	These surface disturbing activities and actions resulting in increased human use/activity have the potential to impact paleontological resources	Acres of PFYC 4 and 5* that that overlap with areas that are open to these surface disturbing activities or changes in use. May include PFYC U, as managed as PFYC 4 or 5*, and PFYC 3.

*Note that no PFYC 5 geologic units are identified within the NCIP planning area.

Impact Analysis Area

- Direct/Indirect—BLM-administered surface lands and split-estate lands where applicable (i.e., mineral entry and leasing)
- Cumulative—NCIP planning area

Analysis Assumptions

- Impacts to paleontological sites (fossil resources of vertebrate and invertebrate animals) in the planning area could result primarily from activities associated with surface and subsurface disturbance such as development projects, mineral extraction; recreational use/OHV travel, erosion and fire management.
- Increased human activity/use through authorized/unauthorized collection or intentional/unintentional vandalism can impact paleontological resources.
- Implementation of all of the alternatives would be in accordance with existing laws, regulations, and standard management guidelines.
- Precise quantitative estimates of impacts to paleontological resources generally are not possible because the exact locations of future actions are unknown, precise location data for fossil localities are often lacking, locations of significant fossil resources are largely unknown, most of planning area has not been inventoried for paleontological resources, and the planning area has a refined PFYC analyses.
- Fossils including paleontological resources are part of the surface estate; therefore, actions on split-estate lands are only covered by PRPA if surface is USFS or DOI.

C.2.12 Visual Resources**Impacts and Indicators**

Action Affecting Resource	Type of Impact	Impact Indicators
Visual Resource Management (VRM) allocations (VRM I, II, III, and IV). These allocations are made to protect scenic areas, as well as in response to other resources or resource uses.	Impacts visual resources in terms of what types of activities are consistent or not consistent with these VRM Class Objectives	Acres managed in each VRM class compared with acreage in each class of the VRI (assumption being that if you manage at a certain VRM class, the landscape will eventually inventory at that class)
Lands and Reality <ul style="list-style-type: none"> • Utility corridors • Renewables • Communication 	All of these land use planning decisions may result in implementation of projects or activities resulting in surface disturbance that may impact visual resources. Many of the impacts of these resource uses are accounted for in the VRM allocation with associated objectives and associated impacts analysis described above.	Acres of area open to surface disturbing activities that would impact visual resources with a qualitative discussion of what those respective impacts could look like. This would defer to the proposed VRM classification as necessary.
Leasable Fluid Materials		
Locatable Minerals <ul style="list-style-type: none"> • Leasable, locatable and salable decisions (open) • Permitted surface disturbance activities, exposed soils 		
Trail and Travel Management <ul style="list-style-type: none"> • Open OHV areas 		
Wildland Fire Management <ul style="list-style-type: none"> • Fire and vegetation management or suppression using heavy equipment 		
Vegetation <ul style="list-style-type: none"> • Timber harvest, thinning activities, and site preparation • Restoration and rehabilitation 		
Recreation and Visitor Services <ul style="list-style-type: none"> • Facilities and infrastructure 		
Soils and Minerals (e.g., Serpentine). <ul style="list-style-type: none"> • Potential color impact 		

Action Affecting Resource	Type of Impact	Impact Indicators
Areas closed to surface disturbing activities due management decisions for other resources or resource allocations (certain ACECs, WSRs, NHTs, Wilderness, etc.)	All of these decisions would preclude surface disturbing activities that have the potential to impact visual resources. Many of these are accounted for in the VRM assignments and associated impacts analysis described above.	Acres of area closed to surface disturbing activities that would impact visual resources with a qualitative discussion of what that would mean for visual resource impacts.
Wilderness and Wilderness Study Areas		
National Scenic and Historic Trails		
Lands with Wilderness Characteristics		
Wild and Scenic Rivers		

Impact Analysis Area

- Direct/Indirect—NCIP decision area
- Cumulative—NCIP decision area

Analysis Assumptions

- Protection of visual resources would be commensurate with standards identified in each VRM class objective.
- VRM class objectives apply to all program areas and would be adhered to through project design, avoidance, or mitigation. An estimate can be made of reasonably foreseeable annual prescribed fire, and wildland fire treatments and wildfire acreages.
- Visual design considerations will be incorporated into all surface-disturbing projects or activities regardless of size, potential impact, or VRM class.
- Activities that cause the most contrast and thus are the most noticeable to the casual viewer would be considered to have the greatest effect on scenic quality. The severity of a visual effect depends on a variety of factors, including the size and scale of a project, vegetation and landform manipulation, and the overall visibility of disturbed areas. The more protection that is associated with the management of other resources and special designations, the greater the benefit to visual resources of the surrounding viewsheds.
- Projects/actions would be designed to meet VRM class objectives. If a project could not be designed to meet VRM objectives, the project/ action would not be approved, or a plan amendment would be necessary.
- Recent wildfire perimeters in relation to Scenic Quality Class: vegetation is assumed to be a dynamic component and part of the changing landscape.
- Visitors to BLM-administered public lands or residents living near BLM-administered public lands are sensitive receptors for impacts on visual quality.
- The magnitude (or dominance) of a visual effect depends on a variety of factors, including the size of a project (i.e., area disturbed, physical size of structures), the location and design of roads and trails, and the overall visibility of disturbed areas.

- Visual resource design techniques and BMPs would be implemented to mitigate potentially harmful impacts.
- Visual contrast ratings would be required for all projects that fall within VRM Classes I, II, III, and IV to determine conformance to the RMP VRM decisions, and for all projects introducing significant change to identify ways to reduce visual contrast. The visual contrast rating system would be used as a guide to analyze site-specific impacts of projects as well as facility design and placement. These facilities would be designed to minimize their visual impacts to conform to the area's VRM class objective. This would allow the BLM to reduce impacts on a site-specific basis to ensure compliance with the assigned VRM class.

C.2.13 Lands with Wilderness Characteristics

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
Lands with wilderness characteristics management decision (managing for wilderness characteristics as a priority, managing for wilderness characteristics while allowing for other use, or not managing for wilderness characteristics).	Not managing for wilderness characteristics could result in development or other uses that lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of land managed for wilderness characteristics by management "tier" (managed as a priority, managed for with other resource management but not as a priority, not managed for wilderness characteristics).
Travel decision: open and limited	OHV use could cause surface disturbance and lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of land with wilderness characteristic as a priority that are affected by these decisions.
Leasable minerals decisions: open under standard terms and conditions, moderate constraints (CSU), and major constraints (NSO)	Mineral development causes surface disturbance and may lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of land with wilderness characteristic as a priority that are affected by these decisions.
Mineral materials decision: open and open with special terms and conditions	Mineral development causes surface disturbance and may lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of land with wilderness characteristic as a priority that are affected by these decisions.
Locatable mineral decision: Open to mineral entry; recommended or previously recommended for withdrawal	Mineral development causes surface disturbance and may lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of land with wilderness characteristic as a priority that are affected by these decisions.
ROW decision: open and ROW avoidance area	Land use authorization may lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of land with wilderness characteristic as a priority that are affected by these decisions.

Action Affecting Resource	Type of Impact	Impact Indicators
Land tenure decisions	Land retention, acquisition, or disposal decision could improve or adversely affect management of natural values or primitive activities.	Acres of land with wilderness characteristic as a priority that are affected by these decisions.
OHV decision: open and limited	OHV use may lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of land with wilderness characteristic as a priority that are affected by these decisions.
VRM decision: VRM Class II, III, and IV	VRM classification guide permitting decision that may affect wilderness characteristics.	Acres of land with wilderness characteristic as a priority that are affected by these decisions.
Grazing decision: available	Grazing authorization may lead to a loss of naturalness or integrity of the ecosystem and native vegetation communities.	Acres of land with wilderness characteristic as a priority that are affected by these decisions.
Commercial woodland harvest	Harvest may lead to a loss of naturalness and native vegetation communities.	Acres of land with wilderness characteristic as a priority that are affected by these decisions. Qualitative discussion if acres are not available.
Wildland fire management	Fire management may include techniques to minimize impacts to naturalness from activities such as construction of fire roads and vegetation clearing, and to restore native vegetation communities.	Acres of land with wilderness characteristic as a priority that are affected by these decisions. Qualitative discussion if acres are not available.
Vegetation and wildlife	Vegetation and wildlife management decisions may include techniques to minimize impacts to naturalness, restore native vegetation communities or otherwise protect wilderness character.	Acres of land with wilderness characteristic as a priority that are affected by these decisions. Qualitative discussion if acres are not available.

Impact Analysis Area

- Direct/Indirect—NCIP decision area
- Cumulative—NCIP decision area

Analysis Assumptions

- The wilderness characteristic inventory includes an assessment of all BLM-administered lands within the planning area.
- Lands with wilderness characteristics could lose their natural character and opportunities for solitude and primitive recreation due to surface disturbances, such as permitted mineral location and entry, ROW authorizations, OHV use designated as open, and the construction of structures.
- Actions consistent with VRM Class II, III, and IV could potentially result in a loss of natural character.
- Potential impacts on lands managed for wilderness characteristics from subsequent undertakings (implementation of the planning decisions or site-specific project proposals) require separate compliance with NEPA.

C.2.14 Cave and Karst**Impacts and Indicators**

Action Affecting Resource	Type of Impact	Impact Indicators
Decisions to allow or not allow surface disturbing activities in or around cave karst areas.	Surface disturbance to cave karst.	Acres and/or actual sites that do or do not have the potential to be disturbed.
Decisions to limit or not limit recreational access to cave karst areas.	Human disturbance and increased risk of transmission of white nose syndrome, or impacts to other sensitive species.	Acres and/or actual sites that do or do not have the potential to be disturbed.
Scientific and management access as well. Fence installation to preclude cattle impacts of a rock shelter could impact cultural resources.	Disturbance of cultural resources.	
Decisions to survey cave karst resources.	Increased knowledge and ability to adaptively manage cave karst resources.	Acres and/or actual site that will have enhanced information and therefore better adaptive management.
	Spread of WNS or other adverse impacts to sensitive species.	Consideration of Tribal preservation of the resources.
	Impacts to cultural resources.	

Impact Analysis Area

- Direct/Indirect—The analysis area for cave and karst resources covers cave karst areas on BLM-administered lands within the planning area and would include all land not covered by a waterbody without regard to potential use since caves are ubiquitous and may be altered due to changes outside an area of development. Coastal sea caves, and caves that extend underground to adjoining lands or vice-versa are also considered.
- Cumulative—BLM-administered lands within the planning area

Analysis Assumptions

- Caves and karst resources that occur on all land within cave and karst areas within the management area except those covered by a permanent body of water.
- Information about the amount of surface-disturbing activities can be drawn or generalized from relevant re-ports.
- Impact assessment would be qualitative coupled with a description of the various processes envisioned under each alternative.

C.2.15 Forestry**Impacts and Indicators**

Action Affecting Resource	Type of Impact	Impact Indicators
Forestry decisions related to managing riparian management areas, LSRs, Oak Woodlands, and non-LSR Forested Areas	Impacts to forest stand composition, stand health, and resiliency to fire and pests/pathogens due to management associated with buffer widths and vegetation management (canopy coverage, cohort management, etc.) in riparian management areas, LSRs, Oak Woodlands, and non-LSR Forested Areas	Acres of forestry type that would be impacted by management (based on buffer widths and known forestry types) combined with a qualitative description of how that management would impact that acreage.
		Acres of forest stand development/age class that would be impacted by riparian management area buffer widths and LSR designation.
		Acres of Oak Woodlands choked out or converted by conifer encroachment.
Travel management decisions.	Limiting or prohibiting OHV use may limit access to forest products. Exceptions will limit impacts on collection of products for subsistence use.	Miles of trails or acres designated as open, limited, or closed to motorized use overlaid with commercial woodland harvest area.
	Road decommissioning and permanent road closures would result in reducing access for timber harvest, thinning activities, and/or site prep and reforestation.	Miles of roads that have been decommissioned/permanently closed and acres of BLM managed lands not accessible for timber, thinning and reforestation due to closures.
	Increase road use, road opening or construction.	
Forestry BMPs for soil protection.	Limiting timber sale operations in the flood zone of perennial rivers and streams (riparian management areas), in sensitive soil types, and during certain soil conditions (i.e., during thaw conditions or heavy rainfall) would result in site specific limitations on timber harvest, thinning activities, and site prep for reforestation, potentially impacting overall volume of harvested acres and acres treated for pre-commercial thinning or reforestation.	Acres of flood zone of perennial rivers and streams overlaid with non-LSR Forested Areas.
	Limiting timber harvest in riparian zones of perennial streams would impact ability to recruit wood for downed woody debris (DWD) to promote wildlife habitat and to be utilized for instream restoration projects in site specific areas.	Acres of riparian zone for perennial streams overlaid with non-LSR Forested Areas.

Action Affecting Resource	Type of Impact	Impact Indicators
Limitations on timber and/or forestry products harvest.	Limiting or prohibiting commercial woodland and timber harvest could potentially impact overall volume of harvest.	Acres of areas where timber or forestry products would not be allowed or would be limited; if possible, estimates on number of board feet or cords of wood no longer available for harvest. Acres of areas where timber or forestry products would not be allowed to be harvested or would be limited, that have insect and disease infestations, blowdown or windthrow, and/or fire mortality.
Migratory Birds and raptors management.	Seasonal limitations on disturbance and vegetation clearing would result in seasonal, site specific limits on timber harvest, forest thinning, and site prep for reforestation.	Migratory bird and raptor habitat (if mapped) overlaid with timber harvest areas and non-LSR forested areas; acres subject to seasonal limitations and qualitative description of impacts.
VRM Class I and II designation.	Areas designated as VRM Class I or II would impose limitations on vegetation manipulation that may impact ability to conduct timber harvest, pre-commercial thinning, site prep, and reforestation.	Acres of VRM Class I and II overlaid with areas available for timber and forestry products harvest, thinning activities, site prep and reforestation.
Management of land for wilderness characteristics.	Management of areas for wilderness characteristics would include the prohibition on timber harvest, thinning, site prep, reforestation, and/or firewood cutting and SFR removal, resulting in site specific limitations on ability to harvest products.	Acres of lands managed for wilderness characteristics as a priority in areas where timber or forestry products harvest occurs or could be a desired management option.
ACEC designation and management.	Closures to timber harvest or commercial forest product harvest in specific ACECs would result in limits on the ability to harvest timber and other woodland products. In ACECs open to harvest, other measure to protect sensitive resources may result in restrictions on the method, timing or location or harvest.	Acres of ACEC designation with closure or limitations on timber or commercial forestry products harvest overlaid with timber or forestry products harvest areas. Acres closed to timber harvest for ACEC designation (by ACEC).
WSR impacts.	Measures to protect WSR corridors may result in restrictions on the method, timing or location of timber harvest, thinning activities, and/or site prep for reforestation.	Acres of WSR corridors overlaid with commercial timber or forestry products harvest areas and areas where site prep and reforestation are planned to occur.

Impact Analysis Area

- Direct/Indirect—BLM-administered lands in the planning area
- Cumulative—All counties within NCIP planning area

Analysis Assumptions

- Management actions related to protecting such resources as water quality, air quality, cultural resources, riparian areas, soils, fisheries, wildlife, special status plants, and ACECs, affect the acres and output of forest products, the ability to conduct pre-commercial forest thinning activities for fuels reduction or habitat improvement, and site prep for reforestation.
- Forest products available for harvest may be impacted by factors outside of BLM management decisions including but not limited to wildland fires, change in vegetation due to shifts in vegetation cover type or precipitation levels, drought, insect infestations, and disease pathogens.
- Levels of demand for forest products would remain relatively stable over the life of the plan and will primarily consist of subsistence uses.
- There is a demand from industry to provide commercial timber harvest and from adjacent landowners to use timber harvest as a tool to reduce fuels commercially and improve forest health
- The BLM will continue to provide for permitting the harvest of forest products under sustained yields.
- The BLM will continue to utilize pre-commercial thinning and timber harvest when needed to reduce fuels and improve stand health and habitat.
- The demand for utilizing a variety of forest management tools, including timber harvests, to reduce fuels and increase stand resiliency will likely increase due to community and industry demand and under climate change.
- The need for post-disturbance salvage sales, site preparation activities, and reforestation is likely to increase.
- Necessary funding for forestry projects will be available, and forestry projects will be pursued across the decision area.
- Analysis of land management decisions regarding forestry often involves the allowable sale quantity (ASQ) and the calculation of the potential sale quantity (PSQ), as described in the Land Use Planning Handbook, Appendix C, page 13 and 14 (BLM 2011). Forestry activities prioritized by the goals and objectives under the NCIP will focus on treating forested areas to achieve the desired condition. As such, the PSQ is a less meaningful metric for impact analysis under the alternatives, and it will not be used.
- Precise quantitative estimates of impacts generally are not possible because the exact locations and nature of future forestry activities are unknown.

C.2.16 Lands and Realty

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
Locatable and Leasable Mineral and Other Withdrawals.	Existing withdrawals would be recommended to be continued and new withdrawal proposals for locatable and leasable minerals would ensure those lands are not open to mining and oil/gas exploration and potential development.	Number of acres proposed for mineral and non-mineral withdrawal

Action Affecting Resource	Type of Impact	Impact Indicators
ROW Avoidance and Exclusion Areas.	<p>ROW exclusion (except for existing ROWs or designated corridors) would not allow future opportunities for new ROW actions.</p> <p>ROW avoidance may allow future opportunities for new ROW actions with special considerations, if there are no other feasible alternatives. Existing ROWs in avoidance areas are permitted to continue and collocation would be encouraged.</p>	<p>Acres of land in exclusion areas.</p> <p>Acres of land in ROW avoidance areas and a qualitative description of impacts on resource(s) (see assumptions, below).</p> <p>Number/acres of existing ROWs within ROW avoidance areas</p>
Designated Section 368 ROW corridors.	<p>Will be a preferred location for existing and future authorizations and is suitable to accommodate similar or compatible uses within the corridor.</p> <p>May limit flexibility of utilities in routing across BLM lands.</p>	Total linear miles of available corridors for linear projects.
VRM Class II and III	VRM classifications may further limit areas where ROWs are permitted even if not within a ROW avoidance or exclusion area	VRM Class II and/or III acreage that is outside ROW a/e areas
Apiary permit restrictions	Reduction in the availability of apiary permits	Acres available for apiary permits
Communications site restrictions	Reduction in availability of new communications sites	Acres available for communications sites
Water ROW restrictions	Reduction in availability of new water ROWs	Acres available for water ROWs

Impact Analysis Area

- Direct/Indirect—NCIP planning area
- Cumulative—NCIP planning area

Analysis Assumptions

- Analysis will be based on the official survey records, land status records system, surface management agency (SMA), public land survey system dataset (PLSSDS) and GIS. Reference for this is the survey records and the land status records are authoritative sources, the SMA and PLSSDS are secondary sources, and GIS, for land status data, is based on the others. ROW avoidance areas would only be impacted if no other ROW option was available.
- Resource changes in land use would be assessed under the specific resource being impacted. For the purpose of this analysis, this section would only focus on changes related to land status and use.

C.2.17 Energy and Minerals**Impacts and Indicators – Leasable Minerals**

Action Affecting Resource	Type of Impact	Impact Indicators
Leasable Minerals		
Stipulations for leasable (Standard Stips, NSO, Timing and controlled surface use).	Stipulations indicate what limitations are placed on leasable development. NSO would not allow surface occupancy and would require operators to access resource through directional drilling.	Acres managed under each stipulation.
Reasonably foreseeable development.	Extracts a finite resource and therefore decreases future availability.	Volume of leasable minerals removed based on any RFD or rate of development.
Closed to leasable.	Precludes leasable extraction.	Acres closed and open to leasable mineral development, particularly in high potential areas.
Geothermal		
Unless already closed to mineral development the BLM will allow development of other leasable minerals/products (geothermal, phosphate, etc.) within the planning area.	Provide opportunity to develop alternative leasable minerals/products in the planning area.	Acres closed and open to geothermal, particularly in high potential areas.
Other resource decisions.	Other resource decision impacts on leasables are captured through the stipulations which need to be consistent with other resource management decisions.	Addressed by indicators above.

Impacts and Indicators – Locatable Minerals

Action Affecting Resource	Type of Impact	Impact Indicators
Areas open and withdrawn from locatable entry (the bulk of other resource decisions are reflected in these decisions as they were made to ensure consistency of mineral development with other resource uses).	This determines where mining can and cannot happen.	Acres open and closed, particularly in high mineral potential areas.
BLM will manage mining related activities in accordance with 43 CFR 3809, 3802, and 3715.	Prevent unnecessary degradation of public lands by operations authorized by the mining laws.	Permit application, monitoring and reclamation as per 43 CFR 3800. Qualitative description of impact on mining.
BLM will require zero discharge facility in sensitive resource areas.	Prevent unnecessary degradation of public lands by operations authorized by the mining laws.	Permit application, monitoring and reclamation as per 43 CFR 3800. Qualitative description of impact on mining.
BLM will require that all mine development in the planning area must be reclaimed in accordance with an approved reclamation plan that meets all applicable criteria outlined in 43 CFR 3600.	Prevent unnecessary degradation of public lands by operations authorized by the mining laws.	Permit application, monitoring and reclamation as per 43 CFR 3800. Qualitative description of impact on mining.

Action Affecting Resource	Type of Impact	Impact Indicators
VRM decisions.	VRM decisions for surrounding lands can affect how mining projects are implemented	Acres of open to mining in high mineral potential areas that are also managed as VRM I and II.
Decisions on allowing dredging (for locatable development; dredging decisions for recreational mining are covered in the recreation worksheet).	Not allowing dredging reduces the effectiveness of placer mining.	Miles of stream with high mineral potential where dredging is not allowed.
ACECs closed to metal detecting if they have a cultural R&I value	Limiting casual use metal detecting	Acres closed to casual use metal detecting.

Impacts and Indicators – Mineral Materials

Action Affecting Resource	Type of Impact	Impact Indicators
Decisions on what areas are open and closed to salable development as a result of other resource management actions.	This would determine where salable development could occur.	Acres of area open and closed to salable development, including areas with high salable potential.
Visual management.	Visual management could direct how and if salable development could be done.	Acres of areas open for salable development that are managed as VRM I or II, particularly areas with high salable potential.

Impact Analysis Area

Leasable, Locatable, Mineral Materials

- Direct/Indirect—BLM-administered lands in the planning area
- Cumulative—NCIP planning area

Analysis Assumptions

Leasable Minerals

- Oil, gas and geothermal are the only leasable mineral resources known to exist in potentially recoverable amounts within the planning area.
- No development of oil or gas resources is expected to occur during the planning period due to lack of economically viable resource deposits.
- Geothermal potential exists in the southern portion of the Arcata Field Office.
- No surface occupancy does not preclude development but does change how the resource is accessed.
- Due to the lack of potential, coal leasing is not considered in this RMP. Any future decision to lease coal would require an RMP amendment.

Locatable Minerals

- Mining laws prescribe much of the management of locatable minerals.

Mineral Materials

- The NCIP Mineral Potential Report includes locations and acreages of high salable potential or BLM has GIS data that can be used to estimate that.

C.2.18 Recreation and Visitor Services**Impacts and Indicators**

Action Affecting Resource	Type of Impact	Impact Indicators
Management for open, limited, and closed for OHV travel	The location, timing, and acreage of limitations on OHVs may reduce or increase recreational opportunities associated with these modes of travel. (i.e., Increasing the opportunity for conflict between competing or different recreation activities).	Total acres where OHV management actions result in long-term increase or decrease of basic recreation and visitor services and desired outcomes.
Fire management –suppression, fuels management, and (if applicable) post-fire rehabilitation	<p>Fire management actions can result in long-term elimination or reduction of basic recreation experience and desired outcomes.</p> <p>There would be short term impacts from wildfire smoke on recreation. This is because smoke may interfere with recreational opportunities and experiences.</p>	<p>Acres of fire management actions that eliminate or reduce basic recreation experience and desired outcomes.</p> <p>Depending on the location, smoke could affect the recreational experience and desired outcomes in the short term. This would include a qualitative analysis related to how management would affect recreational experience.</p>
Managing lands with wilderness characteristics	<p>Managing lands to protect wilderness characteristics would preserve opportunities for non-motorized recreation over the long term.</p> <p>Are there any impacts to the converse (i.e., reduction in motorized access? If so, disclose them).</p>	Acres of land managed for wilderness characteristics that provide opportunities for wilderness recreation. (Conversely, a reduction of opportunity for a non-wilderness activity such as motorized recreation)
ACEC management	<p>Improvement in recreational experiences/qualities and conditions/stewardship due to the reduction in human waste in these areas.</p> <p>Impact on recreational experiences/qualities and conditions/stewardship could result from lack of management of human waste in these areas.</p> <p>Closing trails would reduce opportunities for recreation if rerouting is not feasible.</p>	Acres of ACECs managed involving recreational experience and desired outcomes.
Management of SRPs	<p>There would continue to be opportunities for commercial and dispersed recreation along NTMC trails.</p> <p>Changes in allowed use could affect recreation opportunities.</p>	If applicable, the estimated number of SRPs existing today that would be modified, added, or terminated (such as by the creation of an SRMA) and how that would impact both permitted, especially guides and outfitters, and casual use recreationists.

Action Affecting Resource	Type of Impact	Impact Indicators
Management of SRMAs and ERMA's	SRMAs and ERMA's would be managed to provide certain recreational experiences and desired outcomes (depending on the RMA management. Closing trails would reduce opportunities for recreation if rerouting is not feasible.	Acres of SRMA or ERMA managed.
Permitted surface disturbing activities: <ul style="list-style-type: none"> Leasable, locatable and salable decisions (open) Grazing Utility corridors Timber harvest 	These activities result in noise or some other type of disturbance (such as lighting) that decreases recreational experience.	Acres where these respective resource uses would occur overlapped with SRMAs and ERMA's.
Land tenure decisions	Disposal or retaining/acquiring lands moves land from public access, thereby decreasing recreational opportunities.	Acres of land retained or acquired that provide recreational experience or recreational access. Acres of land disposed of that provide recreational experience or recreational access.
Wild and Scenic Rivers	This limits development and improves access/scenery.	Miles of WSRs
Riparian management area restoration	This limits development and improves access/scenery for intermittent/perennial streams.	Acres of restoration or miles of intermittent/perennial streams restored
E-bikes	How e-bike decisions will impact recreational experience (both good and bad)	Miles of trail open to e-bike use – qualitative description of changes in recreational experience.
Camping closures	How proposed camping restrictions (day use only designations) would impact camping availability and experience	Acres of planning area open/closed to camping outside of designated campgrounds and qualitative discussion on how that would change the experience (both good and bad).
Shooting closures (of various types)	How shooting closures would impact shooting availability as well as other recreational uses in an area.	Acres open/closed to shooting

Impact Analysis Area

- Direct/Indirect—BLM-administered lands in the planning area
- Cumulative—NCIP planning area

Analysis Assumptions

- Summer recreation levels are likely to increase and winter recreation levels may decrease with the expected lengthening of the summer season and warmer summer temperatures.
- Improved vehicle technology will result in increased demand for summer OHV recreation opportunities.
- Overall, recreation use in the planning area is very high and is likely to continue to grow.

- Demand for SRPs will increase during the life of the plan.
- Areas not managed as SRMAs or ERMAs allow recreation activities to occur, but recreation is not emphasized. These areas are managed to allow recreation uses that are not in conflict with the primary uses for these lands or significant cultural and natural resources.
- Individual SRMAs are managed to protect and enhance a targeted set of activities, experiences, benefits, and desired RSCs.
- Individual ERMAs are managed to support and sustain the principal recreation activities and the associated qualities and conditions of the ERMA. Management of ERMAs is in balance with the management of other resources and resource uses.
- Analysis of the economic impacts of user fees and SRP management on guides and outfitters would be described under the Socioeconomics section in Chapter 4.
- Analysis of public safety, such as during recreation, would be described under the Public Health and Safety section in Chapter 4.
- Summer use levels on undeveloped trails will become more impacted each year as use levels increase throughout the planning area in areas with soils not well-suited to OHV travel.
- RMAs have identified recreation outcomes tied to desired experiences and settings. These areas can be analyzed more specifically than undesignated areas. Accordingly, the focus of the impact analysis will be on SRMAs and ERMAs, with less analysis for undesignated areas.
- Changing access to BLM-administered lands may increase recreational demand in some areas, while decreasing demand in other areas by dispersing recreation throughout the decision area.
- Recreation use would increase over the next 20 years, given the increase in population and popularity of coastal recreation areas. As a result, adverse impacts to coastal resources would potentially increase.
- Climate change and sea level rise would continue to increase the potential for inundation of and damage to coastal resources from high force wave events.
- All acreage calculations are rounded to the nearest 100.

C.2.19 Travel and Transportation Management

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
OHV designations – Open, Limited to Designated Routes, Closed	Depending on the chosen management direction, these allocations could limit or increase OHV access	Acres of proposed OHV designations in each of these categories; Miles of OHV trails available in limited areas and not available in closed areas
Development of trails and/or connecting trails between existing transportation routes	Developing trails would increase the existing trail network and create greater access to BLM-managed surface lands	Estimated miles of developed trails and connecting trails that could be constructed within the life of the plan with qualitative discussion of how they link with current travel network
Development of e-bike trail use direction and management	Increased access to existing trails by e-bike users	Miles of trail with e-bike access Miles of trail formerly not available to e-bikes that are now available with qualitative discussion

Action Affecting Resource	Type of Impact	Impact Indicators
Land tenure adjustment for access	Retaining or acquiring additional lands could increase access to the transportation network within BLM-managed surface lands	Acres of land retained or acquired that provides or has the potential to provide access to public land or connections between public lands or travel networks
Land tenure adjustment - disposals	Disposal may get rid of lands that could eventually provide connection between trail networks or isolated parcels of public lands	Acres of lands disposed that provide or have the potential to provide access to public land or connections between public lands or travel networks
LWC	Restrictions on future perm road development in LWC areas	Acres of area with restriction on new perm road construction

Impact Analysis Area

- Direct/Indirect—NCIP decision area
- Cumulative—NCIP planning area

Analysis Assumptions

- Degradation of roads and trails in the planning area from natural processes (e.g., erosion) will continue regardless of avoidance of human caused impacts.
- Natural processes are not considered impacts to roads and trails.

C.2.20 Livestock Grazing

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
ACEC decisions – closing certain ACECs to grazing	Potential future closing of ACECs to grazing would reduce the number of acres available for livestock grazing.	Acres projected to be unavailable due to closure of ACECs.
Leasable development.	Surface disturbance from leasable development reduces the number of acres available for livestock grazing.	Acres projected to be unavailable due to leasable development based on RFD (which is not anticipated to occur).
OHV decisions – open, limited, closed.	In both open and limited OHV areas, livestock could be subject to harassment by motorized recreationists. Furthermore, recreationists in open and limited OHV areas may vandalize grazing infrastructure such as water troughs and fences/gates.	Acres within recreation management areas where motorized use is the primary use. Costs associated with repairs/replacement of fencing and water troughs. OHV closed areas that overlap with allotments due to access issues for livestock management.
Recreation management	Within recreation management areas livestock could be subject to harassment by recreationists, hikers with dogs, equestrians, mountain bikes, shooting. Furthermore, recreationists may vandalize/damage grazing infrastructure such as water troughs and fences/gates.	Acres of grazing allotments that overlap with recreation management areas.
Grazing decisions – open or closed.	Would determine how many acres are available for grazing in planning area.	Total acres open and closed to grazing within the planning area. Number of allotments/acres allotted open or closed to grazing.

Action Affecting Resource	Type of Impact	Impact Indicators
Fire management decisions related to prescribed fire.	Prescribed fire removes vegetation, and may temporarily reduce or exclude grazing.	Qualitative discussion of the impacts (socioeconomic) to grazing lessees as a result of temporary suspension of grazing during prescribed fire.
Forestry operations including timber harvest.	Forest health practices (timber harvest, fuel reduction etc.) may result in conflicts with grazing operations such as damage to fences, and grazing infrastructure.	Qualitative discussion of the impacts (socioeconomic) to grazing lessees as a result of required repairs/replacement of grazing infrastructure.

Impact Analysis Area

- Direct/Indirect—BLM-administered lands within the planning area
- Cumulative—BLM-administered lands in the planning area, plus connected watersheds and riparian areas upstream and downstream, and adjacent lands with grazing operations.

Analysis Assumptions

- Grazing operations that overlap multiple land ownerships are accounted for in the analysis.
- Reasonable projections of ongoing and future vegetation shifts due to climate or other factors are available.
- Lessees are currently complying with grazing regulations on BLM-administered lands within the planning area.

C.2.21 Renewable Energy

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
Closures to solar or wind energy development, including ROW avoidance/exclusion areas, VRM I and VRM II areas, areas with no permitted surface disturbing activities	This would impact whether development could occur or not.	Acres open to solar and wind development in relation to high wind potential and high solar potential areas
Designation of corridors	Corridor designation would impact routes for transmission from facilities and in between population centers	Miles and locations of corridors in relation to high wind, solar, and geothermal potential areas
Areas open and closed for commercial forest products harvest	This would impact development of biomass	Acres open and closed to commercial forest products harvest and estimate of biomass availability if supported by data.
Areas open or closed to geothermal leasing	Would impact the ability to develop geothermal	Acres open and closed for leasing in relation to high geothermal potential areas.

Impact Analysis Area

- Direct/Indirect—NCIP decision area
- Cumulative—NCIP planning area

Analysis Assumptions

- The main renewable energy sources are assumed to be solar, wind, geothermal, biomass, and hydro/microhydro.

C.2.22 Areas of Critical Environmental Concern**Impacts and Indicators**

Action Affecting Resource	Type of Impact	Impact Indicators
ACEC management decisions.	Impacts to R&I values because of ACEC management decisions.	Acres of ACEC that would be managed for R&I and impact of ACEC management on that R&I.
<u>Leasable minerals decisions:</u> open under standard terms and conditions, moderate constraints (CSU) and major constraints (NSO).	Impacts are specific to the ACEC and are based on the impact that management action(s) would have on the R&I values of an ACEC.	<u>For cultural/wildlife/plants/scenic/recreation resources ACECs:</u> Total acres within each ACEC where R&I values of the ACEC are affected by surface occupancy or surface-disturbing activities.
<u>Locatable mineral decisions:</u> Open to mineral entry; recommended or previously recommended for withdrawal		<u>For fish ACECs:</u> Total stream miles within each ACEC where R&I values of the ACEC are affected by surface occupancy or surface-disturbing activities.
<u>Mineral materials decisions:</u> <ul style="list-style-type: none"> • Open; open with special terms and conditions. • ROW exclusion area/ROW avoidance area • OHV decisions (Limited/closed). • VRM Class (VRM I, II, III, or IV). • Grazing decisions (Available, unavailable). • Commercial woodland harvest • Wildland or prescribed fire use • Vegetation and wildlife decisions 		

Impact Analysis Area

- Direct/Indirect—The acreage of BLM-administered lands within each potential ACEC within the planning area.
- Cumulative—NCIP planning area where R&I values of ACECs are present.

Analysis Assumptions

- Although management actions for most resources and resource uses could have planning area-wide application, ACEC management prescriptions apply only to those lands in each specific ACEC, as outlined.
- ACEC designation provides protection and focused management for relevant values beyond that provided through general management of the parent resource (e.g., the cultural resource ACECs)

will receive greater recognition and protection than the general management action regarding cultural resources).

- Specific impacts to relevant and important values would depend on the type of mineral entry activity and effectiveness of subsequent reclamation, its interaction (both spatially and temporally) with that value. Impacts resulting from locatable minerals would be subject to 43 CFR Subpart 3809, intended to: (1) prevent unnecessary or undue degradation of the land and reclaimed disturbed areas, and (2) provide for maximum possible coordination with State agencies to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands.

C.2.23 National Scenic and Historic Trails

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
BLM would designate a national trail management corridor (NTMC); management in that corridor would include: <ul style="list-style-type: none"> • Closing to OHV. • VRM II. • NSO Leasing. • Withdrawn from locatable. • Closed to salable. • Open to grazing. • No surface disturbing activities that are not consistent with trail values. 	<p>Activities such as ROW authorizations that cross trail segments or project development, such as wind energy, in the trail's viewshed can contribute to a decrease in overall trail quality. These actions may cause a change to the visual or historic character and possibly destroy important scientific information related to the trail.</p> <p>Direct impacts on trails that typically result from actions that disturb the soil or alter characteristics of the surrounding environment.</p> <p>Impacts on characteristics of the surrounding environment are visual elements that are out of character with, or alter, the trail settings. Impacts may also include wildfire damage, such as erosion or downed trees. Indirect impacts are actions that result in data collection and proactive preservation of trails (e.g., partnerships that encourage research or a greater understanding of the trail historic character).</p>	<p>Acres of trail corridor with this management and how it impacts trail integrity (e.g., setting, feeling, and association) or destruction of physical remnants of a trail, including ruts, swales, and associated sites, features, or artifacts, whether that loss results from erosion due to increased use, looting, or vandalism, which in turn results in a loss of archaeological information.</p>
Areas in and around the trail corridors would be managed as VRM II or III.	Audible, pollution, and visual effects can diminish the integrity of the trail's historic character.	Miles of trails directly or indirectly affected by change in the cultural landscape due to visual management on surrounding lands.
Areas immediately adjacent to the trail corridor that are open to leasable, salable, and locatable mineral development.	Noise and visual impacts from this development would impact trail integrity if seen or heard.	Miles of trails directly or indirectly affected by change in the cultural landscape due to visual or noise impacts from mineral development on surrounding lands.

Action Affecting Resource	Type of Impact	Impact Indicators
Fire and vegetation management, and grazing	Fire and vegetation management can cause short-term impacts to trail integrity due to noise and visual impacts but can also provide for long-term protection of trail integrity. Grazing can damage trail features and artifacts.	Miles of trail that would be subject to fire management and vegetation and potential impacts to long and short-term trail integrity. Miles of trails in a grazing allotment and numbers of AUMs.

Impact Analysis Area

- Direct/Indirect—National Historic Trail management corridor (NTMC; 150-feet either side of trail centerline) on BLM-administered lands in the planning area, which includes consideration of physiographic breaks and viewshed, in the planning area. Indirect effects could include side trail blockage or degradation outside the NTMC.
- Cumulative—National Historic Trail management corridor where present in the planning area.

Analysis Assumptions

- National trails and related sites are protected in accordance with federal laws, BLM regulations and policy, and interagency or partnership agreements. Specifically, BLM Manual 6280 states that the BLM may not permit proposed uses along national trails that would substantially interfere with the nature and purposes of the trail.
- The BLM will follow 36 CFR, Part 800 and Section 106 of the National Historic Preservation Act when addressing federal undertakings; therefore, adverse impacts on historic trails would be appropriately mitigated.
- Degradation of the national trail from natural processes (e.g., erosion) will continue regardless of avoidance of human-caused impacts. Natural processes are not considered impacts to trails.
- Potential impacts on historic trails and its setting from subsequent undertakings (implementation of the planning decisions or site-specific project proposals) require separate compliance with the NEPA and Section 106 of the National Historic Preservation Act.

C.2.24 Wild and Scenic Rivers

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
WSR management decision	Managing for WSR would maintain ORVs	Acres of WSR corridor (or drainage) managed for ORVs
Mineral Decisions	Surface disturbance has the potential to result in erosions and sedimentation that may affect WSR. Tailings piles associated with placer mining may affect ORVs	Qualitative discussion of impacts related to any authorized proposals introducing new pollutant effects in the WSR corridor. Acres of land within WSR corridor that would be at risk for impacts and effects on ORVs.
Wildland Fire decisions	Fire suppression tactics would cause surface disturbance and lead to impacts to ORVs. Minimum impact suppression tactics may help maintain ORVs	Acres of land within the WSR corridor that would be open/closed to standard suppression tactics and effects on ORVs.

Action Affecting Resource	Type of Impact	Impact Indicators
ROW decisions (open/avoidance/exclusions areas)	ROW authorizations on slopes near riparian zones would cause surface disturbance leading to sedimentation and impacts to ORVs.	Acres of land within the WSR corridor managed as a ROW avoidance area or subject to protective buffers and effects on ORVs.
Land tenure decisions	Acquisition or disposal of lands within a Wild River corridor could result in future impacts to ORVs. Acquisition could improve management opportunities	Acres of land within the WSR corridor that would be open to land disposal or acquisition and either managed or not managed for ORVs.
Visual resource management	Impacts to visual resources within the WSR corridor could impact ORVs.	Acres of land within the WSR corridor managed as VRM Class I or II and effects on ORVs.
Commercial timber harvest decisions	Commercial woodland harvest would impact ORVs.	Acres of land within the WSR corridor where commercial woodland harvest is permitted and effects on ORVs.
Travel decisions (open/limited/closed)	OHV use could impact ORVs	Acres of land within the WSR corridor as open/limited/closed to OHV use and effects on ORVs.

Impact Analysis Area

- Direct/Indirect—0.25-miles of either side of the ordinary high-water mark of eligible, suitable, and previously designated river segments.
- Cumulative—up to 0.5-miles of either side of the ordinary high-water mark of all eligible, suitable, and previously designated river segments in the planning area.

Analysis Assumptions

- Although management actions for most resources and resource uses have field office-wide application, WSR management prescriptions apply only to those lands in WSR corridor, as outlined.
- Permitted activities will not be allowed to impair the relevant and important values for which the WSR are designated.
- WSR designation provides protection and focused management for relevant values beyond that provided through general management of the parent resource (e.g., the scenic Wild River designation will receive greater recognition and protection than the general management action regarding scenic resources; whereas a recreation Wild River designation will offer greater protection of recreation resources and focused management).
- Special management prescribed in WSRs are included in other resource and resource use management decisions (e.g., travel restrictions in WSRs are brought forward in travel management and will be recognized during future travel management planning).

C.2.25 Wilderness and Wilderness Study Areas

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
Wilderness decisions	Areas managed for wilderness would preserve wilderness characteristics.	Acres of wilderness.
WSA decisions	Areas managed for WSAs would preserve wilderness characteristics.	Acres of WSA.

Action Affecting Resource	Type of Impact	Impact Indicators
Travel decisions: open and limited	OHV use could cause surface disturbance and lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of wilderness and WSA that are affected by these decisions.
Leasable minerals decisions: open under standard terms and conditions, moderate constraints (CSU), and major constraints (NSO)	Mineral development causes surface disturbance and may lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of wilderness and WSA that are affected by these decisions.
Mineral materials decision: open and open with special terms and conditions	Mineral development causes surface disturbance and may lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of wilderness and WSA that are affected by these decisions.
Locatable mineral Decision: Open to mineral entry; recommended or previously recommended for withdrawal	Mineral development causes surface disturbance and may lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of wilderness and WSA that are affected by these decisions.
ROW decision: open, and ROW avoidance area	Land use authorization may lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of wilderness and WSA that are affected by these decisions.
Land tenure decisions	Land retention, acquisition or disposal decision could improve or adversely affect management of natural values or primitive activities.	Acres of wilderness and WSA that are affected by these decisions.
OHV decision: open and limited.	OHV use may lead to a loss of naturalness, outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of wilderness and WSA that are affected by these decisions.
VRM decision: VRM Class II, III, and IV	VRM classification guide permitting decision that may affect wilderness characteristics	Acres of wilderness and WSA that are affected by these decisions.
Grazing decision: available	Grazing authorization may lead to a loss of naturalness or integrity of the ecosystem and native vegetation communities	Acres of wilderness and WSA that are affected by these decisions.
Timber harvest, thinning activities, and site preparation for reforestation	Harvest may lead to a loss of naturalness and native vegetation communities	Acres of wilderness and WSA that are affected by these decisions. Qualitative discussion if acres are not available.
Recreation decisions: SRMA and ERMA	Recreation permitting and casual use have potential to adversely affect naturalness or wilderness character. Management emphasis on primitive recreation settings, experiences, and uses in special recreation management areas may protect outstanding opportunities for solitude or primitive and unconfined types of recreation.	Acres of wilderness and WSA that are affected by these decisions.

Action Affecting Resource	Type of Impact	Impact Indicators
Wildland fire management	Fire management may include techniques to minimize impacts to naturalness from activities such as construction of fire roads and vegetation clearing, and to restore native vegetation communities.	Acres of wilderness and WSA that are affected by these decisions. Qualitative discussion if acres are not available.
Vegetation and wildlife	Vegetation and wildlife management decisions may include techniques to minimize impacts to naturalness, restore native vegetation communities or otherwise protect wilderness character	Acres of wilderness and WSA that are affected by these decisions. Qualitative discussion if acres are not available.

Impact Analysis Area

- Direct/Indirect—BLM-administered wilderness areas and wilderness study areas within the planning area.
- Cumulative—BLM-administered wilderness areas and wilderness study areas within the planning area

Analysis Assumptions

- Actions consistent with VRM Class II, III, and IV could potentially result in a loss of natural character.
- Potential impacts on lands managed for wilderness characteristics from subsequent undertakings (implementation of the planning decisions or site-specific project proposals) require separate compliance with NEPA.

C.2.26 Social and Economic Conditions

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
Management decisions affecting local economies and non-market economic values for communities (pull from grazing, minerals, forest products, recreation sections)	How each alternative supports the local economy and non-market economic values	<p>Economic activity indicators:</p> <ul style="list-style-type: none"> • Acres open/closed to forest products and timber harvest • Acres open for locatable and mineral materials • Acres of permitted grazing areas (or total billed and permitted AUMs) • Acres of land withdrawn to mineral entry • Acres of land in ROW exclusion • Acres open, limited, and closed for OHV travel • Acres designated as ERMA • Acres designated as SRMA • Acres identified for disposal <p>Non-market values indicators:</p> <ul style="list-style-type: none"> • Acres of land managed for wilderness characteristics • Acres of land designated as ACECs • Miles of stream within WSR corridors • Acres of known habitat for special status species • Linear miles of stream habitat subject to development, grazing, logging, and OHV and ROW crossings • Anticipated changes to recreation levels and/or use (from recreation section -to support discussion of non-market recreational values • Acres identified for fuels treatment (to support discussion of potential air and water quality impacts from wildfire)

Impact Analysis Area

- Direct/Indirect—Counties overlapping with the NCIP planning area
- Cumulative—Counties overlapping with the NCIP planning area

Analysis Assumptions

- The BLM has the potential to contribute to economic activity in the planning area through recreation, mining, for-est products, grazing, infrastructure, and BLM operations. The alternatives also could differ in terms of their provision of non-market resources (protection of wildlife and fisheries habitats, and others). These are re-sources which are valued, but not bought or sold

through markets. The effects will be described relative to existing conditions (+ - =), consistent with the other portions of the socioeconomic analysis.

- Community leaders and residents would like the BLM to be a good neighboring landowner, in addition to how re-sources and opportunities are addressed on BLM-managed lands. A key aspect of the BLM being a good neighboring landowner is how effectively the BLM coordinates and collaborates with communities and whether communities feel that their input and views are being considered by the BLM. Another aspect is the extent to which actions taken on BLM-managed lands are consistent with local and regional plans, and whether BLM management facilitates, impedes, or is neutral to achievement of community goals as stated in those plans.

C.2.27 Environmental Justice

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
Management decisions for all resources will be considered in the context of potential disproportionate adverse effects on environmental justice populations. Environmental justice populations to include geographically defined populations and non-geographically defined groups with common uses or interests (i.e. Tribes, homeless/displaced populations)	Effects on each EJ population (community group) and whether there are any disproportionate beneficial or adverse effects.	Rating of whether baseline level of indicator (No Action alternative) would stay the same, increase, or decrease under each alternative for low-income and minority populations, and whether there would be a disproportionate effect to those populations. Utilizing and referring to analysis in other resources sections.
Management decisions affecting homeless and displaced people and their use or non-use of public lands.	Impacts on homeless or displaced people and their use of public lands.	Acres designated as day use. Camping regulations/restrictions.

Impact Analysis Area

- Direct/Indirect—Counties overlapping with the NCIP planning area; will include county-level examinations of EJ communities
- Cumulative—Counties overlapping with the NCIP planning area

Analysis Assumptions

- None

C.2.28 Tribal Interests**Impacts and Indicators**

Action Affecting Resource	Type of Impact	Impact Indicators
Increased recreation opportunities and visitor use – both motorized and non-motorized use	Increased visitor use has the potential to directly impact resources important to tribes as well as displace or interrupt tribal activities within the decision area.	Increasing visitation trends and visitor use of areas where there are known, or the potential for, tribal resources and/or interest (i.e., cultural sites, plant gathering, etc.)
Ground disturbing activities, such as –wildland fire management, travel and access, etc.	Ground disturbing activities have the potential to impact natural and cultural resources that continue to be used by tribes. Impacts may include loss of access or diminished access to important resource locations as well as loss in resource integrity and/or destruction of a resource.	Qualitative description of proposed ground disturbing activities that may the potential to impact tribe interests. Discussion of plants and animals considered important to tribes and their presence within the monument. Consultation with tribes
<ul style="list-style-type: none"> Leasable, locatable and salable decisions (open). Grazing. Permitted surface disturbing activities. OHV use areas. Utility corridors. Fire and vegetation management or suppression using ground disturbing methods. Timber harvest. Reforestation and associated site preparation activities. 	<p>All of these decisions cause surface disturbances which have the potential to disturb or destroy tribal resources and disrupt tribal use. They also cause visual and noise impacts which can affect the setting and integrity of cultural sites.</p> <p>These uses can also impact tribal access to areas, or impede other resources that are significant to tribal interests.</p>	<p>Acres open and closed to these surface disturbing activities, particularly in areas with high likelihood of finding significant cultural resources (if data is available). Analysis would include a qualitative description of the impacts these respective activities can have on cultural resources.</p> <p>Acres of land associated with high-use and limited use areas and the percentage of overlap with areas identified as having tribal significance.</p>
VRM class allocations.	Visual impacts can alter character, integrity, association and feeling of prehistoric, historic, and Tribal traditional use or sacred sites.	Acres managed at VRM class IV in areas with known sensitive cultural resources or high likelihood of finding cultural resources.
Areas that have a high probability for cultural sites eligible for fuels reductions and removal of hazardous trees	Wildfires could adversely affect surface, and shallowly buried historic properties and cultural resources, or impact integrity, character, nature, feeling or use of cultural resources. Cultural resources in planning area will experience greater risk of damage or destruction by wildfire as frequency and extent of wildfires increases.	Acres with high probability of cultural sites that would have decreased risk due to fuels reduction

Action Affecting Resource	Type of Impact	Impact Indicators
Land tenure adjustment.	Retaining, acquiring or disposing of lands impacts how cultural resources are managed. Lands retained in BLM ownership provide a mandated level of protection to cultural resources that would not be provided if lands are outside of federal ownership (with the exception of transfer of lands to tribal entities for whom the cultural resources have special significance).	Acres of land with high likelihood of significant cultural or other tribal significant resources that are retained/acquired or disposed of with a qualitative analysis of these changes in land use would impact cultural resources.

Impact Analysis Area

- Direct/Indirect—NCIP decision area
- Cumulative—NCIP planning area; the cumulative analysis area may extend beyond the planning area in relation to specific impacts associated with use and access.

Analysis Assumptions

- The BLM has the responsibility to ensure that meaningful consultation and coordination concerning Tribal treaty rights and trust resources are conducted on a government-to-government basis with federally recognized Tribes. The BLM and other federal agencies have an obligation to consult with federally recognized tribes during the planning process and for all undertakings that have the potential to impact tribal resources.
- California BLM will also perform outreach and consultation with non-federally recognized tribes at an equivalent government-to-government basis.
- There are sacred sites and TCPs present in the planning area, Some locations are known to BLM; however most locations and uses are unknown to BLM and can only be identified through consultation.
- The extent of current Tribal practices and trends involving natural resource use and spiritual and religious ceremonies in the planning area is not known.
- Protecting cultural resources and certain vegetation communities, which may have special significance in Indigenous communities, across alternatives would provide protections to traditional use areas and tribally important areas and resources.
- Tribes historically used numerous places in the planning area for habitation, foraging, hunting subsistence, and spiritual and religious ceremonies. Practices that continue today include Tribal groups visiting rock art sites, burial areas, and traditional camp and ceremonial sites, as well as gathering plants and minerals for traditional use.

C.2.29 Public Health and Safety**Impacts and Indicators**

Action Affecting Resource	Type of Impact	Impact Indicators
Requirements for storage and spill prevention of hazardous materials.	Prevention measures to alleviate the uncontrolled release of hazardous materials to sensitive receptors.	Qualitative analysis of impact analysis (no unit of measure).
No hazardous materials storage within 0.25 miles the centerline of designated VWSR's.	Prevention measures to alleviate the uncontrolled release of hazardous materials to sensitive receptors.	Qualitative analysis of impact analysis (no unit of measure).
Requirements for fueling on BLM lands.	Prevention measures to alleviate the uncontrolled release of hazardous materials to sensitive receptors.	Qualitative analysis of impact analysis (no unit of measure).
All BLM permitted activities for hazardous materials would have to comply with BMP's.	Prevention measures to alleviate the uncontrolled release of hazardous materials to sensitive receptors.	Qualitative analysis of impact analysis (no unit of measure).
Operators required for cleanup associated with their activities.	Remediation of sites where most appropriately determined based on selected criteria; however, unaddressed sites or partially addressed sites would remain on a case-by-case basis.	Qualitative analysis of impact analysis (no unit of measure).
Removal and cleanup of trespass agricultural grow sites, education of adjacent agricultural operations.	Remediation of sites where most appropriately determined based on selected criteria; however, unaddressed sites or partially addressed sites would remain on a case-by-case basis.	Acres of BLM lands with adjacent agriculture that would be no longer be subject to inadvertent pesticide or herbicide contamination.
Management to control lead contamination from target shooting.	Prevention measures to alleviate the uncontrolled release of hazardous materials to sensitive receptors.	Acres of BLM lands at risk for lead contamination that would have reduced risk.
Coordinate with other agencies to address any spills.	Remediation of sites where most appropriately determined based on selected criteria; however, unaddressed sites or partially addressed sites would remain on a case-by-case basis.	Qualitative analysis of impact analysis (no unit of measure).
Identify material cleanup criteria.	Remediation of sites where most appropriately determined based on selected criteria; however, unaddressed sites or partially addressed sites would remain on a case-by-case basis.	Qualitative analysis of impact analysis (no unit of measure).
Identify measures to reduce the risk of wildland fires and enhance public health and safety during fire emergencies.	Prevention measures to reduce hazardous fuels accumulations, close or block unused two-track roads to prevent unauthorized vehicle entry, and have ROW grant holders provide vegetation control for their lease area.	Qualitative analysis of impact analysis (no unit of measure).

Action Affecting Resource	Type of Impact	Impact Indicators
Identify the locations of abandoned mine lands that have been exposed by wildland fires and measures to mitigate the associated safety hazards.	Prevention measures to gate/block mine entrances, ventilation shafts, and associated mine facilities (e.g., buildings, spoils piles, tipplers, etc.), and install warning signs about safety hazards at mine facilities.	Qualitative analysis of impact analysis (no unit of measure).
Identify caves and abandoned mines with important bat resources. Coordinate with the State of California Abandoned Mines Program as applicable to provide bat access and egress from abandoned mine facilities.	Conduct cave and abandoned mine surveys to identify new locations and map the interior where safe and prudent to do so. Conduct bat studies in caves and abandoned mines, as appropriate, to assess health and safety risks associated with bat populations. Post health and safety information at identified cave and mine locations to advise resource users of risks involved with cave and mine exploration and encounters with bats	Qualitative analysis of impact analysis (no unit of measure).

Impact Analysis Area

- Direct/Indirect—NCIP decision area
- Cumulative—NCIP decision area

Analysis Assumptions

- Cleanup levels will not be lowered or altered, and that new contaminants of concern will not be added.
- Public health and safety issues are a priority consideration in the management of public lands.
- Activities and resources available in and around the planning area would continue to be important to the health and safety of current and future residents.
- With increasing numbers of public land users and continued development of wildland urban interface areas, the likelihood of wildland fires will increase as will fire-related public health and safety concerns.
- Resource development activities identify any possible generation of hazardous waste.
- Abandoned mine sites, including those that have been exposed by recent wildland fires, present safety hazards that must be identified, characterized, and mitigated.
- All past and present hazardous materials and waste sites in the planning area have been identified and characterized.
- New hazardous materials uses and/or waste generation will be minimized within the planning area.
- The BLM coordinates with county and state emergency response agencies in response to all hazardous material releases on public surface lands and emergency cleanup actions are implemented on sites posing a substantial threat to the public health and safety and/or the environment.

C.2.30 Interpretation and Environmental Education

Impacts and Indicators

Action Affecting Resource	Type of Impact	Impact Indicators
Requirements for storage and spill prevention of hazardous materials.	Prevention measures to alleviate the uncontrolled release of hazardous materials to sensitive receptors.	Qualitative analysis of impact analysis (no unit of measure).
No hazardous materials storage within 0.25 miles the centerline of designated VWSR's.	Prevention measures to alleviate the uncontrolled release of hazardous materials to sensitive receptors.	Qualitative analysis of impact analysis (no unit of measure).
Requirements for fueling on BLM lands.	Prevention measures to alleviate the uncontrolled release of hazardous materials to sensitive receptors.	Qualitative analysis of impact analysis (no unit of measure).
All BLM permitted activities for hazardous materials would have to comply with BMP's.	Prevention measures to alleviate the uncontrolled release of hazardous materials to sensitive receptors.	Qualitative analysis of impact analysis (no unit of measure).
Operators required for cleanup associated with their activities.	Remediation of sites where most appropriately determined based on selected criteria; however, unaddressed sites or partially addressed sites would remain on a case-by-case basis.	Qualitative analysis of impact analysis (no unit of measure).
Removal and cleanup of trespass agricultural grow sites, education of adjacent agricultural operations.	Remediation of sites where most appropriately determined based on selected criteria; however, unaddressed sites or partially addressed sites would remain on a case-by-case basis.	Acres of BLM lands with adjacent agriculture that would be no longer be subject to inadvertent pesticide or herbicide contamination.
Management to control lead contamination from target shooting.	Prevention measures to alleviate the uncontrolled release of hazardous materials to sensitive receptors.	Acres of BLM lands at risk for lead contamination that would have reduced risk.
Coordinate with other agencies to address any spills.	Remediation of sites where most appropriately determined based on selected criteria; however, unaddressed sites or partially addressed sites would remain on a case-by-case basis.	Qualitative analysis of impact analysis (no unit of measure).
Identify material cleanup criteria.	Remediation of sites where most appropriately determined based on selected criteria; however, unaddressed sites or partially addressed sites would remain on a case-by-case basis.	Qualitative analysis of impact analysis (no unit of measure).

Impact Analysis Area

- Direct/Indirect—NCIP decision area
- Cumulative—NCIP decision area

Analysis Assumptions

- Cleanup levels will not be lowered or altered, and that new contaminants of concern will not be added.

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Appendix D

Affected Environment and Environmental Consequences

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TABLE OF CONTENTS

Chapter

Page

APPENDIX D. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES..... D-I

D.1	Introduction	D-1
D.1.1	Direct and Indirect Impacts.....	D-2
D.1.2	Cumulative Impacts.....	D-3
D.2	Resources	D-5
D.2.1	Air Quality and Climate	D-5
D.2.2	Soils	D-35
D.2.3	Water Resources.....	D-47
D.2.4	Vegetation.....	D-61
D.2.5	Wildlife	D-114
D.2.6	Fish and Aquatic Species	D-156
D.2.7	Coastal Resources and Management	D-167
D.2.8	Wildland Fire Management.....	D-195
D.2.9	Cultural Resources.....	D-202
D.2.10	Paleontology.....	D-222
D.2.11	Visual Resources	D-243
D.2.12	Cave and Karst Resources	D-261
D.3	Resource Uses.....	D-271
D.3.1	Forestry.....	D-271
D.3.2	Land Tenure.....	D-293
D.3.3	Land Use Authorizations	D-308
D.3.4	Renewable Energy	D-319
D.3.5	Nonrenewable Energy and Minerals	D-329
D.3.6	Recreation and Visitor Services	D-336
D.3.7	Travel and Transportation Management.....	D-356
D.3.8	Livestock Grazing	D-363
D.4	Special Designations	D-372
D.4.1	Areas of Critical Environmental Concern	D-372
D.4.2	National Scenic and Historic Trails	D-435
D.4.3	Wild and Scenic Rivers.....	D-440
D.4.4	Wilderness, Wilderness Study Areas, and Lands with Wilderness Characteristics.....	D-456
D.5	Social and Economic.....	D-475
D.5.1	Social and Economic Conditions.....	D-475
D.5.2	Environmental Justice.....	D-496
D.5.3	Tribal Interests	D-505
D.5.4	Public Health and Safety	D-517
D.6	Support.....	D-528
D.6.1	Interpretation and Environmental Education	D-528

TABLES	Page
D-1 Northern California Criteria Pollutant Emissions in Tons by Air Basin for 2017	D-8
D-2 Northern California CO ₂ e Emissions in 2017 by Air Basin (in MMT)	D-14
D-3 California CO ₂ e Emissions Inventory (in MMT).....	D-14
D-4 Projected Air Temperature Increases Over Various Time Periods across Northern California.....	D-15
D-5 Projected Precipitation Changes Over Various Time Periods within the NCIP Planning Area	D-16
D-6 Special Designations by Alternative	D-26
D-7 Vegetation Cover Types	D-62
D-8 Special Status Plants Known from BLM-Administered Lands	D-76
D-9 Botanical Areas of Critical Environmental Concern	D-79
D-10 Vulnerable Plant Communities	D-80
D-11 Vegetation Cover Types in ROW Allocations by Alternative.....	D-88
D-12 Vegetation Cover Types Open to Locatable Minerals by Alternative.....	D-89
D-13 Vegetation Cover Types Open to Mineral Materials by Alternative	D-90
D-14 Vegetation Cover Types in OHV Designations by Alternative	D-93
D-15 Vegetation Cover Types in Grazing Allotments by Alternative.....	D-94
D-16 Vegetation Cover Types in ACECs by Alternative	D-95
D-17 Rare Plants and Vulnerable Communities in ACECs by Alternative.....	D-96
D-18 Riparian Management Areas in ROW Allocations by Action Alternative	D-103
D-19 Riparian Management Areas Open to Locatable and Mineral Materials Development.....	D-104
D-20 Riparian Management Areas in Travel Management Allocations by Action Alternative	D-104
D-21 Riparian Management Areas in Grazing Allotments by Action Alternative.....	D-105
D-22 Riparian Management Areas in ACECs by Action Alternative (acres and percent).....	D-105
D-23 Vegetation Cover Types in Riparian Management Areas by Action Alternative	D-106
D-24 Rare Plants and Vulnerable Communities in Riparian Management Areas by Action Alternative	D-107
D-25 Vegetation Cover Types, CWHR Habitat Classifications, Wildlife Species Crosswalk	D-115
D-26 Big Game Habitats	D-122
D-27 Big Game Trends in the NCIP Planning Area	D-122
D-28 Federal and State ESA-Listed Species and BLM Sensitive Species within the Planning Area	D-124
D-29 Population and Habitat Trends for Federally Listed, State-Listed, and BLM Sensitive Wildlife Occurring in the NCIP	D-126
D-30 Wildlife Habitats within Recreation Management Areas (acres)	D-131
D-31 Wildlife Habitats Open/Closed to OHVs (acres)	D-132
D-32 Wildlife Habitats Open/Closed to ROWs (acres).....	D-134
D-33 Wildlife Habitats Available/Unavailable for Livestock Grazing (acres)	D-135
D-34 Wildlife Habitats Open/Closed to Minerals Leasing (acres)	D-137
D-35 Wildlife Habitats Open/withdrawn/recommended for withdrawal to Locatable Minerals (acres).....	D-138
D-36 Wildlife Habitats Open/Closed to Mineral Materials (acres).....	D-139
D-37 Wildlife Habitats within Special Designations (acres).....	D-140
D-38 Wildlife Habitats within WSRs by Alternative (miles).....	D-141
D-39 Aquatic Irreplaceability	D-157
D-40 Lotic Systems and Fish Diversity Within the NCIP Planning Area	D-158
D-41 Reservoirs Managed by the BLM within the NCIP Planning Area	D-158
D-42 Notable Lentic Systems on BLM-Administered Lands within the NCIP Planning Area	D-159

D-43	Estimated Trends in Aquatic Habitat Condition in the Planning Area	D-161
D-44	Effects to Fish and Lotic Aquatic Habitat.....	D-164
D-45	Effects to Lentic Aquatic Habitat	D-164
D-46	Impacts in Projected Aquatic Thermal Refugia'	D-167
D-47	Existing Access and Recreational Uses at Coastal Access Sites in the NCIP Planning Area	D-173
D-48	Acres of Management of OHV Travel in Coastal Resources	D-176
D-49	Acres of Coastal Resources Protected as ACECs	D-179
D-50	Acres of Land in the Coastal Strip Designated as Recreation Management Areas	D-185
D-51	Minerals Management Actions over Acres of Land in the Coastal Strip.....	D-187
D-52	Acres of Coastal Resource Land under ROW Avoidance or Exclusion.....	D-189
D-53	Acres of Coastal Resource Land under VRM Classes II and III.....	D-193
D-54	Properties Listed in the NRHP within the NCIP Planning Area	D-203
D-55	Planning and Decision Area Acreage by PFYC Class.....	D-223
D-56	Individual Collection Records of Fossils (e.g., specimens) from Museum Databases by County in the Planning Area	D-224
D-57	PFYC 3, 4, and U Geological Units Mapped on BLM-administered Lands with Types of Fossils Documented and Associated Acres.....	D-225
D-58	PFYC Class by VRM Class Under Alternative A (acres).....	D-232
D-59	PFYC Class by VRM Class Under Alternative B (acres)	D-236
D-60	PFYC Class by VRM Class Under Alternative C (acres).....	D-238
D-61	PFYC Class by VRM Class Under Alternative D (acres)	D-241
D-62	Visual Resources Inventory Summary.....	D-245
D-63	Landscape Scenery Impacts	D-247
D-64	Sensitivity Level and User Concern Impacts.....	D-247
D-65	VRM Classes compared with VRI Classes - Alternative A	D-251
D-66	VRM Classes compared with VRI Classes - Alternative B.....	D-253
D-67	VRM Classes compared with VRI Classes - Alternative C	D-256
D-68	VRM Classes compared with VRI Classes- Alternative D	D-258
D-69	Vegetation Structural Groups within the Planning Area.....	D-271
D-70	Acres at Risk for Sudden Oak Death	D-274
D-71	Forestry Projects Occurring within the Planning Area 2011–2020	D-274
D-72	Special Forest Product (SFP) Sales for the Planning Area 2016–2020.....	D-279
D-73	Stewardship Agreements in the Planning Area 2011–2020	D-280
D-74	Non-Stewardship Forestry Agreements and Partnerships in the Planning Area 2014–2020	D-281
D-75	Timber Harvest in the Planning Area in MBF 2017–2020	D-293
D-76	Surface Landownership within the Planning Area.....	D-294
D-77	Active Rights-of-Way Administered by the BLM within the Planning Area	D-309
D-78	Designation Criteria.....	D-357
D-79	Existing OHV Designations	D-358
D-80	Summary of Active and Inactive Named Grazing Allotments within the Planning Area	D-364
D-81	Existing Areas of Critical Environmental Concern.....	D-374
D-82	Potential Areas of Critical Environmental Concern.....	D-378
D-83	Mineral Management Actions for Proposed ACECs.....	D-406
D-84	Eligible and Suitable WSR Segments.....	D-443
D-85	Rivers Designated in the National Wild and Scenic Rivers System.....	D-446
D-86	Section 603 WSAs in the Decision Area	D-459
D-87	Designated Wilderness within the Decision Area.....	D-459
D-88	Wilderness Characteristics Inventory Summary.....	D-460

D-89	Population Trends (2010-2040)	D-476
D-90	Housing Tenure and Occupancy Characteristics, 2019 (Based on 5-Year Estimates)	D-477
D-91	Housing Costs as a Percentage of Household Income (2018)	D-477
D-92	Employment by Industry (2018).....	D-479
D-93	Employment by Industry – 2018 (2022 dollars)	D-481
D-94	Average Annual Percent Unemployment (2000–2020).....	D-482
D-95	Planning Area PILT (Fiscal Year 2020).....	D-482
D-96	Livestock Inventory and AUMs	D-483
D-97	Estimates of the Economic Value of Recreation-related Benefits (use value) by Primary Activity for the Forest Service Pacific Southwest Region (per person per primary activity day)	D-486
D-98	Economic Contributions to the State Economy by Resource in the Arcata Field Office (2021)	D-489
D-99	Economic Contributions to the State Economy by Resource in the Redding Field Office (2021).....	D-489
D-100	Census Tracts with Environmental Justice Population within Each County in the Planning Area (2021).....	D-497
D-101	Point-in-Time Homeless Populations in Planning Area Counties (2015–2019)	D-499
D-102	Federally Recognized Tribes and Tribal Entities with Traditional Resources and Uses in the Planning Area.....	D-506

FIGURES

Page

D-1	Mean High Temperatures across the NCIP Planning Area (1981–2010).....	D-11
D-2	Mean Low Temperatures across the NCIP Planning Area (1981– 2010	D-11
D-3	Average Monthly Precipitation across the NCIP Planning Area (1981– 2010; data from usclimatedata.com)	D-12
D-4	Riparian Management Area Widths for Streams	D-75
D-5	VRI Classes and VRM Classes.....	D-246

Appendix D. Affected Environment and Environmental Consequences

D.1 INTRODUCTION

This chapter describes the baseline environmental conditions (affected environment) for the resources that the RMP is likely to affect, and the environmental consequences of the alternatives being evaluated in this RMP/EIS. Though these two aspects are often in separate chapters in an EIS, they are combined here to facilitate continuity for the reader from baseline conditions to potential impacts on each resource. Following the description of baseline conditions, the discussion of potential direct, indirect, and cumulative impacts from proposed management actions under each resource provides the scientific and analytic basis for evaluating the potential impacts of each of the alternatives described in **Appendix B**. The approach to impact analysis for each resource is discussed further in **Appendix C**. In 2021, as part of the planning process, the BLM released the Analysis of the Management Situation (AMS), which describes the baseline conditions in the planning area (BLM 2021a). Because the AMS describes the planning area in detail, this chapter incorporates the AMS by reference, and it includes new data or information obtained since the AMS was finalized. Each resource section also includes particular questions about how the alternatives would affect the resource; the BLM refers to these questions as “Issues”.

For organizational purposes, this chapter is divided into sections by subject area (such as water resources, wildlife, and recreation) from the land use planning handbook, BLM Handbook H-1601-1. Though they are described and analyzed in discrete sections, these subjects are dynamic and interrelated. A change in one resource can have cascading or synergistic impacts on other resources. For example, erosion affects water quality, which in turn affects fish populations, which could have implications on other human outcomes, such as health and sociocultural systems. As a result, there is some overlap among the resource sections, and the impacts described in one section may depend on the analysis from another section.

The discussion of potential impacts under each resource provides the scientific and analytic basis for evaluating the potential impacts of each alternative described in **Appendix B**. These plan-level decisions establish allocations that identify the uses that are allowed, restricted, or prohibited on the BLM-administered lands and federal mineral estates. Due to the programmatic nature of the RMP alternatives, the timing and specific location of project-specific actions that could impact resource values are not defined. Additionally, the relationship between cause (future actions) and effect (impact on resources) is not always known or quantifiable. For these reasons, the analysis of alternatives contained in the sections below is both qualitative and quantitative. Impact analyses and conclusions are based on interdisciplinary team knowledge of the resources and the planning area, information provided by experts in the BLM, monitoring data and information contained in pertinent literature, and professional judgment.

The BLM manages public lands for multiple uses and sustained yield in accordance with FLPMA. The BLM makes land use decisions to protect the resources while allowing for different uses of those resources, such as energy and mineral development, timber harvest, recreation, and livestock grazing. When there are conflicts among resource uses or when a land use activity could result in unacceptable or irreversible impacts on the environment, the BLM may restrict or prohibit some land uses in specific areas. To ensure the BLM meets its multiple-use and sustained yield mandate in land management actions, the alternatives’

impacts on resource uses are identified and assessed as part of the planning process. The projected impacts on land use activities and the environmental impacts of land uses are characterized and evaluated for each alternative.

Some resources include sections that discuss impacts that would be common across all alternatives, including the No Action alternative. Additionally, some resources include a section that discusses impacts common across all action alternatives. Impacts discussed under these headings imply that regardless of management action, the effects on the particular resource would be the same.

Impacts for some resources or resource uses, such as recreation, could be confined to the BLM-administered surface estate. Other impacts, such as energy and minerals and requirements to protect special status species and cultural resources from such activity, could apply to all BLM-administered federal mineral estates (including split-estate). Some BLM management actions may affect only certain resources under certain alternatives.

This impact analysis identifies impacts that may enhance or improve a resource as a result of management actions, as well as those impacts that have the potential to impair a resource. However, the evaluations are confined to the actions that have direct, immediate, and more prominent effects. If an activity or action is not addressed in a given section, no impacts are expected. In some instances, varying levels of management from different resource programs overlap. In such instances, the stricter of the management prescriptions would apply. If such prescriptions were not accepted, then the less strict management would prevail. **Appendix F, Best Management Practices**, contains standard operating procedures that could be implemented under all the action alternatives.

The methodology for the impact assessment conforms to the guidance found in the following sections of the CEQ regulations for implementing NEPA: 40 CFR 1502.23 (Methodology and Scientific Accuracy), 40 CFR 1502.16 (Environmental Consequences) and cumulative impacts as defined in 40 CFR 1508.1.

D.1.1 Direct and Indirect Impacts

Direct and indirect impacts are considered in the analysis contained in this appendix and summarized in **Chapter 3**:

Direct Effects—Effects that are caused by the proposed action and occur at the same time and place. Examples of direct effects are closing roads within decomposed granite zones during the rainy season.

Indirect Effects—Effects that are caused by the proposed action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects “may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems”. Indirect effects are caused by the proposed action, but they do not occur at the same time or place as the direct effects.

Potential effects are quantified where possible using GIS and other applications; in the absence of quantitative data, best professional judgment prevailed. Impacts are sometimes described using ranges of

potential impacts or in qualitative terms. The standard definitions for terms used in the analysis are as follows, unless otherwise stated:

Potentially Affected Environment—Describes the area or location (site-specific, local, planning area-wide, or regional) in which the potential impact would occur. Site-specific impacts would occur at the location of the action; local impacts would occur in the decision area; planning area-wide impacts would affect most or all of the planning area; and regional impacts would extend beyond the planning area boundaries.

Duration—Describes the length of time an effect would occur, either short-term or long-term. The temporal scale of effects is defined for each resource in **Appendix C (Section C.4)**.

Degree—Impacts are discussed using quantitative data where possible.

During the writing process, resource specialists shared data and discussed interrelated aspects of the analyses to better capture the interrelated nature of environmental resources. The indicators, analysis areas, and assumptions used for each resource analysis are found in **Appendix C, Approach to the Environmental Analysis**. The impact analyses for direct, indirect, and cumulative impacts for all resources are detailed in the sections below.

D.1.2 Cumulative Impacts

The cumulative impact analysis considers impacts of a proposed action and its alternatives that may not be consequential when considered individually; however, when they are combined with impacts of other actions, they may be consequential.

The purpose of the cumulative impacts analysis is to determine if the impacts of the actions considered in this EIS, together with other past, present, and reasonably foreseeable future actions, could interact or accumulate over time and space, either through repetition or combined with other impacts, and under what circumstances and to what degree they might accumulate.

The method used for cumulative impacts analysis in the NCIP consists of the following steps:

- Identify issues, characteristics, and trends in the affected environment that are relevant to assessing cumulative effects of the action alternatives. This includes discussions on lingering effects from past activities that demonstrate how they have contributed to the baseline condition for each resource.
- Define the spatial (geographic) and temporal (time) frame for the analysis. This timeframe may vary between resources depending on the historical data available and the relevance of past events to the current baseline.
- Identify past, present, and reasonably foreseeable future actions (RFFAs) from human activities that could have additive or synergistic effects. Summarize past and present actions within the defined temporal and spatial time frames, and identify any RFFAs that could have additive, countervailing, or synergistic effects on identified resources.
- Use a specific method to screen all of the direct and indirect effects, when combined with the effects of external actions, to capture those synergistic and incremental effects that are potentially cumulative in nature. Both adverse and beneficial effects of external factors are assessed and then

evaluated in combination with the direct and indirect effects for each alternative on the various resources to determine if there are cumulative effects.

- Evaluate the impact of the potential cumulative effects and assess the relative contribution of the action alternatives to cumulative effects.
- Discuss rationale for determining the impact rating, citing evidence from the peer-reviewed literature, and quantitative information where available. When confronted with incomplete or unavailable information, ensure compliance with 40 CFR 1502.22.

The analysis also considers the interaction among the impacts of the alternatives with the impacts of various past, present, and RFFAs, as follows:

- Additive—the impacts of actions add together to make up the cumulative impact
- Countervailing—the impacts balance or mitigate the impacts of other actions
- Synergistic—the impact of the actions together is greater than the sum of their individual impacts

In the NCIP, both the temporal and geographic scope of the cumulative impact analysis could vary according to the resource under consideration. Generally, the appropriate timeframe for cumulative impacts analysis spans from the 1990s through the life of the plan. Climate change may require a larger temporal scale to see measurable changes. The geographic scope generally encompasses the planning area but could extend beyond for some resources (e.g., air resources).

Past, Present, and Reasonably Foreseeable Future Actions

Relevant past and present actions are those that have influenced the current condition of the resource. For the purposes of this RMP/EIS, past and present actions are human-controlled events. Past actions were identified using agency documentation, NEPA analyses, reports and resource studies, peer-reviewed literature, and best professional judgment.

The term reasonably foreseeable future action (RFFA) is used in concert with the CEQ definitions of indirect and cumulative effects, but the term itself is not defined further. Most regulations that refer to “reasonably foreseeable” do not define the meaning of the words, but do provide guidance on the term. Typically, RFFAs are based on such documents as plans, permit applications, and fiscal appropriations. RFFAs considered in the cumulative effects analysis consist of projects, actions, or developments that can be projected, with a reasonable degree of confidence, to occur over the life of the plan.

Recent environmental reports, surveys, research plans, NEPA compliance documents, and other source documents were evaluated to identify these actions. Reasonably foreseeable future actions were assessed to determine if they were speculative and would occur within the analytical timeframe of the NCIP. Projects and activities considered in the cumulative effects analysis are summarized in **Table C-1** in **Appendix C**.

Actions Not Included in the Cumulative Analysis

The cumulative analysis must consider past, current and RFFAs in the analysis. Reasonably foreseeable future actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends (BLM NEPA Handbook 1790-1, page 59). Any actions that fall outside the past, present or reasonably foreseeable category are speculative and are not evaluated as part of the cumulative impacts analysis.

D.2 RESOURCES

D.2.1 Air Quality and Climate

Issue Statements

- How would the alternatives affect vulnerable resources given anticipated climate change impacts?
- How would the alternatives affect greenhouse gas emission reduction and carbon sequestration to help meet local, state, regional, or federal climate change-related goals?

Affected Environment

Air Quality

Air quality includes air quality management, interagency coordination, smoke abatement for prescribed fire, and air quality impact assessment. The BLM is responsible for considering and incorporating air quality into multiple-use programs; managing the public lands in a manner that will protect air quality; and complying with applicable laws, statutes, regulations, standards, and implementation plans. Air pollutants addressed in this document include criteria air pollutants, hazardous air pollutants (HAP), fugitive dust, and sulfur and nitrogen compounds, which could contribute to visibility impairment and atmospheric deposition. The air quality analysis area includes the planning area airshed within the Redding and Arcata FOs, which include: Del Norte, Siskiyou, Humboldt, Mendocino, Tehama, Trinity, Shasta, and Butte Counties.

The following lists the air quality affected environment topics discussed below:

- The national and state air quality standards for criteria air pollutants and the associated designations classified by the ambient air quality in that region.
- Discussion of non-criteria air pollutants
- Current air quality conditions
- Air quality trends
- Air quality future forecast

The following indicators are used to measure current condition and trends:

- National Ambient Air Quality Standards (NAAQS)
- The State of California Ambient Air Quality Standards (CAAQS)
- Prevention of Significant Deterioration of Air Quality (PSD) program of the Clean Air Act

The federal Clean Air Act (CAA), which was passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The CAA delegates primary responsibility for clean air to the Environmental Protection Agency (EPA). The EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to state and local agencies. Under the CAA, the EPA has established the NAAQS for six criteria air pollutants that are pervasive in urban environments and for which state and national health based ambient air quality standards have been established. Concentrations of air pollutants greater than the primary NAAQS represent a risk to human health, while concentrations above the secondary NAAQS represent a risk to public welfare or the environment. Federal criteria are set for six common air pollutants often referred to as criteria pollutants, which include: carbon monoxide, lead, sulfur dioxide, particulate matter smaller than 10 and 2.5 microns (PM₁₀ and PM_{2.5}, respectively),

ozone, and nitrogen dioxide. The California Air Resources Board (CARB) has set additional regulations focusing on motor vehicle pollution and ambient air quality beyond the NAAQS, including standards for hydrogen sulfide, vinyl chloride, and visibility reducing particles. The PSD program of the CAA ensures that air quality in areas meeting the NAAQS does not significantly deteriorate, while maintaining an allowable margin for future industrial growth. Under the PSD program, each area in the US is classified by the ambient air quality in that region according to the following system:

- **PSD Class I Areas:** Areas for which pristine air quality is desirable (such as national parks, wilderness areas, and Native American Indian reservations) are accorded the strictest protection from air quality degradation. Only very small incremental increases in pollutant concentrations are allowed in order to maintain superior air quality in these areas. It is important to note that the BLM wilderness areas, all created after the establishment of Class I areas, do not fall under this category, with one exception. The only case where the BLM Class I wilderness area occurs is when the BLM-administered land was added to the Yolla Bolly-Middle Eel wilderness subsequent to the determination of Class I areas (i.e., a national forest or national park wilderness) under the Clean Air Act.
- **PSD Class II Areas:** All areas that are not designated Class I are designated Class II. Moderate incremental increases in pollutant concentration are allowed, although the concentrations are not allowed to reach the concentrations set by NAAQS.
- **PSD Class III Areas:** Originally envisioned for highly industrialized areas, no areas have yet been designated Class III. Concentrations in these areas would be allowed to increase up to the NAAQS.

Federal Class I areas in the planning area are: Redwood National Park, Marble Mountain Wilderness, Lava Beds National Monument, Yolla Bolly-Middle Eel Wilderness, Thousand Lakes Wilderness, and Lassen Volcanic National Park (**Map 3-1** in **Appendix A**).

Data and scientific knowledge are periodically evaluated to revise standards at national and state levels. Criteria air pollutants are monitored in the planning area—maps of state and local air monitoring stations are available at the CARB website (CARB 2023). Local air districts are established as regional regulatory agencies with responsibilities for controlling air pollution from stationary sources. These districts, among other things, coordinate prescribed burning activities to aid in minimizing adverse impacts on communities.

Toxic air contaminants (TAC) refer to a diverse group of “non-criteria” air pollutants that can affect human health, but they do not have ambient air quality standards established for them. This is not because they are fundamentally different from the pollutants discussed above, but because their effects tend to be local rather than regional. TACs are identified by federal and state agencies and in the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics “Hot Spots” Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or other acute (short-term) or chronic (long-term) health problems. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA). Examples of TAC sources include industrial processes, dry cleaners, gasoline stations, paint

and solvent operations, and fossil fuel combustion sources. Airborne asbestos is considered a TAC and it can be found occurring naturally in many areas.

Naturally occurring asbestos areas are identified based on the type of rock found in the area. Asbestos-containing rocks found in California are ultramafic rocks, including serpentine rocks. Asbestos has been designated a TAC by the CARB and it is a known carcinogen. When this material is disturbed in connection with construction, grading, quarrying, or surface mining operations, asbestos containing dust can be generated. Exposure to asbestos can result in adverse health effects such as lung cancer, mesothelioma (cancer of the linings of the lungs and abdomen), and asbestosis (scarring of lung tissues that results in constricted breathing) (Van Gosen and Clinkenbeard 2011).

Naturally Occurring Asbestos (NOA) is prevalent in at least 44 of California's 58 counties, including counties in the air quality analysis area. Asbestos is the name for a group of naturally occurring silicate minerals. Asbestos may be found in serpentine, other ultramafic and volcanic rock. When rock containing NOA is broken or crushed, asbestos may become released and become airborne, causing a potential health hazard. Many air districts require activities to reduce asbestos dust created from earth moving activities for sites identified with soils containing asbestos (e.g., serpentine soils). Therefore, surface disturbance in the air quality analysis area could be affected by occurrences of naturally occurring asbestos and any associated regulatory guidance.

Current Condition

For each criteria pollutant, the EPA classifies areas as in “attainment” if the area is in compliance with NAAQS or as “non-attainment” if one or more NAAQS is exceeded. Air quality is good throughout the planning area, although Butte County and a portion of Tehama County are currently designated nonattainment areas for the federal 8-hour ozone NAAQS for both the 2008 and 2015 standards (EPA 2022). In 2015, the EPA tightened the previous 0.075 parts per million ozone standard to 0.070 parts per million. Therefore, Butte County and Tehama County are considered “attainment/unclassified” areas for all other pollutants. These are the only counties with nonattainment areas in the NCIP Planning Area.

Generally, poor air quality in the planning area occurs around cities and towns located in valleys. It comes from winter wood burning, particularly during temperature inversions. Motor vehicle use throughout the year, seasonal prescribed fire, and timber operations are some of the more notable pollution sources. Some pollutants in the planning area originate from the heavily populated Sacramento metropolitan area to the south and outside of the planning area. They are transported in the air northward. Exceptional events may occur throughout the planning area, most notably during wildfire events. These events contribute to the most extreme pollution periods, often lasting several weeks or more (for example, see the Northeast Plateau Air Basin in **Table D-1**).

Additionally, while logging emissions are not the same magnitude of emissions as heavy on-road traffic, residential wood burning stoves for home heating, or prescribed fires, non-road logging equipment is a common emission source that is exempt from the CARB statewide regulations for in-use, off-road, and diesel-fueled fleets. Monitoring data for other indicators are not readily available, or they are uncertain, for large portions of the NCIP. **Table D-1** summarizes criteria pollutant emissions in the planning area by air basin.

Table D-1
Northern California Criteria Pollutant Emissions in Tons by Air Basin for 2017

North Coast Air Basin							
Del Norte, Humboldt, Mendocino, and Trinity Counties							
Category	CO	NO_x	PM₁₀	PM_{2.5}	SO₂	VOCs	HAPs
Agriculture	0	0	456	15	0	309	7
Biogenics ¹	38,317	1,561	0	0	0	218,048	0
Dust	0	0	4,816	171	0	0	0
Fires	18,478	4	25	754	0	635	1,580
Fuel combustion	628	306	484	440	87	65	29
Industrial processes	109	6	64	57	2	63	3
Miscellaneous ²	0	0	14	70	0	40	268
Mobile	789	1,291	151	13	4	128	252
Waste disposal	547	0	160	115	6	573	41
Total	58,868	3,168	6,171	1,634	99	219,861	2,251

Northeast Plateau Air Basin							
Siskiyou County							
Category	CO	NO_x	PM₁₀	PM_{2.5}	SO₂	VOCs	HAPs
Agriculture	0	0	1	147	0	0	0
Biogenics ¹	14,089	1,118	0	0	0	105,013	0
Dust	0	0	4,169	404	0	0	0
Fires	1,398,741	13,501	0	0	158	170	10,699
Fuel combustion	1,567	8	1	0	28	29	64,327
Industrial processes	0	0	0	9	0	0	1
Miscellaneous ²	0	0	0	12	0	24	85
Mobile	1,691	490	11	26	0	6	79
Waste disposal	0	0	451	431	17	0	32
Total	1,416,089	15,118	4,634	1,029	204	105,242	75,225

Sacramento Valley Air Basin							
Butte, Shasta, and Tehama Counties							
Category	CO	NO_x	PM₁₀	PM_{2.5}	SO₂	VOCs	HAPs
Agriculture	0	0	861	0	0	312	1
Biogenics ¹	15,248	1,767	0	0	0	135,552	0
Dust	0	0	922	249	0	0	0
Fires	2,190	0	2,195	0	0	4,902	290
Fuel combustion	16	79	219	992	33	1,416	36
Industrial processes	1	603	334	33	8	120	7
Miscellaneous ²	92	0	36	55	0	154	195
Mobile	7,295	7,554	61	40	1	6	286
Waste disposal	0	0	0	0	0	206	159
Total	24,842	10,003	4,627	1,368	42	142,669	974

Source: EPA 2019

Note: Totals may not add up exactly as shown due to rounding.

¹ Biogenic emissions are those derived from natural processes, such as vegetation and soil.² Miscellaneous categories include bulk gasoline terminals, commercial cooking, gas stations, miscellaneous non-industrial (not elsewhere classified), and solvent use.CO=carbon monoxide, NO_x=nitrogen oxides, PM₁₀=particulate matter 10 micrometers or less in diameter, PM_{2.5}=particulate matter 2.5 micrometers or less in diameter, SO₂=sulfur dioxide, VOC=volatile organic compounds, HAPs=hazardous air pollutants

Trends

Historical trends for ambient concentrations of criteria air pollutants within the planning area show no significant deterioration over the last 20 years; however, wildfires have contributed to periods of very poor air quality with PM₁₀ and PM_{2.5} levels well above the 24-hour standard of 5 micrograms per cubic meter (µg/m³).

PM₁₀, and PM_{2.5} emissions due to wildfires have all been shown to have an increasing trend in California, according to data from 2000 to 2019, following the similarly increasing trend of annual wildfire burn acreage (CARB 2020a).

Prescribed burning is used to possibly prevent wildfire ignition, spread, and or severity. They are managed and controlled to prevent damage to the environment, and they are heavily managed in an attempt to minimize poor air quality conditions.

According to NPS data for Class I areas in the planning area, visibility trends recorded in Lassen Volcanic National Park, Lava Beds National Monument, and Redwood National Park remained relatively unchanged from 2009 to 2018 (the 10-year trend shows no statistically significant trend on the 20 percent clearest days and 20 percent haziest days). Visibility at all three areas is currently classified as “fair,” with the 5-year average (2014–2018) measured visibility, or haze index, on mid-range days of 6.4 deciviews (dv) at Lassen Volcanic National Park, 6.5 dv at Lava Beds National Monument, and 11.1 dv at Redwood National Park. These haze indices are 2.7 to 3.5 dv above the estimated natural conditions. Nitrogen deposition trend data are available only for Lassen Volcanic National Park, where the trend remained relatively unchanged from 2009 to 2018 (USDI NPS 2020).

Forecast

Generally, good air quality is expected to continue within the planning area. Federal and state emission regulations continue to tighten emission limits, thereby reducing emissions from many existing sources. For some pollutants, particularly nitrogen dioxide, total emissions in the planning area could potentially decrease from current levels if current population and industrial activity remain stable or increase minimally. Compliance attainment levels for the NAAQS and California Ambient Air Quality Standards are expected to continue. The EPA continually reviews the NAAQS and sets more stringent ambient standards over time for some pollutants. The Exceptional Event Rule, which could classify smoke from wildland vegetation burning, is also being reviewed with a probable alteration to include some form of pollution associated with prescribed burning and wildfire fire events managed for resource benefits.

On January 6, 2023, the EPA announced a proposal to strengthen the PM_{2.5} standard to better protect human health and the environment. EPA has now reduced the current standard from 12 µg/m³ to a 9 µg/m³, to reflect the latest health data and scientific evidence to better protect communities.

Key Features

The BLM must continue to work with CARB, local air districts, and cooperators during activities that may degrade air quality, such as construction, road decommissioning, prescribed fire, and during special events and incidents such as wildfire suppression.

Climate and Greenhouse Gases

The following climate and greenhouse gases topics are discussed below:

- Discussion of climate change and GHG pollutants
- Climate in the planning area
- Climate change (temperature shifts, storm frequency and intensity, and sea level rise) trends and future forecast

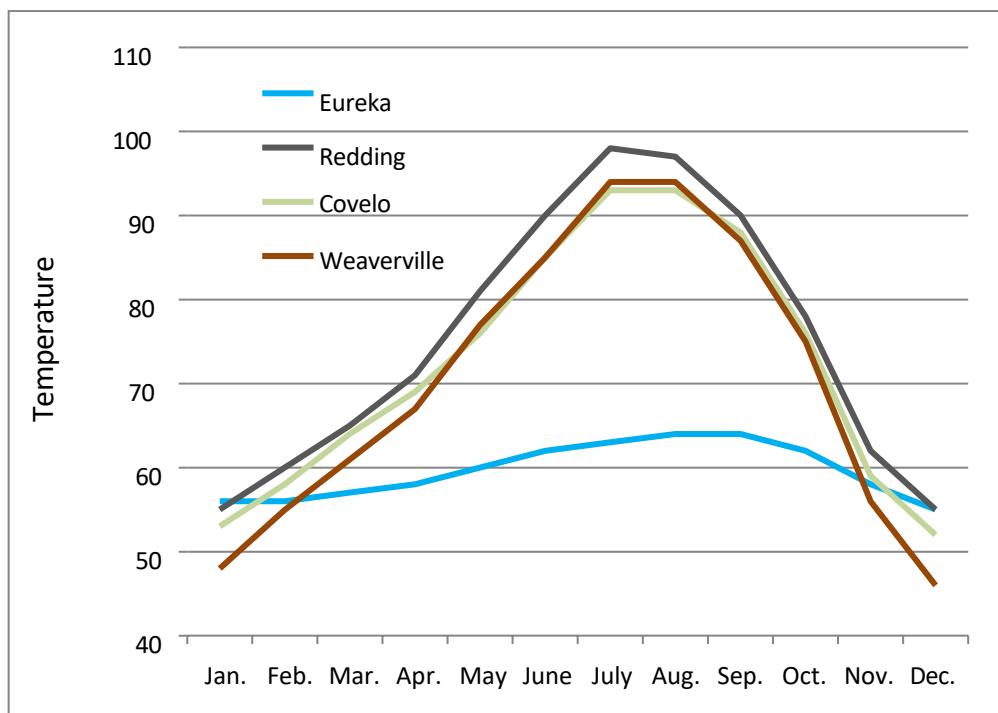
Global climate change refers to the changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation, and storms. Global warming, a related concept, is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. There is a general scientific consensus that global climate change is occurring, caused in whole or in part by increased emissions of GHGs that keep the Earth's surface warm by trapping heat in the Earth's atmosphere, in much the same way as glass traps heat in a greenhouse. The Earth's climate is changing because human activities, primarily the combustion of fossil fuels, are altering the chemical composition of the atmosphere through the buildup of GHGs. GHGs are released by the combustion of fossil fuels, land clearing, agriculture, and other activities, and they lead to an increase in the greenhouse effect. While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy.

GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Carbon dioxide is the most abundant GHG. Other GHGs are less abundant, but they have higher global warming potential than CO₂. Thus, emissions from other GHGs are frequently expressed in the equivalent mass of CO₂, denoted as CO₂e. Wildfires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions.

The planning area is characterized by a Mediterranean climate with warm, dry summers and cool, wet winters (**Figure D-1**, **Figure D-2**, and **Figure D-3**). Rain dominates precipitation in the planning area. However, higher-elevation areas have a winter snowpack that is important in sustaining stream flows in the dry season. The snow-dominated areas, mostly outside of the BLM-administered lands, also support vegetation communities not seen in the more rain-dominated systems. **Map 3-1** in **Appendix A** includes air basins, which are geographical divisions the state uses to manage air resources, that are included in the planning area.

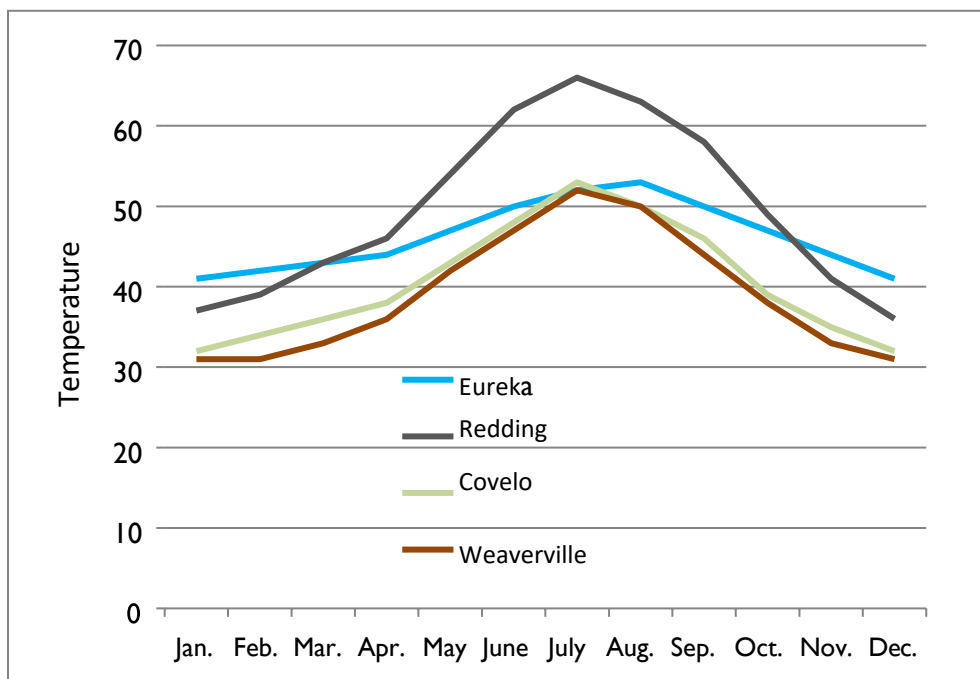
Along the coast, the maritime climate promotes milder temperatures with cooler summer high temperatures and warmer winter minimum temperatures compared with inland areas. Coastal fog is common throughout the year, but it is especially prevalent in summer. Coastal vegetation communities reflect this cooler, wetter setting.

Figure D-1
Mean High Temperatures across the NCIP Planning Area (1981–2010)



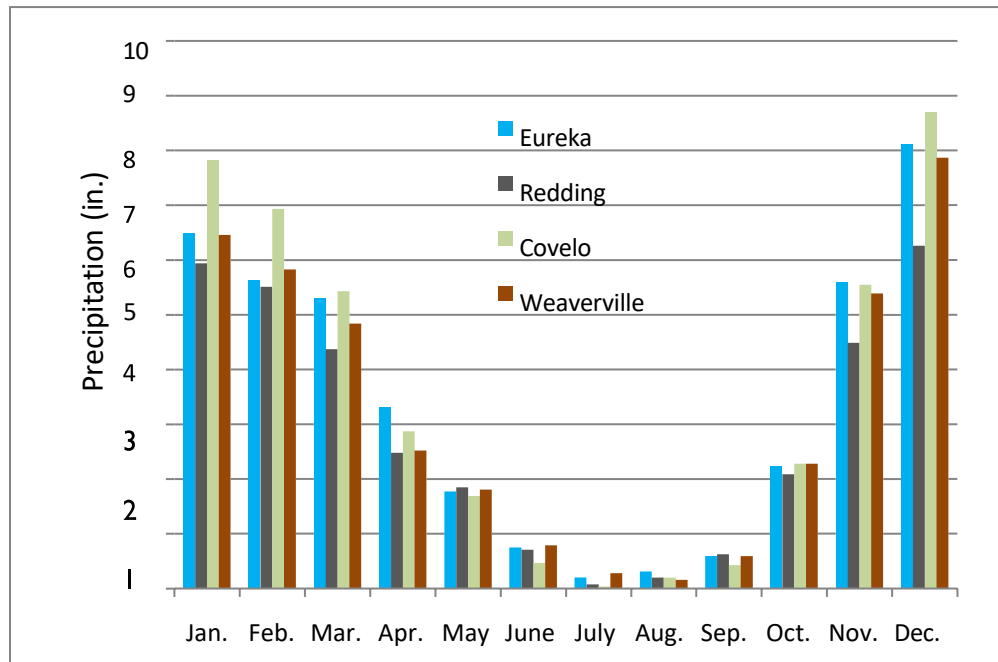
Source: US Climate Data 2023

Figure D-2
Mean Low Temperatures across the NCIP Planning Area (1981–2010)



Source: US Climate Data 2023

Figure D-3
Average Monthly Precipitation across the NCIP Planning Area (1981– 2010; data from usclimatedata.com)



Source: US Climate Data 2023

Climate change has and will continue to affect the BLM-administered lands within the planning area. While projected changes in temperature, precipitation, and sea level rise differ based on modeling assumptions, each of these climate components is expected to change during the implementation of the NCIP. By accounting for the potential effects of climate change during the planning process, the BLM can make management decisions that reflect anticipated impacts on vulnerable resources and, therefore, assure with higher probability that the BLM can be attaining its stated planning goals.

Changes in temperature, precipitation, and other climate variables that persist for decades or longer are referred to as climate change (IPCC 2014). The Intergovernmental Panel on Climate Change (IPCC; 2021) has concluded that it is unequivocal that human influence has warmed the atmosphere, ocean, and land and that human activities have caused GHG concentrations to increase since the mid-eighteenth century. The increase in well-mixed GHG concentrations has caused widespread changes in the Earth's climate systems. These include, but are not limited to, successively warmer global surface temperature and increasing global average precipitation.

Evidence of observed changes in extremes, such as heat waves, heavy precipitation, droughts, and tropical cyclones, and, in particular, their attribution to human influence, has strengthened since the IPCC Fifth Assessment Report (IPCC 2014). The IPCC (2021) estimates that the likely range of the human-caused increase in global surface temperature between 1850-1900 and 2010-2019 was 0.8 to 1.3 °C. The increase in well-mixed GHG concentrations was likely accountable for 1.0 to 2.0°C of the increase in global surface temperature, while other human drivers contributed a cooling of 0.0 to 0.8°C (IPCC 2021). Natural drivers and internal variability changed the global surface temperature by -0.1 to +0.1°C and -0.2 to +0.2°C, respectively (IPCC 2021). Human-induced climate change has also increased the global average

precipitation over land area since the mid-twentieth century and it has shifted the mid-latitude storm tracks poleward in both hemispheres. Under scenarios with increasing CO₂ emissions, the ocean and land carbon sinks are projected to be less effective at slowing the accumulation of CO₂ in the atmosphere (IPCC 2021).

Current Greenhouse Gas Emissions

The major sources of GHG emissions in Northern California are power plants, industrial processes, wildfires, and waste disposal (EPA 2020). In 2017, carbon dioxide (CO₂) emissions from fossil fuel consumption in California were 115.9 million metric tons, or 7.8 percent of the total US emissions. More than half of the state's energy-related CO₂ emissions were from the electric power sector (US Energy Information Administration [EIA] 2020). Emissions from GHGs in the planning area in 2017 are provided in **Table D-2**. The data are not a full representation of GHG emissions in each basin; rather, they are a representation of the emissions in the relevant counties for the planning area in each basin.

Greenhouse gas emissions may differ greatly from year to year and from region to region within a year because of the occurrence of wildfires within and outside the planning area. The other categories of emissions likely vary little from year to year because they come from ongoing human activities. Apart from wildfire emissions, the GHG production in the Northeast Plateau Air Basin is very low.

According to California's 2000–2019 GHG emissions inventory, California emitted 409.3 million metric tons (MMT) CO₂e in 2019 (CARB 2021). The sources of California's GHG emissions include transportation, industrial uses, electric power production commercial and residential uses, agriculture, high global-warming potential substances, and recycling and waste. The California GHG emission source categories (as defined in CARB's 2008 Scoping Plan) and their relative contributions in 2019 are presented in **Table D-3**. Total GHG emissions in 2019 were approximately 22.9 MMT CO₂e less than 2016 emissions. Based on data presented, the 2016 statewide GHG inventory fell below 1990 levels, consistent with AB 32. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California will continue to reduce emissions below the 2020 target of 431 MT CO₂e (CARB 2022).

As discussed above, emissions due to wildfires have all been shown to have an increasing trend in California, which includes CO₂ emissions, according to data from 2000 to 2019, following the similarly increasing trend of annual wildfire burn acreage (CARB 2020a). Prescribed fire emissions in the 2000–2019 period range from 0.16 million metric tons (MMT) CO₂ in 2016 to 1.9 MMT CO₂ in 2006, with a statewide annual average of 0.68 MMT CO₂. The California Department of Forestry and Fire Protection (CAL FIRE) estimates that 4.2 million acres were burned in 2020. Using the preliminary wildfire perimeter data available from the National Interagency Fire Center, CARB staff calculated 2020 wildfire emissions at 106.7 million metric tons of CO₂. (CARB 2021b).

Prescribed fires are used to reduce the risk of catastrophic wildfire and make it easier to manage wildfires that do start. They are managed and controlled to prevent damage to the environment, lessen impacts of wildfire, and measures are imposed to limit impacts on air quality.

Table D-2
Northern California CO₂e Emissions in 2017 by Air Basin (in MMT)

Category	North Coast Air Basin Del Norte, Humboldt, Mendocino, and Trinity Counties	Northeast Plateau Air Basin Siskiyou County	Sacramento Valley Air Basin Butte, Shasta, and Tehama Counties
Fires	84,687 (9.1%)	13,413,937 (94.2%)	9,825 (0.6%)
Fuel combustion	223,437 (24.1%)	0 (0%)	0 (0%)
Industrial processes	0 (0%)	32,832 (0.2%)	496,553 (28.2%)
Miscellaneous ¹	0 (0%)	0 (0%)	0 (0%)
Mobile ²	531,600 (57.4%)	787,401 (5.5%)	1,147,246 (65.1%)
Waste disposal	86,971 (9.4%)	18 (<0.001%)	108,912 (6.2%)
Total	926,695	14,234,187	1,762,536

Source: EPA 2019; EPA 2020

Note: Totals may not add up exactly as shown due to rounding. Carbon dioxide equivalent (CO₂e) is in tons and assumes an EPA-recommended 100-year global warming potential of 25 for methane (CH₄) and 298 for nitrous oxide (N₂O) from the Intergovernmental Panel on Climate Change Fourth Assessment Report (IPCC 2007). Converted from tons to MMT.

¹ Miscellaneous categories include bulk gasoline terminals, commercial cooking, gas stations, miscellaneous non-industrial (not elsewhere classified), and solvent use.

² The mobile category includes both on-road vehicles and non-road sources that use gasoline, diesel, and other fuels. The fuel combustion category includes industrial, commercial, and institutional fuel combustion sources and include emissions from boilers, engines, and other combustion sources from the industrial, commercial, and institutional sectors that are not reported as point sources. This source category includes emissions from combustion of coal, distillate fuel oil, residual fuel oil, kerosene, liquefied petroleum gas (LPG), natural gas, and wood.

Table D-3
California CO₂e Emissions Inventory (in MMT)

Parameter	Unit	Year				
		2015	2016	2017	2018	2019
Transportation	MMT CO ₂ e	166.2	169.8	171.2	169.6	166.1
	Percentage	38.5%	40.4%	41.2%	40.7%	40.6%
Electric power	MMT CO ₂ e	84.8	68.6	62.1	63.1	58.8
	Percentage	19.6%	16.3%	14.9%	15.2%	14.4%
Industrial	MMT CO ₂ e	90.3	89	88.8	89.2	88.2
	Percentage	20.9%	21.2%	21.4%	21.4%	21.5%
Commercial and residential	MMT CO ₂ e	38.8	40.6	41.3	41.4	43.8
	Percentage	9.0%	9.7%	9.9%	9.9%	10.7%
Agriculture	MMT CO ₂ e	33.5	33.3	32.5	32.7	31.8
	Percentage	7.8%	7.9%	7.8%	7.9%	7.8%
High global warming potential (GWP)	MMT CO ₂ e	18.6	19.2	20	20.4	20.6
	Percentage	4.3%	4.6%	4.8%	4.9%	5.0%
Total net emissions	MMT CO ₂ e	432.2	420.5	415.9	416.4	409.3

Source: CARB 2021

Temperature Shifts as Climate Changes

Climate data indicate increasing minimum air temperatures across Northern California, which includes the planning area (**Table D-4**) (LaDochy et al. 2007). Generally, increasing temperature is expected to promote a more rain-dominated hydrology, with a reduction in both the spatial and temporal extent of seasonal snowpack. As this snowmelt water supply is reduced, ecosystem changes may occur in ecosystems currently adapted to the water provided by spring and summer snowmelt.

Table D-4
Projected Air Temperature Increases Over Various Time Periods across Northern California

Projected Timeframe:	Annual: 8°C to 9.3°C	Summer: 17.9°C to 21.5°C	Winter: 0.08°C to -0.46°C
2034	+0.5°C to +1.5°C	+0.6°C to +2.1°C	+0.1°C to +1.4°C
2064	+0.8°C to +2.3°C	+1.1°C to +3.4°C	+0.9°C to +2.4°C
2099	+1.5°C to +4.5°C	+1.6°C to +10°C	+1.7°C to +4°C

Source: Cayan et al. 2008; Hayhoe et al. 2004; Pierce et al. 2013; Thorne et al. 2016

More recent data from EcoAdapt suggest that by 2100, the change in average annual temperature will range from 2.2 degrees Celsius [°C] to a 5.5°C increase compared with temperatures from 1951 to 1980, with a 2.0°C to 5.8°C increase in average winter minimum temperatures and a 2.8°C to 6.7°C increase in maximum summer temperatures (EcoAdapt 2019). Additionally, the EcoAdapt data showed that from 1900 to 2009 the difference in average annual temperatures has changed from a 0.03°C year-to-year decrease to a 0.2°C increase (EcoAdapt 2019).

The planning area hosts a number of species and ecosystems dependent on cold water. As temperatures increase, water temperature can become a limiting factor, restricting the range of species such as salmonids. Excessive temperatures across the planning area already impair water quality, with many watersheds listed under the Clean Water Act (CWA) as temperature impaired. Ongoing climate changes will likely exacerbate these impairments. Similarly, changes in the air temperature regime influence terrestrial biota. Shifts in the distribution and composition of vegetation communities occur as temperatures shift outside of physiological tolerance for a given species.

Extreme temperature events (such as, summer heat waves and warm winter days) are expected to become more frequent. For example, various scenarios show summer heat waves becoming two to three times more frequent for Northern California (Cayan et al. 2008; Hayhoe et al. 2004).

Storm Frequency and Intensity with Changing Climate

Climate change is expected to result in greater variability of storm frequency and intensity, which is expected to result in more intense droughts coupled with more intense storms (Cayan et al. 2016; Dettinger 2016; and Yoon et al. 2015). Changes in annual and seasonal precipitation totals (**Table D-5**) are difficult to forecast with a low confidence in any trends (EcoAdapt 2016). Mean annual precipitation is projected to decrease (Hilberg et al. 2020) between 20 and 34 percent by 2100 (compared with 1951-1980), especially in the drier season. Precipitation extremes (i.e., high precipitation days and consecutive dry days) are projected to increase in frequency and intensity across the US (Easterling et al. 2017; Polade et al. 2017). Snowfall is projected to decrease in the Pacific Southwest region, particularly at lower and middle elevations where snowpack is sensitive to temperature increases (Klos et al. 2014; Luce et al. 2014; Berg et al. 2017).

Data from EcoAdapt suggest that by 2100, the change in average annual precipitation will range from a 19 percent decrease to 27 percent increase, compared with precipitation from 1951 to 1980 (EcoAdapt 2019).

Table D-5
Projected Precipitation Changes Over Various Time Periods within the NCIP Planning Area

Projected Timeframe:	Change over Historic Annual Precip. (750 to >1,000 mm)	Change over Historic Summer Precip. (14 mm)	Change over Historic Winter Precip. (386 to >650 mm)
2034	-0.4% to +7%	-29% to +44%	-5% to +13%
2064	-3% to +3.4%	-67% to +35%	-5% to +6%
2099	-30% to +18%	-68% to -4%	-9% to +4%

Source: Cayan et al. 2008; Hayhoe et al. 2004; Koopman et al. 2009; Snyder et al. 2004, EcoAdapt 2016

Note: mm=millimeters

The consecutive occurrence of meteorological dry and wet extremes has been receiving increasing attention due to potentially larger social and environmental impacts than single extremes. Such a transition from a dry spell to a wet spell was described as “climate whiplash” or “weather whiplash” (Swain 2018). Research suggests that the frequency of such “precipitation whiplash” events—in which California experiences a very dry year followed immediately by a very wet year—will increase considerably as the climate warms. Research found anywhere from a 25 percent increase in far northern California to over a 100 percent increase over far southern California in the frequency of these dry-to-wet whiplash events (of a magnitude that has historically occurred about four times per century). California will likely experience more frequent jarring transitions between dry and wet years, but also between dry and wet months within individual years (Swain 2018).

Sea Level Rise as the Result of Climate Change

Sea level rise is a critical issue facing coastal areas. Tide gauge data show global sea levels have risen approximately 3.4 millimeters per year (1.3 inches per decade) since 1993, approximately double the rate of the previous century (California Ocean Protection Council Science Advisory Team Working Group [COPC] 2017). Along the Northern California coastline, ongoing tectonic processes of crustal uplift and subsidence compound observed sea level changes. Where the coast is subsiding, observed sea level changes are greater than global projections. North of Cape Mendocino, where long-term crustal uplift is occurring, sea level rise is expected to be less than global projections, shown by the Crescent City tide gauge recording an average relative sea level change of -0.8 millimeters per year over 84 years (COPC 2017). However, recent work focusing on Humboldt Bay has shown localized subsidence occurring, and the rate of sea level rise is two to three times greater than global projections (Laird 2015; Anderson 2015; Patton 2013).

Compounding observed sea level changes are ongoing tectonic processes that deform the coastline. North of Cape Mendocino the shoreline is shaped, in part, by a convergent plate margin. An ongoing cycle of strain accumulation and release, both between (interseismic) and during large earthquakes (coseismic), produces a complex pattern of crustal uplift and subsidence. The overall geologic trend of the Northern California coast is uplifted, thereby reducing the effects of sea level rise from global predictions (NRC 2012). However, finer scale investigations around Humboldt Bay reveal long-term subsidence, exacerbating the effects of sea level rise (Laird 2015; Anderson 2015). The combination of rising seas and subsiding coastal lands in the vicinity of Humboldt Bay results in a rate of sea level rise two to three times higher than other portions of the California coast (Cascadia GeoSciences 2013). The apparent magnitude of sea level rise will vary considerably across the coastline, dictated by ongoing crustal uplift and

subsidence. These changes, known as isostatic sea level changes, are apparent in tidal records from Humboldt Bay and may also be a factor elsewhere. As the crust deforms from ongoing tectonic processes, areas of uplift and subsidence will result in very different patterns of sea level change.

Maintaining the resilience of coastal areas to accommodate rising sea levels is important for inland communities (Crooks 2004). For example, dune systems that provide buffering between coastal and inland areas may be able to transgress or migrate landwards in response to elevated sea level and retain their buffering function, though the specific mechanisms of this are difficult to forecast (Carter 1991).

Climate Change Effects on Resources

Climate change affects temperature, precipitation, and sea level rise will affect the BLM-administered lands and resources differently throughout the planning area. Coastal areas are less likely to be impacted by temperature changes, but they are the only lands subjected to rising sea levels. Inland areas will be more affected by changes in temperature and perhaps extreme heat events.

Climate change is expected to strongly influence soil conditions by increasing soil temperature, further exacerbating drought conditions and low soil moisture during dry periods and leading to changes in vegetation community structure. Water supply is also impacted by climate change through shifts in precipitation patterns and intensity. Climate change is expected to increase water temperatures, potentially decrease water availability on the landscape and within waterbodies, and further exacerbate drought conditions, which could lead to changes in vegetation community structure. An amplified hydrologic cycle, with stronger fluctuations in precipitation and more intense precipitation events, is expected to cause flooding, hillslope and stream bank erosion, and potential for mass wasting. Higher intensity wildfires would further reduce cover by desirable vegetation and increase potential for erosion, slope destabilization, and mass wasting.

Vegetation communities play a central role in either mitigating or responding to climate change. Healthy forests, for example, sequester carbon, and forests in the planning area have some of the highest carbon sequestration rates in California (Humboldt State University 2020). Carbon sequestration is the process of capturing and storing atmospheric CO₂. Two types of carbon sequestration include geologic sequestration, where CO₂ is stored deep underground in geologic formations, and biologic sequestration, which is the storage of atmospheric carbon in vegetation, soils, and aquatic environments (USGS 2022). Any ground disturbance is assumed to remove vegetation that naturally provides carbon uptake. Converting existing lands would eliminate the natural sequestration of carbon because the existing vegetation acts as a sink by removing CO₂ from the atmosphere. Grasslands are also important ecosystems that sequester most of their carbon underground. A 2018 study found that the inherent resilience of grassland vegetation to drought and wildfire translates to a more reliable carbon sink than forest ecosystems in response to 21st century climate changes (Dass et al. 2018). When fire burns grasslands the carbon fixed underground tends to stay in the roots and soil, making them more adaptive to climate change and a potential substantial carbon sink in certain landscapes. Managing diverse, ecologically resilient landscapes and healthy forests will be central to adapting to a changing climate (EPA 2016). However, due to drought and abnormally warm temperatures, wildfires in California have become more severe, with 8 of the 20 largest fires in California's history occurring since 2017 and the area burned annually by wildfires in California increasing since 1950 (CARB 2020a). The area burned by wildfire since 1950 also may be due to non-climate change factors, such as a marked increase in human population; a great number of ignitions have a human source.

Vegetation communities would continue to be strongly influenced by climate change, increased frequency and intensity of fires, insect and disease pests, weed infestations, and ongoing drought conditions. Some vegetation communities are projected to drastically change in response to these changes, including shifts in evergreen forests and expansion of grassland communities in some areas. Any dramatic shifts in vegetation community structure, as would occur in responses to catastrophic fires and/or landslides, would be accompanied by soil instability and erosional losses until landscapes reach equilibrium under new vegetation communities. More generally, anticipated conditions under climate change will likely expand suitable habitat for invasive, nonnative plants throughout the planning area, as shown for numerous weed species in Table 2-23 of the 39 AMS (BLM 2021a, p. 2-89).

Climate change is likely to result in a less productive landscape and associated habitats. In general, less productive habitats will likely support less wildlife. Species requiring cool wet areas are at the most risk, as those areas are likely to shrink; however, there are likely some species that will benefit from changing vegetation composition. Species using grasslands, brush, and oak woodlands may increase with the increases in those habitats. Warmer and drier conditions due to climate change also influence wildlife habitat by increasing the frequency and severity of wildfires (CARB 2020).

Climate change will impact livestock grazing in the future by altering the availability and type of forage available for livestock grazing. Climate change may result in increased frequency, size, or severity of fires, which would change the ground cover and the vegetation type (particularly a transition to annual grass species from perennial grasses). During catastrophic wildfires, livestock grazing lessees are put more at risk of impacts as a result of wildfires; these impacts include needing to evacuate the lessees' animals and find temporary shelter for them, a loss of forage due to fire, and damage to grazing infrastructure.

Damage to coastal resources could also occur from climate change and sea level rise from high force wave events, inundation, erosion, and dune migration. Actions that decrease resiliency to climate change are considered adverse. Actions that increase resiliency of coastal resources to climate change are considered beneficial. Rises in sea level from climate change have the potential to inundate or impact sea caves. Erosion is a common facet of the dynamic coastal environment. The sea caves, beaches, dunes, and coastal headlands are subject to a variety of erosive forces from storm surges, large wave events, tsunamis, earthquakes, changes in sediment deposition patterns due to jetties and river flooding, and rising sea levels. Climate change, which could result in more violent storms and increased wave activity, may increase erosion of sea caves.

Climate change-related challenges have the potential to adversely affect both documented and undocumented cultural resources. This is manifest through slow procedural changes related to changes in natural processes, as well as the compounding increase in damaging events such as intensive storms and increased frequency and size of wildfires. The trend of climate change will continue to present challenges for the protection and preservation of cultural resources throughout the planning area.

Climate change in the planning area is expected to continue to interact with ecosystems and habitats causing greater erosion in areas that can impact paleontological resources. Of particular interest are continued wildfire dangers, especially along steep slopes, where loss of slope stabilizing vegetation and soils would cause substantial increase in erosion and expose underlying geological units, which could contain paleontological resources. In addition, coastal erosion from increases in storm intensity and expected sea level rise would cause damage to geological units, which may contain paleontological resources.

The BLM conducts a number of ongoing monitoring protocols across different resource areas which can be used to conduct meaningful analyses of a changing climate. Forest inventories, datasets of vegetation distributions, and robust wildlife monitoring across a range of species are all baseline datasets from which the impacts of climate changes and management decisions can be evaluated. BLM will continue to work with partner agencies specializing in the collection of climate data including temperature, wind patterns, and hydrology as well as researchers focused on the impacts of climate change on flora and fauna across the planning area to continue using adaptive management to protect resources.

Environmental Consequences

This section describes the potential impacts on air resources from the implementation of the proposed NCIP management alternatives. The evaluation of air resources included the evaluation of impacts of resource management actions on air quality and global climate change, where applicable. Existing conditions concerning air quality are described in the Affected Environment section above. The impacts from water, cave and karst, education and interpretation, forestry, cultural, paleontology, Tribal interests, land use, land tenure, riparian management areas, VRM, and recreation management actions would have minimal impacts on air quality and will not be discussed further in this section.

Several indicators for evaluation of impacts on air resources have been identified that include predicted impacts on NAAQS, CAAQS and PSD program of the CAA and predicted impacts on Air Quality Related Values (AQRVs). Alternatives that are compliant with the NAAQS are assumed to be protective of human health and the environment. A predicted threshold exceedance of an AQRV means that an adverse impact could occur. A predicted exceedance of known health exposure levels means that an adverse impact could occur.

The following air pollutants were identified as being pollutants that could potentially be emitted by management actions and activities authorized, permitted, allowed or performed under this resource management plan (RMP). Emissions of these pollutants are discussed qualitatively for each identified management action and addressed for each alternative in this analysis where applicable.

- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
- Particulate matter less than or equal to 10 microns in diameter (PM₁₀)
- Particulate matter less than or equal to 2.5 microns in diameter (PM_{2.5})
- Sulfur dioxide (SO₂)
- Hydrogen Sulfide (H₂S)
- Volatile Organic Compounds (VOCs)
- Hazardous Air Pollutants (HAPs)
- GHGs include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O)

Management actions associated with each of the resources are discussed below. Emission inventories have not been developed for each of the resources, consequently only a qualitative analysis was performed for each of the resources.

There are both direct and indirect impacts on air resources. For example, for oil and gas development and other surface- and subsurface-disturbing activities, emissions increases resulting from construction

and operation of the facilities are direct impacts. Indirect impacts include increased traffic throughout the planning area and the end use combustion of the oil and gas. Potential direct and indirect impacts on air resources associated with each applicable resource are discussed in greater detail below.

Many of the resource areas have proposed management and travel-related decisions that limit or reduce surface and vegetation disturbance, increase vegetation and habitats, limit or reduce OHV and other off-trail access, and improve existing roadway and trail surfaces. To the extent these decisions reduce emissions, there may be a negligible beneficial impact on air quality.

Appendix B identifies actions specifically designed to manage activities and development within the planning area to protect and improve air quality and, within the scope of the BLM's authority, minimize emissions that 1) cause or contribute to violations of air quality standards, 2) that impact AQRVs, and 3) are GHGs. As discussed, a detailed Reasonably Foreseeable Development has not been released by the BLM for the NCIP Planning Area; therefore, the following discussion presents a qualitative evaluation of air quality and climate change actions.

Impacts Common to All Alternatives

Projected emissions common to all alternatives include: PM₁₀, PM_{2.5}, SO₂, NO_x, VOCs, H₂S, and GHGs. The following lists the air quality regulatory requirements applicable to all alternatives:

- National Environmental Policy Act (NEPA)
- Various programs and guidance documents from the California Environmental Protection Agency (CalEPA)
- Existing and newly developed BMPs in coordination with the BLM and/or State of California agencies
- Air Resources Handbook for BLM California Personnel, August 2022
- Title 40 of the Code of Federal Regulations
- Air permitting requirements

Below the management actions that affect air quality and climate change common to all alternatives and for each alternative are discussed including soils, fish, wildlife, wildland fire, vegetation, lands with wilderness characteristics, mineral, special designations, visual resource management, renewable energy, livestock grazing and travel and transportation.

Management actions for soils are generally projected to result in increased vegetation cover (density and height) and lower overall surface/soil disturbance and wind and water surface erosion. Proposed management decisions generally include managing the BLM-authorized activities to make progress towards properly functioning soil conditions with soil properties appropriate to specific climate and landform. This is including, but not limited to: bulk density; infiltration/permeability rates; and moisture storage. Managing actions on the BLM public lands in the planning area to provide for long-term sustainability of soil including protection from vegetation trampling/removal, soil compaction, and accelerated soil erosion; and maintaining or improving soil conditions for the planning area. Direct air quality impacts from soils' actions would likely be small and most noticeable in a cumulative fashion when coupled with other management actions. Potential effects from these management decisions include improved vegetative cover in many areas and protection against soil erosion and compaction, which would reduce potential for erosion and

mobilization of soil, and, therefore, fugitive dust that would otherwise increase dust emissions. Management actions that affect air quality include prioritizing high severity burn areas, steep slopes, and areas with high erosion potential rating for soil stabilization and erosion control effort and where practicable, maintain, promote, and restore perennial native grasslands for carbon sequestration.

Any ground disturbance is assumed to remove vegetation that naturally provides carbon uptake. Converting existing lands would eliminate the natural sequestration of carbon because the existing vegetation acts as a sink by removing CO₂ from the atmosphere. Therefore, soils management actions to increase vegetation cover and lower overall surface/soil disturbance would decrease CO₂ levels in the atmosphere due to increased carbon sequestration. CARB has estimated carbon accumulation values for major cover types for each California air basin. For the North Coast Air Basin, the metric tons (MT) of carbon per acre per year are as follows: broadleaf forest - 2.3 MT, conifer forest - 3.77 MT, grassland 0.43 MT, mixed forest 2.8 MT, and shrubland 2.92 MT. However, soil minerals also act as a carbon sink and soil management can also increase carbon sequestration in the soil.

Short-term benefits to air quality would most likely not be measurable in the overall planning area. Long-term benefits would include incremental site-specific reductions in windborne particulates from reduced erosion of exposed soils as vegetation cover improves over time, as well as decreased CO₂ due to carbon sequestration of the vegetation cover. To the extent possible, modifications to the landscapes such as soil disturbance from fire, vegetation cover management, and climate change would be monitored and this information would be used to prioritize stabilization and rehabilitation to protect human health/safety, important resource values, and the functions of critical ecosystems.

Management actions for fish and wildlife, including riparian buffers, protected buffers around wildlife habitats, and other areas managed specifically for habitat improvement projects, are generally projected to result in increased vegetation cover and production, lower overall surface/soil disturbance, and decrease wind and water surface erosion as habitat is improved. Direct air quality impacts from vegetative community actions would likely be small and most noticeable in a cumulative fashion when coupled with other management actions. Potential effects from these management decisions include improved vegetative cover in many areas, which would result in site-specific reductions in windborne particulate from reduced erosion of exposed soils. Additional vegetation cover would provide carbon uptake, increasing the natural sequestration of carbon because the vegetation acts as a sink by removing CO₂ from the atmosphere.

Short-term benefits to air quality would most likely not be measurable in the overall planning area. Long-term benefits would include incremental site-specific reductions in windborne particulates from reduced erosion of exposed soils as vegetation cover improves over time, as well as decreased CO₂ due to carbon sequestration from the increased vegetation cover.

Management actions for wildfire include using prescribed burning and surface disturbance from mechanical and hand operated equipment used to cut, clear, or prune herbaceous or woody vegetation. Prescribed burning would have short-term air quality effects projected from prescribed burns including a general increase in particulate matter and CO emissions specific to the burn area and locations downwind. The magnitude of increase is directly dependent on the size, extent, and controlled level of the burn. The type and amount of air pollutants released from burning wildland vegetation varies with type of fuel, moisture content, temperature of the fire, and the amount of smoldering occurring after the fire. Because prescribed burning occurs irregularly, it is generally possible to restrict burning on "bad air quality days" to avoid

violating air quality standards. Surface disturbance from mechanical and hand operated equipment used to cut, clear, or prune herbaceous or woody vegetation would have short-term air quality effects projected from prescribed burns include a general increase in particulate matter.

Long-term direct air-quality effects projected from prescribed burns include a general increase in airborne particulate materials from the burn site as a result of ash dispersion and transport, an increase in GHG emissions caused by combustion and a decrease of carbon sequestration. This increase would occur only until revegetation is complete and growth matures.

Short- and long-term indirect effects on air quality from prescribed burns include an increase in airborne particulates from the burn sites as a result of wind-based erosion of devegetated areas. This effect is expected to be small, as vegetation management is an active part of fire management techniques. A greater long-term effect of prescribed burning is a reduction in particulate, CO, methane, and nitrous oxide emissions specific to wildfire in unmanaged areas. The management actions for wildfire management include compliance with the national policy, including the National Cohesive Wildland Fire Management Strategy and the Western Regional Action Plan. These would ensure management activities do not degrade the planning area's air resources.

Wildfire would have similar short-term and long-term direct and indirect impacts. However, the detrimental effects from wildfire would likely be greater than those from prescribed fire and they would exert a larger adverse effect on air quality. Wildfire and prescribed fires and their effects operate at different spatial and temporal scales (Hunter, et al. 2020). A small percentage of wildfires result in substantial and long-lasting impacts on ecosystems and society. Such wildfires tend to cover large spatial scales and are relatively infrequent. Individual prescribed fires tend to cover smaller spatial scales and result in less severe effects (and ample benefits) to ecosystems and society that are relatively short-lived. However, as discussed above, prescribed fires include management actions that reduce air resource degradation. A 2021 EPA analysis indicated that fire management strategies targeted to reduce the spread and overall size of wildfires can result in substantial differences in the health impacts when compared with wildfires. Even though prescribed fires in both case study areas are shown to contribute to an estimated reduction in health impacts from wildfire smoke, these prescribed fires are not without risk and have their own health impacts, albeit smaller (EPA 2021).

Removal of plants and plant litter by fire considerably increases the erosion potential of the underlying soil, leaving the area vulnerable to windborne particulates from exposed soils (fugitive dust emissions). Ground disturbance and vegetation removal as a result of wildfire would add to the GHG impact because vegetation would no longer be present to sequester CO₂. The loss of carbon uptake depends on what fraction of natural vegetation cover is removed, and on efforts to minimize soil erosion or protect existing habitat to minimize the loss of carbon uptake. In addition to CO₂ from the release of biomass carbon into the atmosphere, CH₄ is emitted due to incomplete combustion of biomass and N₂O is a product of combustion. Short- and long-term indirect effects on air quality from wildfire include an increase in airborne particulates from the burn sites as a result of wind-based erosion of devegetated areas.

There are no BLM management actions for mineral actions common to all alternatives. Mineral actions must provide opportunities for environmentally responsible exploration and development of leasable mineral and energy resources subject to appropriate BLM policies, laws, and regulations. Mineral development is allowed under all alternatives and potential emissions common to all alternatives include: PM₁₀, PM_{2.5}, SO₂, NO_x, VOCs, H₂S, HAPs and GHGs.

Emission sources associated with oil and gas development and mineral development include fugitive dust and vehicle exhaust emissions from construction, drilling (hydraulic fracturing and conventional), and operations; vehicle travel and reclamation activities; fuel combustion emissions from drilling, completions, compressor and oil pump engines, flares, combustors, and heaters; and VOC and HAP emissions from glycol dehydrators, storage tanks, process piping fugitive emissions from facility components, pneumatic controllers, natural gas venting, and other ancillary sources. While air emissions from either hydraulic fracturing or conventional drilling methods are generally similar, hydraulic fracturing has opened new opportunities for oil and gas production, and associated air emissions from construction, drilling, and operations due to the ability to extract oil and gas product in areas previously considered inaccessible or too costly. Additionally, truck traffic associated with fracking operations is higher than conventional drilling methods due to the need for water and fracking fluids, and this water would be trucked or piped in.

These air emissions would only occur if the planning area is open to locatable mineral entry, mineral leasing or mineral development, which is further discussed under each alternative. However, mineral development in the planning area is fairly minimal overall. Current trends, which are discussed in appendix table C-1, are likely to continue and demonstrate the relatively minimal mineral development seen in the planning area. These existing and potential mineral developments in the planning area would have air quality impacts including fugitive dust and vehicle exhaust emissions from construction and operations; vehicle travel and reclamation activities; fuel combustion emissions from drilling, completions, compressor and oil pump engines, flares, combustors, and heaters; and VOC and HAP emissions from glycol dehydrators, storage tanks, process piping fugitive emissions from facility components, pneumatic controllers, natural gas venting, and other ancillary sources. Currently, there are no leases or applications for oil and gas leasing on BLM-administered lands or mineral estate in the planning area, nor have any been applied for in over 20 years; however, there are several oil and gas fields in the Arcata FO and Redding FO planning area. Due to the lack of mineral resource potential, it is unlikely that geothermal energy will be developed anywhere within the planning area on BLM-administered lands or mineral estate.

Within the Arcata FO portion of the planning area, there has been no substantial exploration or mining of locatable minerals on BLM-administered lands. Exploration and mining are more common in the Redding FO, where there are currently 482 active mining claims. Most of these claims have little, if any, mineral development occurring on them, at the minimal level termed “casual use” (43 CFR 3809). The trend for mineral materials development has been an increase in the number and size of free use permits (FUPs) and a decreasing demand for sales contracts. Within the Arcata FO portion of the planning area, the BLM has authorized FUPs at two sites and there have been no sales in the Arcata FO area. Within the Redding FO portion of the planning area, the BLM has authorized 18 FUPs, seven of which are still authorized. The BLM has had 15 noncompetitive sale contracts, none of which is still authorized; all have been closed. Other mineral materials include fractured quarry rock for road base, weathered granite for sand aggregate, pumicite, landscaping stone, placer tailings for riprap, and sand and gravel for aggregate. The Redding FO has also authorized two community mineral materials pits. There are also several large aggregate mines on private land within the planning area. These potential and existing mineral actions would have air quality impacts including fugitive dust and vehicle exhaust emissions from construction and operations; vehicle travel and reclamation activities; fuel combustion emissions from drilling, completions, compressor and oil pump engines, flares, combustors, and heaters; and VOC and HAP emissions from glycol dehydrators, storage tanks, process piping fugitive emissions from facility components, pneumatic controllers, natural gas venting, and other ancillary sources.

Air quality impacts from special designations are generally projected to result in localized incrementally beneficial effects on both short- and long-term air quality to the extent that surface disturbance from construction activities, new roads, and traffic would be reduced or eliminated within: ACECs, WSRs, existing wilderness and Section 603 WSAs, and lands with wilderness characteristics where wilderness is managed as priority. This air quality improvement would be related to the number of acres designated and the management decisions for each designation that would limit activity on the designated lands. The specific acreages designated for each special designation are discussed under Alternative A. Due to the reduction in surface disturbance and re-entrained road dust from traffic, the greatest improvement would likely be a reduction of particulates (fugitive dust) in and near the designated areas.

Air quality impacts from renewable energy management actions are generally projected to result in incrementally beneficial effects on both short- and long-term air quality to the extent that fossil fuel combustion emissions are reduced (from alternative energy like coal and natural gas), thereby reducing GHG emissions that contribute to climate change. Short-term air quality impacts from construction emissions include fugitive dust and vehicle exhaust emissions and would depend on the level of development and land disturbance that occurs under each alternative.

Renewable energy is generally expected to have a beneficial impact on climate change by helping to reduce GHG emissions from fossil fuels. However, land disturbance associated with renewable energy projects may have an adverse impact on the resources' ability to adapt to climate change by reducing natural buffer systems. Ground disturbance and vegetation removal during construction of renewable energy facilities would add to the GHG impact because removed vegetation would no longer be present to sequester CO₂ and any ground disturbance would generate particulate emissions (fugitive dust). In 2021, recent studies were compiled to show the four life-cycle phases (one-time upstream [e.g., materials acquisition and plant construction], ongoing combustion [where applicable], ongoing noncombustion [e.g., operation and maintenance], and one-time downstream [e.g., plant decommissioning and disposal/recycling]) as well as a total life-cycle emissions factor for renewable and nonrenewable resources. These results show that total lifecycle GHG emissions from renewables and nuclear energy are much lower and generally less variable than those from fossil fuels. For example, from cradle to grave, coal-fired electricity releases about 20 times more GHGs per kilowatt-hour than solar, wind, or nuclear electricity (based on median estimates for each technology) (NREL 2021).

Each alternative has varying management strategies related to renewable energy, including geothermal, hydropower, biomass, solar, wind, wave, and offshore energy development. The management actions do not provide specific areas for renewable development, but also do not close areas to hydropower applications, biomass permits and ROWs, solar development, wind development, or wave and offshore energy development. Therefore, there is no discernable difference between the number of acres likely developed for these types of renewable energy under the different alternatives. Because the alternatives have comparable areas open to renewables development, the air quality impact is expected to be similar in magnitude among each of the alternatives. Geothermal leasing would vary by alternative and air quality impacts are discussed for each alternative below.

Livestock grazing actions are generally projected to result in localized air quality impacts, including windborne particulates from exposed soils as vegetation is removed by livestock (fugitive dust emissions) and methane as a byproduct from the animals. These air quality impacts would depend on the level of grazing (amount of bare soils subject to wind erosion) and the number of animals grazed and associated

methane emissions. The more land reserved from grazing may result in an incremental beneficial effect on air quality, however, this would be dependent on the number of animals grazed per acre and potential alternate land uses. Common management actions such as control of land utilization levels, erosion control, and livestock grazing standards would generally have a beneficial impact on air quality, because they promote grazing practices that aim to reduce fugitive dust emissions and promote soil and vegetation health for carbon sequestration. Because annual vegetation production, actual use levels by livestock, and patterns of distribution of livestock vary, the impacts on air quality, fugitive dust, and methane emissions would be speculative. Additionally, even though, there are differences between the alternatives in acres open to grazing, factors like whether an area is suitable for grazing, the appropriate stocking level, and general interest in the public lands for grazing would likely mean that actual differences in livestock grazing authorizations or number of livestock on the landscape would not be appreciably different among alternatives. Therefore, the BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP. For these reasons, impacts are expected to be similar, although they are further discussed under each alternative.

Travel and transportation actions, which would include OHV limitations, would have a beneficial impact on air quality because these measures effectively reduce traffic in designated areas. Because these areas would likely be dirt roads, the greatest improvement would be in particulate emissions (fugitive dust). Management actions common to all alternatives are not expected to have sizeable impacts on air quality.

Alternative A

Mineral actions must provide opportunities for environmentally responsible exploration and development of leasable mineral and energy resources subject to appropriate BLM policies, laws, and regulations. Under the Alternative A, 61,300 acres would be closed to mineral leasing (BLM fluid leasable and nonenergy mineral leasing). Also under Alternative A, 81,700 acres would be closed to mineral materials development (BLM surface) and 60,000 acres are withdrawn from locatable mineral development (BLM surface). Closing these acres to mineral leasing and development would reduce potential new leases or developments, which in turn could reduce fugitive dust from surface disturbance and vehicle exhaust emissions in the planning area, as well as VOC and HAP emissions from: glycol dehydrators, storage tanks, process piping fugitive emissions from facility components, pneumatic controllers, natural gas venting, and other ancillary sources.

Air quality impacts from special designations are generally projected to result in localized incrementally beneficial effects on both short- and long-term air quality to the extent that surface disturbance from construction activities, new roads, and traffic would be reduced or eliminated within: ACECs, WSRs, WSAs, and lands with wilderness characteristics where wilderness is managed as priority. Under Alternative A, 54,600 acres would be managed as ACECs, 65,300 acres would be managed as WSRs, and 58,490 acres would be managed as existing Section 603 WSAs. Of the alternatives, Alternative B has the largest area to be managed as ACECs, with more than 1.5 times the acreage of Alternative A; more than 2.0 times the acreage of Alternative C, and comparable to the acreage of Alternative D. Impacts on air quality from managing areas as WSAs would have localized beneficial impacts; Alternative B would have the largest combined area of Section 603 and Section 202 WSAs. Managing an area as a WSR would also have localized beneficial effects because those areas would be managed as closed to development. Of the alternatives, Alternative A and Alternative B have the largest area to be managed as WSRs, with more than 4.0 times the acreage of Alternative C; more than 3.3 times the acreage of Alternative D. **Table D-6** shows the ACECs, WSRs, and Section 603 and Section 202 WSA acreages associated with each

Table D-6
Special Designations by Alternative

Special Designations	ACEC (acres)	WSR (miles; eligible, suitable, designated)	Section 603 WSA (acres)	Section 202 WSA (acres)
Alternative A	54,600	253.8	58,490	0
Alternative B	88,820	253.7	58,490	12,090
Alternative C	42,430	66.2	58,490	0
Alternative D	87,890	199.2	58,490	540

Source: BLM GIS 2023

alternative. It is expected that the more acreage managed as ACECs, WSAs, and wild and scenic rivers, the greater the protection to air resources, which is due to the reduction in surface disturbance and re-entrained road dust from traffic, the greatest improvement would likely be a reduction of particulates (fugitive dust) in and near the designated areas. While there is likely not a direct correlation between where wilderness is managed as priority to air quality, it is expected that the more acreage that is managed as lands where wilderness is managed as priority, the greater the protection to air resources due to reduced surface disturbance.

Air quality impacts from renewable energy management actions are generally projected to result in incrementally beneficial effects on both short- and long-term air quality to the extent that fossil fuel combustion emissions are reduced (from alternative energy like coal and natural gas); therefore, reducing GHG emissions that contribute to climate change. Under Alternative A, most of the planning area is open to geothermal resource leasing, precluded geothermal resource leasing and development in the Northern California Coast Range Preserve (NCCRP). Under Alternative A, potential waterpower/storage reservoir sites under a land withdrawal/classification would continue to be managed for waterpower values, prior and existing rights would be honored and any existing withdrawals or permits for waterpower or storage would be recommended by the BLM for extension/renewal. Alternative A has no biomass management actions. For Alternative A, the Solar Programmatic Environmental Impact Statement (PEIS) and Record of Decision (ROD) excluded all RFO and AFO lands from variance areas and solar energy zones (SEZs) for utility-scale facilities due to low resource potential (i.e., projects with capacities of 20 megawatts or greater that generate electricity that is delivered into the transmission grid). Under Alternative A, wind applications would be considered on a case-by-case basis and in accordance with the Wind PEIS and ROD dated 2005, and there would be no management actions related to wave and offshore energy development. There are no specific acreages for open geothermal development, hydropower applications, biomass permits and ROWs, solar, wind, or wave and offshore energy development. Therefore, there is no way to determine which alternative would provide the least opportunity to develop renewable energy, and, therefore, may provide the least protections for air quality. Because the alternatives have comparable areas open to renewables development, the potential long-term reduction of fossil fuels is expected to be similar in magnitude among each of the alternatives. Short-term air quality impacts from construction emissions, including fugitive dust, vehicle exhaust emissions, and CO₂ emissions from reduced carbon sequestration, would depend on the level of development and land disturbance that occurs.

Livestock grazing actions are generally projected to result in localized air quality impacts, including windborne particulates from exposed soils that may occur as vegetation is removed by livestock (fugitive dust emissions) around high use areas such as handling facilities or water troughs and methane as a

byproduct of the animals. Grazing allotments require compliance with standards and guidelines which protect soils and vegetation cover. Alternative A has the least area available for livestock grazing with 186,900 acres, which is only 1.3 percent of the total surface landownership in the NCIP Planning. Of all the alternatives, Alternative A has 1.3 times less acreage available for livestock grazing compared with Alternative B; less than 1.5 times the acreage of Alternative C, and less than 1.1 times the acreage of Alternative D. While 186,900 acres would be available to livestock grazing, only 62,600 acres would continue to be managed as grazing allotments under Alternative A. Because annual vegetation production, actual use levels by livestock, and patterns of distribution of livestock vary, the impacts on air quality, fugitive dust, and methane emissions would be speculative. Additionally, even though, there are differences between the alternatives in acres open to grazing, factors like whether an area is suitable for grazing, the appropriate stocking level, and general interest in the public lands for grazing would likely mean that actual differences in livestock grazing authorizations or number of livestock on the landscape would not be appreciably different among alternatives. For these reasons, impacts are expected to be similar. However, given that the Alternative A lands available to grazing are less than 1.3 percent of the total NCIP Planning Area acreage, livestock grazing will likely have negligible impacts on air quality.

Under Alternative A travel and transportation actions, 322,800 acres would be OHV limited and 59,200 acres would be closed to vehicle travel. Air quality impacts, fugitive dust and vehicle combustion exhaust due to vehicle travel, would be dependent on the number and types of vehicles and the types of travel surfaces used by the vehicles. All of the alternatives have 190 acres open to OHV travel, with Alternative B having the most acreage closed to OHV travel at 73,600 acres. Although, under Alternative D Ma-le'l Dunes ACEC would be managed as OHV closed. Alternative A and Alternative C have the lowest acreage closed to OHV travel, which represent 80.4 percent of Alternative B. While a direct correlation cannot be made to air quality impact, there would not be one alternative likely to have the greatest impact on air quality because of the similarities between the areas closed to vehicle travel.

Alternative B

Appendix F contains BMPs which would apply to internal BLM projects and BLM permitted activities to minimize impacts on air quality.

There are no decisions for lands with wilderness characteristics common to all alternatives, except generally to ensure allowable uses that are consistent with the goals and objectives for managing lands to preserve wilderness characteristics. Under Alternative B, 21,970 acres would be managed to protect wilderness characteristics. Eliminating these acres from construction of new roads and the associated vehicle traffic would reduce particulate and exhaust emissions in the planning area compared with Alternative A, since under the Alternative A there would be no units managed as lands with wilderness characteristics. Of all the alternatives, Alternative B has the largest area to be managed as lands with wilderness characteristics. Alternative B is, therefore, the most favorable to air quality with respect to managed acreage to protect lands with wilderness characteristics. While there is likely not a direct correlation of managed acreage to air quality, it is expected that the more acreage that is managed as lands with wilderness characteristics, the greater the protection to air resources. These protections would reduce particulate matter emissions (fugitive dust) from surface disturbance and exhaust emissions from vehicle traffic.

Mineral actions must provide opportunities for environmentally responsible exploration and development of leasable mineral and energy resources subject to appropriate BLM policies, laws, and regulations. Under

Alternative B, 187,800 acres would be closed to mineral leasing (BLM surface leasable minerals), which is 3.1 times the Alternative A acreage. Under Alternative B, 206,700 acres would be closed to mineral materials development (BLM surface), which is 2.5 times the Alternative A acreage. The acres closed to locatable mineral entry are the same under each alternative. Closing these acres to mineral leasing and development would reduce potential new leases or developments, which in turn could reduce fugitive dust from surface disturbance and vehicle exhaust emissions in the planning area, as well as VOC and HAP emissions from: glycol dehydrators, storage tanks, process piping fugitive emissions from facility components, pneumatic controllers, natural gas venting, and other ancillary sources. With more acres closed to mineral leasing and mineral development, Alternative B would overall have less air quality impacts than Alternative A.

Air quality impacts from special designations are generally projected to result in localized incrementally beneficial effects on both short- and long-term air quality to the extent that surface disturbance from construction activities, new roads, and traffic would be reduced or eliminated within special designation areas (see discussion under Alternative A). Under Alternative B, 88,820 acres would be managed as ACECs, which is more than 1.5 times the acreage of Alternative A. Alternative B would have more acres designated as WSAs than Alternative A, as Alternative B would include both existing (Section 603) and proposed (Section 202) WSAs. The miles of WSRs under Alternative B is almost identical to the miles under Alternative A. It is expected that the more acreage managed as ACECs, WSAs, and wild and scenic rivers, the greater the protection to air resources and due to the reduction in surface disturbance and re-entrained road dust from traffic, the greatest improvement would likely be a reduction of particulates (fugitive dust) in and near the designated areas. While there is likely not a direct correlation between where special designation areas are managed and air quality, it is expected that the more acreage that is managed with reductions around surface-disturbing activities, the greater the protection to air resources. Therefore, Alternative B would have fewer air quality impacts than Alternative A.

Air quality impacts from renewable energy management actions are generally projected to result in incrementally beneficial effects on both short- and long-term air quality to the extent that fossil fuel combustion emissions are reduced (from alternative energy like coal and natural gas); therefore, reducing GHG emissions that contribute to climate change. Under Alternative B, geothermal off-lease proposals would be considered on a case-by-case basis and non-FERC regulated, small-scale (<10 MW) hydropower applications would be considered on a case-by-case basis. Alternative B allows for biomass permits and ROWs would be considered on a case-by-case basis. Under Alternative B, the Solar PEIS and ROD excluded all Arcata and Redding FO lands from variance areas and SEZs for utility-scale facilities due to low resource potential (i.e., projects with capacities of 20 megawatts or greater that generate electricity that is delivered into the transmission grid). Solar developments of less than 20 megawatts may be considered in the planning area if it is consistent with the land use management prescription, other management decisions for the areas where the development is sited in and would be subject to site-specific NEPA analysis. Solar facilities would not be permitted in areas managed as VRM Class I, areas managed for cultural setting, or areas that are managed as ROW exclusion. Under Alternative B, there would be no designated leasing areas for wind in the planning area. Wind applications would be considered on a case-by-case basis and in accordance with the Wind PEIS and ROD (BLM 2005d), but certain areas, such as LSRs, lands with wilderness characteristics managed as a priority, ACEC with cultural values, riparian management areas, wetlands and waters of the US, would not be considered for wind development. Under Alternative B, the Bureau of Ocean Energy and Management (BOEM) has jurisdiction for wave and offshore energy development, and they would be the responsible agency for issuance of

renewable energy leases, easements, and ROW pertaining to wave and offshore energy development projects. The BLM would collaborate and coordinate with the BOEM to ensure these actions are compatible with existing uses on the BLM lands, management, and protections of coastal lands. There are no specific acreages for open geothermal development, hydropower applications, biomass permits and ROWs, solar, wind, or wave and offshore energy development. Therefore, there is no way to determine which alternative would provide the least opportunity to develop renewable energy, and, therefore, may provide the least protections for air quality. Because Alternative A and Alternative B have comparable areas open to renewable energy development, the impact on air quality would be similar in magnitude for these alternatives. The potential long-term reduction of fossil fuels would also be expected to be similar in magnitude. Similarly, Alternative B short-term air quality impacts from construction emissions, including fugitive dust, vehicle exhaust emissions, and CO₂ emissions from reduced carbon sequestration, would depend on the level of development and land disturbance that occurs.

Livestock grazing actions would result in localized air quality impacts, including windborne particulates from exposed soils as vegetation is removed by livestock (fugitive dust emissions) and methane as a byproduct of the animals. Alternative B would have 232,800 acres available for livestock grazing, which is 1.6 percent of the total surface landownership in the NCIP Planning Area. Alternative B has 1.3 times more acreage available for grazing than Alternative A. While 232,800 acres would be available to livestock grazing, only 62,000 acres would continue to be managed as grazing allotments under Alternative B. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP. Because annual vegetation production, actual use levels by livestock, and patterns of distribution of livestock vary, the impacts on air quality, fugitive dust, and methane emissions would be speculative. Additionally, even though, there are differences between the alternatives in acres open to grazing, factors like whether an area is suitable for grazing, the appropriate stocking level, and general interest in the public lands for grazing would likely mean that actual differences in livestock grazing authorizations or number of livestock on the landscape would not be appreciably different among alternatives. For these reasons, impacts are expected to be similar. However, given that the Alternative B lands available to grazing are less than 1.6 percent of the total NCIP Planning Area acreage, livestock grazing will likely have negligible impacts on air quality.

Under Alternative B, 308,400 acres would be designated as OHV limited and 73,600 acres would be closed to vehicle travel, which is the same as under Alternative A. Fugitive dust and vehicle combustion exhaust due to vehicle travel would be dependent on the number and types of vehicles and the types of travel surfaces used by the vehicles, but due to the similarities between the area closed to vehicle travel, there would be little difference between Alternative A and Alternative B.

Alternative C

Appendix F contains BMPs which would apply to internal BLM projects and BLM permitted activities to minimize impacts on air quality. There are no decisions for lands with wilderness characteristics common to all alternatives except generally to ensure allowable uses are consistent with the goals and objectives for managing lands to preserve wilderness characteristics. Under Alternative C, 5,840 acres would be managed to protect wilderness characteristics. Eliminating these acres from construction of new roads and the associated vehicle traffic would reduce particulate and exhaust emissions in the planning area compared with Alternative A, since under the Alternative A there would be no lands managed with wilderness characteristics as a priority. While there is likely not a direct correlation of managed acreage

to air quality, it is expected that the more acreage that is managed as lands with wilderness characteristics, the greater the protection to air resources due to reduced surface disturbance.

Mineral actions must provide opportunities for environmentally responsible exploration and development of leasable mineral and energy resources subject to appropriate BLM policies, laws, and regulations. Under Alternative C, 117,700 acres would be closed to mineral leasing, which is 1.9 times more than the 61,300 acres which would be closed to mineral leasing in Alternative A. Under Alternative C, 167,800 acres would be closed to mineral materials development (BLM surface), which is 2.0 times more than Alternative A acreage. The acres closed to locatable mineral entry are the same under each alternative. Closing these acres to mineral leasing and development would reduce potential new leases or developments, which in turn could reduce fugitive dust from surface disturbance and vehicle exhaust emissions in the planning area, as well as VOC and HAP emissions from glycol dehydrators, storage tanks, process piping fugitive emissions from facility components, pneumatic controllers, natural gas venting, and other ancillary sources. With more acres closed to mineral development, overall Alternative C would have fewer air quality impacts than Alternative A.

Air quality impacts from special designations are generally projected to result in localized incrementally beneficial effects on both short- and long-term air quality to the extent that surface disturbance from construction activities, new roads, and traffic would be reduced or eliminated within ACECs, WSRs, WSAs, and lands with wilderness characteristics where wilderness is managed as priority. Under Alternative C, 42,430 acres would be managed as ACECs, which is less than the acreage of Alternative A by 22 percent. Alternative C and Alternative A both have 58,490 acres designated as Section 603 WSAs; no Section 202 WSAs would be identified under Alternative C. Alternative C would manage 66.2 miles of WSRs, and Alternative A would have 253.8 miles of WSRs. More acreage would be managed as ACECs, WSAs, and WSRs, the greater the protection to air resources due to the reduction in surface disturbance and re-entrained road dust from traffic, the greatest improvement would likely be a reduction of particulates (fugitive dust) in and near the designated areas. While there is likely not a direct correlation of management of special designation areas to air quality, it is expected that the more acreage that is managed as lands where wilderness is managed with reductions around surface-disturbing activities, the greater the protection to air resources. Therefore, Alternative A would have fewer air quality impacts than Alternative C.

Air quality impacts from renewable energy management actions are generally projected to result in incrementally beneficial effects on both short- and long-term air quality to the extent that fossil fuel combustion emissions are reduced (from alternative energy like coal and natural gas); therefore, reducing GHG emissions that contribute to climate change. Under Alternative C, geothermal off-lease proposals would be considered on a case-by-case basis and non-FERC regulated, small-scale (<10 MW) hydropower applications would be considered on a case-by-case basis. Alternative C allows for biomass permits and ROWs would be considered on a case-by-case basis. Under Alternative C, the Solar PEIS and ROD excluded all BLM-administered lands from variance areas and SEZs for utility-scale facilities due to low resource potential (i.e., projects with capacities of 20 megawatts or greater that generate electricity that is delivered into the transmission grid), except solar developments of less than 20 megawatts may be considered in the planning area if it is consistent with the land use management prescription. Other management decisions for the areas where the development is sited and would be subject to site-specific NEPA analysis. Solar facilities would not be permitted in areas managed as VRM class I, areas managed for cultural setting, or areas that are managed as ROW exclusion. Under Alternative C there would be no

designated leasing areas for wind in the planning area. Wind applications would be considered on a case-by-case basis and in accordance with the Wind PEIS and ROD (BLM 2005d), but certain areas such as LSRs, lands with wilderness characteristics managed as a priority, ACEC with cultural values, riparian management areas, wetlands and waters of the US, would not be considered for wind development. Under Alternative C the BOEM has jurisdiction for wave and offshore energy development, and they would be the responsible agency for issuance of renewable energy leases, easements, and ROWs pertaining to wave and offshore energy development projects. The BLM would collaborate and coordinate with the BOEM to ensure these actions are compatible with existing uses on the BLM lands, management, and protections of coastal lands. There are no specific acreages for: open geothermal development, hydropower applications, biomass permits and ROWs, solar, wind, or wave and offshore energy development. Therefore, there is no way to determine which alternative would provide the least opportunity to develop renewable energy and, therefore, may provide the least protection for air quality. Because Alternative A and Alternative C have comparable areas open to renewables development, the air quality impact is expected to be similar in magnitude among these alternatives. Because Alternative A and Alternative C have comparable areas open to renewables development, the potential long-term reduction of fossil fuels is expected to be similar in magnitude. Similarly, Alternative A and Alternative C short-term air quality impacts from construction emissions, including fugitive dust, vehicle exhaust emissions, and CO₂ emissions from reduced carbon sequestration, would depend on the level of development and land disturbance that occurs.

Livestock grazing actions are generally projected to result in localized air quality impacts, including windborne particulates from exposed soils as vegetation is removed by livestock (fugitive dust emissions) and methane as a byproduct of the animals. Alternative C has 271,800 acres available for livestock grazing, which is 1.6 percent of the total surface landownership in the NCIP Planning Area. Alternative C has 1.5 times the acreage of Alternative A. While 271,800 acres would be available to livestock grazing, only 64,500 acres would continue to be managed as grazing allotments under Alternative C. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP. Because annual vegetation production, actual use levels by livestock, and patterns of distribution of livestock vary, the impacts on air quality, fugitive dust, and methane emissions would be speculative. Additionally, even though, there are differences between the alternatives in acres open to grazing, factors like whether an area is suitable for grazing, the appropriate stocking level, and general interest in the public lands for grazing would likely mean that actual differences in livestock grazing authorizations or number of livestock on the landscape would not be appreciably different among alternatives. For these reasons, impacts are expected to be similar. However, given that the Alternative C lands available to grazing are less than 1.6 percent of the total NCIP Planning Area acreage, livestock grazing will likely have negligible impacts on air quality.

Under Alternative C travel and transportation actions, 323,300 acres would be OHV limited and 58,800 acres would be closed to vehicle travel, which is the same as the Alternative A acreages. Air quality impacts, fugitive dust and vehicle combustion exhaust due to vehicle travel, would be dependent on the number and types of vehicles and the types of travel surfaces used by the vehicles, but due to the similarities between the area closed to vehicle travel there would be little difference between Alternative A and Alternative C.

Alternative D

Appendix F contains BMPs which would apply to internal BLM projects and BLM permitted activities to minimize impacts on air quality. There are no decisions for lands with wilderness characteristics common to all alternatives, except generally to ensure allowable uses are consistent with the goals and objectives for managing lands to preserve wilderness characteristics. Under Alternative D, 11,570 acres would be managed to protect wilderness characteristics. Eliminating these acres from construction of new roads and the associated vehicle traffic would reduce particulate and exhaust emissions in the planning area compared with Alternative A, since under the Alternative A there would be no units managed as lands with wilderness characteristics. While there is likely not a direct correlation of managed acreage to air quality, it is expected that the more acreage that is managed as lands with wilderness characteristics, the greater the protection to air resources due to reduced surface disturbance.

Mineral actions must provide opportunities for environmentally responsible exploration and development of leasable mineral and energy resources subject to appropriate BLM policies, laws, and regulations. Under Alternative D, 164,200 acres would be closed to mineral leasing, which is 2.7 times the acreage closed to mineral leasing for Alternative A. Under Alternative D, 209,600 acres would be closed to mineral materials development (BLM surface), which is 2.6 times the Alternative A acreage. The acres closed to locatable mineral entry are the same under each alternative. Closing these acres to mineral leasing and development would reduce potential new leases or developments, which in turn could reduce fugitive dust from surface disturbance and vehicle exhaust emissions in the planning area, as well as VOC and HAP emissions from: glycol dehydrators, storage tanks, process piping fugitive emissions from facility components, pneumatic controllers, natural gas venting, and other ancillary sources. With more acres closed to mineral development, overall Alternative D would have less air quality impacts than Alternative A.

Air quality impacts from special designations are generally projected to result in localized incrementally beneficial effects on both short- and long-term air quality to the extent that surface disturbance from construction activities, new roads, and traffic would be reduced or eliminated within: ACECs, WSRs, WSAs, and lands with wilderness characteristics where wilderness is managed as priority. Under Alternative D, 87,890 acres would be managed as ACECs, which is 1.6 times the acreage of Alternative A. Alternative D would manage 58,490 acres of Section 603 WSAs and 540 acres of Section 202 WSAs. Alternative D would manage 199.2 miles of WSRs while Alternative A would manage 253.8 miles of WSRs. It is expected that the more acreage managed as ACECs, WSAs, and wild and scenic rivers, the greater the protection to air resources due to the reduction in surface disturbance and re-entrained road dust from traffic, the greatest improvement would likely be a reduction of particulates (fugitive dust) in and near the designated areas. While there is likely not a direct correlation between special designations and air quality, it is expected that the more acreage that is managed with reductions around surface-disturbing activities, the greater the protection to air resources. Therefore, Alternative D would have fewer air quality impacts than Alternative A.

Air quality impacts from renewable energy management actions are generally projected to result in incrementally beneficial effects on both short- and long-term air quality to the extent that fossil fuel combustion emissions are reduced (from alternative energy like coal and natural gas); therefore, reducing GHG emissions that contribute to climate change. Under Alternative D, geothermal off-lease proposals would be considered on a case-by-case basis and non-FERC regulated, small-scale (<10 MW) hydropower applications would be considered on a case-by-case basis. Alternative D allows for biomass permits and ROWs would be considered on a case-by-case basis. Under Alternative D, the Solar PEIS and ROD

excluded all RFO and AFO lands from variance areas and SEZs for utility-scale facilities due to low resource potential (i.e., projects with capacities of 20 megawatts or greater that generate electricity that is delivered into the transmission grid), except solar developments of less than 20 megawatts may be considered in the planning area if it is consistent with the land use management prescription. Other management decisions for the areas where the development is sited and would be subject to site-specific NEPA analysis. Solar facilities would not be permitted in areas managed as VRM Class I, areas managed for cultural setting, or areas that are managed as ROW exclusion. Under Alternative D there would be no designated leasing areas for wind in the planning area. Wind applications would be considered on a case-by-case basis and in accordance with the Wind PEIS and ROD (BLM 2005d), but certain areas such as LSRs, lands with wilderness characteristics managed as a priority, ACEC with cultural values, riparian management areas, wetlands and waters of the US, would not be considered for wind development. Under Alternative D the BOEM has jurisdiction for wave and offshore energy development, and they would be the responsible agency for issuance of renewable energy leases, easements, and ROWs pertaining to wave and offshore energy development projects. The BLM would collaborate and coordinate with the BOEM to ensure these actions are compatible with existing uses on BLM lands, management, and protections of coastal lands. There are no specific acreages for: open geothermal development, hydropower applications, biomass permits and ROWs, solar, wind, or wave and offshore energy development. Therefore, there is no way to determine which alternative would provide the least opportunity to develop renewable energy and, therefore, may provide the least protection for air quality. Because Alternative A and Alternative D have comparable areas open to renewables development, the air quality impact is expected to be similar in magnitude among these alternatives. Because Alternative A and Alternative D have comparable areas open to renewables development, the potential long-term reduction of fossil fuels is expected to be similar in magnitude. Similarly, Alternative A and Alternative D short-term air quality impacts from construction emissions, including fugitive dust, vehicle exhaust emissions, and CO₂ emissions from reduced carbon sequestration, would depend on the level of development and land disturbance that occurs.

Livestock grazing actions are generally projected to result in localized air quality impacts, including windborne particulates from exposed soils as vegetation is removed by livestock (fugitive dust emissions) and methane as a byproduct of the animals. Alternative D has 188,600 acres available for livestock grazing, which is 1.6 percent of the total surface landownership in the planning area. Alternative D has 1.5 times the acreage of Alternative A. While 188,600 acres would be available to livestock grazing, only 59,000 acres would continue to be managed as grazing allotments under Alternative D. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP. Because annual vegetation production, actual use levels by livestock, and patterns of distribution of livestock vary, the impacts on air quality, fugitive dust, and methane emissions would be speculative. Additionally, even though, there are differences between the alternatives in acres open to grazing, factors like whether an area is suitable for grazing, the appropriate stocking level, and general interest in the public lands for grazing would likely mean that actual differences in livestock grazing authorizations or number of livestock on the landscape would not be appreciably different among alternatives. For these reasons, impacts are expected to be similar. However, given that the Alternative D lands available to grazing are less than 1.6 percent of the total planning area, livestock grazing would likely have negligible impacts on air quality.

Under Alternative D travel and transportation actions, 320,600 acres would be OHV limited and 61,500 acres would be closed to vehicle travel, which is less than 1 percent different than the Alternative A acreage. Air quality impacts, fugitive dust, and vehicle combustion exhaust due to vehicle travel would be dependent on the number and types of vehicles and the types of travel surfaces used by the vehicles, but

due to the similarities between the area closed to vehicle travel there would be little difference between Alternative A and Alternative D.

Cumulative Impacts

Past and present actions affecting air quality in the planning area are described in the affected environment section above and include weather and climate (particularly drought) and population growth. The cumulative impacts analysis for air quality and climate change includes the planning area airshed within the Redding and Arcata FOs and it considers historic events and activities, ongoing trends, and reasonably foreseeable future actions. The analysis considers the combination of human activities, natural events, and exacerbating effects associated with climate change.

Soils management actions in the planning area plan to increase vegetation cover and lower overall surface/soil disturbance. These would be incremental site-specific reductions in windborne particulates from reduced erosion of exposed soils as vegetation cover improves over time, as well as decreased CO₂ due to carbon sequestration of the vegetation cover. To minimize cumulative impacts, to the extent possible, modifications to the landscapes such as soil disturbance from fire, vegetation cover management, and climate change would be monitored and this information would be used to prioritize stabilization and rehabilitation to protect human health/safety, important resource values, and the functions of critical ecosystems.

Air quality impacts from special designations are generally projected to result in localized incrementally beneficial effects on air quality to the extent that surface disturbance from construction activities, new roads, and traffic would be reduced or eliminated within ACECs, WSRs, WSAs, and lands with wilderness characteristics where wilderness is managed as priority but would be near the designated areas.

Management strategies related to renewable energy including geothermal, hydropower, biomass, solar, wind, wave, and offshore energy development cumulatively, is generally expected to have a beneficial impact by helping to reduce GHG emissions from fossil fuels. However, land disturbance associated with renewable energy projects may have an adverse impact on the resources' ability to adapt to climate change by reducing natural buffer systems.

The planning area has been impacted by historic mining and mineral activities that impacted air quality and climate change. Based on current trends, mineral leasing and mineral materials activities are generally expected to remain minimal within the area, with the exception of ongoing mineral materials. These would have air quality impacts including fugitive dust and vehicle exhaust emissions from construction and operations; vehicle travel and reclamation activities; fuel combustion emissions from drilling, completions, compressor and oil pump engines, flares, combustors, and heaters; and VOC and HAP emissions from glycol dehydrators, storage tanks, process piping fugitive emissions from facility components, pneumatic controllers, natural gas venting, and other ancillary sources. There are no known fractured quarry rock and aggregate mines.

Impacts from vegetative community actions would likely be small and most noticeable in a cumulative fashion when coupled with other management actions. Potential effects from these management decisions include improved vegetative cover in many areas, which would result in site-specific reductions in windborne particulate from reduced erosion of exposed soils. Additional vegetation cover would provide

carbon uptake, increasing the natural sequestration of carbon because the vegetation acts as a sink by removing CO₂ from the atmosphere.

Wildfire frequency is expected to increase due to recurring and increasingly severe droughts caused by climate variability. Drought may also affect ecosystem health, which consequently makes forests more vulnerable to wildfire. Reasonably foreseeable future actions that affect surface disturbance would cause minimal contribution of PM₁₀ emissions to cumulative air quality impacts on the planning area. Areas around the planning area would continue to be managed with allowance for oil and gas development and OHV use, and these would have the potential to contribute to the mobile, fuel combustion and industrial emissions which are the main sources of pollutants in the airshed. Cumulatively, these actions would continue to impact air quality consistent with current trends. These trends, based on past monitoring, indicate that cumulative air quality impacts have the possibility to cause NAAQS exceedances of ozone that could impact the planning area. Each alternative would contribute to ozone, PM₁₀, and GHG impacts through continued OHV use, wildfire, and prescribed fire for vegetation management. Incremental contributions from motorized use on cumulative air quality impacts would depend on how much recreational visitation occurs at a given time and has the potential to be high during peak recreational use periods. Incremental contributions from wildfire and prescribed fire would depend on wildfire frequency and intensity and level of prescribed fire utilized for vegetation treatment. Impacts from prescribed fire and other vegetation treatments would often mitigate and lessen the impacts from increasingly frequent and intense wildfire. In terms of GHGs, the contributions from Alternative A, Alternative B, Alternative C, and Alternative D to cumulative impacts would be low. However, all alternatives would contribute cumulatively to global GHG emissions from other sources. GHG emissions are linked to changes in climate, which could impact the planning area. These changes could include higher average temperatures and more severe drought conditions. Increased concern over GHGs and global warming issues could lead to future federal and state regulations limiting the emission of associated pollutants.

D.2.2 Soils

Issue Statements

- How would the alternatives reduce or prevent sedimentation, erosion, and soil degradation resulting from surface-disturbing activities?
- How would the alternatives affect soil quality?
- How would the alternatives affect areas of sensitive or fragile soils?

Affected Environment

Soils are a living system consisting of nutrient and hydrologic cycles, energy flows, and other ecological processes. Soils vary greatly across the planning area, with soil physical and morphological characteristics reflecting differences in topography (elevation, slope, and aspect), soil parent material (geology), living organisms (including soil organisms, wildlife, and vegetation communities), climate, and time. Variability in soil characteristics strongly influences land use and management as well as the relative resilience of soils to impacts from land use activities. Because of the complex topography and geology of the planning area, differences in soil properties can be observed within short distances. Soils in the planning area provide the foundation for habitat (such as, vegetation or wildlife) and for resource uses (such as, livestock grazing or recreation). Soil properties drive decision-making for optimal siting of infrastructure such as roads, trails, and facilities.

A number of sensitive soil resources occur within the decision area that require special management consideration.

Highly erodible soils. In general, soils developed on highly weathered rock of the Coast Ranges are prone to high rates of erosion, particularly when the soils are void of vegetation and/or on steep slopes or unstable terrain.

Decomposed granite soils. Certain circumstances heighten the risk for soil erosion, such as areas underlain by decomposed granitic rocks in the Grass Valley Creek watershed in the Trinity River drainage.

Ultramafic and Serpentine Soils. Soils developed on ultramafic rocks are known for their high concentrations of heavy metals, particularly chromium and nickel (Morrison et al. 2009, 2015), that can be toxic to most plants, but also support unique vegetation communities with rare species. Ultramafic soils commonly contain NOA particles that are needle-like mineral fibers that have been classified as state and federal carcinogens (Frazell et al. 2009).

Special Status Farmlands. Certain high-quality farmlands are protected under the Farmland Protection Policy Act (FPPA). For the purpose of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

Biocrusts and cryptobiotic soils. Biocrusts or cryptobiotic soils are complex matrices of mosses, lichens, cyanobacteria, algae, and other microorganisms that protect soils from erosion (Williams et al. 2012). Biocrusts are fragile and extremely susceptible to wind and water erosion, once their surface crusts have been disrupted (Belnap et al. 2007). While attempts to restore or transplant biocrusts have been attempted, large scale restoration efforts remain very challenging (Chiquoine et al. 2016).

Anthropic Soils. Anthropogenic soils have been constructed or strongly manipulated by humans. In some cases, these soils may be important cultural resource areas, while in other cases they may present sources of contamination or hazardous materials (e.g., old landfills and reclaimed mine tailings).

Environmental Consequences

Several management actions are anticipated to have impacts on soil resources, which are discussed below. Actions that could impact soil resources include ground-disturbing activities associated with: ROWs granted, vegetation and forest management, wildland fire management, livestock grazing, recreation management (including camping, hiking, OHV use, and mountain biking), special land use designation areas, and mineral leasing, entry, and disposal.

Soil resource impacts are generally greater with increasing area and magnitude of disturbance. Acreage of potential surface disturbance can serve as a comparative tool for evaluating potential soil resource impacts between various management strategies and alternatives.

The potential impacts on soil resources of various management activities proposed under the alternatives would vary depending on the nature and magnitude of ground disturbance and/or restorative action proposed, acreage of planned activities, proximity to sensitive resources, and existence of legacy impacts from previous land use(s). As presented in **Table 2-1**, some difference in potential surface-disturbing activities would occur between the four alternatives (based on acreage), which would result in varying

levels of potential impacts on soil resources. For the purposes of comparison of impacts on soil resources between the four alternatives, acreage is used as a proxy for the estimate of potential soil impacts.

Impacts Common to All Alternatives

Land management actions would directly and indirectly impact soil resources within the NCIP decision area, including activities associated with: ROW development, special land use designations, vegetation and forest management, wildland fire management, livestock grazing, recreation management, and mineral leasing. Ground-disturbing and vegetation removal activities would increase 1) potential for loss or impairment of soil structure and function and 2) susceptibility of soils to wind and water erosion. Associated impacts could include soil compaction, loss or displacement of topsoil or protective soil surface features (biotic soils or desert pavement), mixing of soil horizons, decreased soil stability, increased mass wasting potential, nutrient cycling and ratio impacts, and interference with natural hydrologic properties (e.g., infiltration, runoff, and gas exchange). Loss of natural soil structure and function can create a feedback loop that further compounds losses of native vegetation, topsoil, and soil productivity through time. Impacts from ground-disturbing activities on soil resources may be mitigated through applicable stipulations or measures that address site-specific environmental concerns, and standard BMPs utilized by BLM for project-level work. Restorative activities conducted in disturbed areas, including reclamation or restoration of natural soil surface or subsurface features, vegetation and forest communities, and geomorphology, have the potential to improve soil ecological function and prevent further soil loss or degradation.

Indirect effects from ground-disturbing and restorative activities would impact areas downslope or downwind from the decision area processes, such as movement of sediment via water (rivers/streams) or air (dust). The relative magnitude of indirect impacts is characterized in greater detail in the Water Resources (**Section D.2.3**) and Air Quality and Climate (**Section D.2.1**) sections. Specific impacts from specific management activities are described below.

Sensitive soils are generally more susceptible to ground-disturbing activities and amplified impacts could occur. Highly erodible soils and decomposed granites are especially prone to surface erosional losses and mass wasting. Ultramafic and serpentine soils support unique vegetation communities and rare plants that could be challenging to restore after surface-disturbing activities. If destabilized, these soils can be a concern to public health, as the soils contain concentrations of heavy metals (Morrison et al. 2009, 2015) and naturally occurring asbestos (Frazell et al. 2009). Special status or protected farmlands are highly productive lands that if developed for non-farming uses would reflect a considerable opportunity cost with a loss of soil productivity. Biocrusts are fragile and extremely susceptible to physical disruption from foot traffic, grazing, OHVs, and mechanized equipment, destabilizing surface soils. Biocrusts remain challenging to restore (Chiquoine et al. 2016). Anthropogenic soils may require special consideration as cultural resource areas, or they could present sources of contamination that require special management consideration.

The impacts of management activities on soil resources vary based on the nature and magnitude of ground disturbance or restorative action and the legacy impacts from previous land use. The following sections summarize the expected impacts of foreseeable management actions and associated activities.

Land allocations within the decision area would determine the compatible land use and ROW authorizations that would ultimately determine potential impacts on soil resources. ROW authorizations that are foreseeable for areas that are open to ROWs or ROW avoidance areas include, but are not

limited to, the following: construction of roads, facilities and/or structures; vegetation removal or manipulation; overland travel or trampling; vehicle use in authorized areas; grading; and excavation.

Generally, for land allocations the greater the size of the area and/or the more ground-disturbing activities that are authorizable, the greater the potential impact on soil resources from activities such as: vegetation removal, disturbance of natural soil surface features, soil excavation, soil erosion, construction of facilities, and loss of soil productivity. Areas that are managed as ROW exclusion areas would be eliminated from new ROW development, which would, therefore, eliminate additional impacts on soils from ROW-related ground-disturbing activities. Areas that remain or become ROW avoidance areas would have greater potential for future soil resource impacts resulting from ground disturbance than exclusion areas; however, avoidance areas would be subject to extended environmental review, site-specific stipulations, and possible requests to relocate facilities. Areas that remain or become open to ROW authorization have the greatest potential for ground-disturbing activities that could impact soil resources with fewer environmental stipulations than avoidance areas. Any approved ROW that causes ground disturbance would be subject to reclamation requirements identified for individual alternatives. While stipulations in areas with sensitive soil resources could be required on a project-specific basis, ground-disturbing activities would be expected to have a greater level of impact on sensitive soils than non-sensitive soil types.

Special designation areas, including designated wilderness, WSAs (both Section 603 and Section 202 WSAs), ACECs, and lands with wilderness characteristics, would generally have protective impacts on soil resources as compared with areas that lack special designation. Wilderness areas would be managed to preserve wilderness character, and, therefore, soil resources would remain in their current state and they would not have the potential to be impacted by most ROW development activities. However, trailheads would be prioritized in wilderness and WSAs, allowing some localized disturbance of soils associated with trail construction. WSAs would be open to many activities, but they would be recommended for withdrawal from locatable mineral entry and development, decreasing the likelihood of soil impacts from mineral activities. ACECs would be managed according to their respective management plans, but they would generally have some restrictions on ground-disturbing activities that would potentially destabilize soils or decrease soil productivity.

Riparian management areas would provide similar incidental protections for soil resources to those discussed for special designation areas above. Under all alternatives, the BLM would require that management actions, including those that could result in ground disturbance and vegetation removal, would not retard attainment of the Northwest Forest Plan (USDA and USDI 1994) Aquatic Conservation Strategy objectives. The objectives would help maintain and restore the physical integrity of the aquatic system, including the shorelines, banks, and streambeds, and thus would help maintain and restore the soils that make up these systems. Riparian management area widths would differ across the alternatives based on the type of aquatic feature and other factors, meaning that the size of the area that would be afforded incidental protections would also vary across the alternatives, as would the resulting potential for soil impacts as described above. Ultimately, there would not be an appreciable difference between the alternatives, in the BLM's ability to manage soil resources in riparian management areas while not retarding attainment of the Aquatic Conservation Strategy objectives.

Desired future conditions for vegetation and forest management emphasize establishment, restoration, and maintenance of sustainable and healthy ecosystems. Restorative activities to reestablish desired

vegetation would generally support long-term protection of soils from erosion and restoration of natural soil structure, function, and productivity. Vegetation and forest management activities that cause ground disturbance or remove or change vegetation structure could cause short-term impacts on soil resources, leading to a temporary increase in soil erosion potential, compaction, or changes to soil structure. For example, invasive or noxious plant treatment and prescribed burns would limit proliferation of treated vegetation. A short-term decrease in vegetation cover could temporarily destabilize soils and increase potential erodibility of soils. If heavy equipment is required for treatments (i.e., timber harvesting or tractors for reseeding), this equipment may further disrupt ground cover and compact or disturb soil surfaces. These would be expected to be short-term impacts, and soil would be expected to stabilize as native or desired vegetation structure is established and natural soil protection (such as vegetation debris built up along soil surfaces) accumulates. As new vegetation becomes established in the long-term, soils would be expected to stabilize and provide for the establishment of native vegetation. Impacts on sensitive soils would likely be amplified depending on the nature of vegetation management activities. For example, some biotic soil organisms are sensitive to herbicide application (Von Reis 2015), very sensitive to any ground disturbance (Belnap et al. 2007) and may be damaged by fire (Johansen 2003).

Wildland fires cause complex impacts on soil resources that involve nutrient cycling dynamics, changes to water infiltration and runoff, and erosion susceptibility (Moody and Martin 2009; Moody et al. 2008; Martin and Moody 2001; Moody and Martin 2001). Fire impacts vary depending on site-specific conditions, including vegetation fire condition class, vegetation community adaptations to fire, burn severity, and pre-burn soil conditions. Loss of vegetation cover and structure from high severity burns dramatically decreases soil cover, exposing soils to wind and water erosion, destabilizing soils and increasing mass wasting susceptibility. Fires may also cause changes to soil chemistry and structure that impact soil productivity and hydrologic function, including development of temporary hydrophobicity and impeded infiltration (Woods et al. 2007). Prescribed fire prescriptions, fuels management, and wildfire suppression can minimize or mitigate some of these soil resource impacts of high intensity fires (by reducing the potential for severe fires), but they may cause some short-term impacts on soils, such as soil compaction or displacement from surface-disturbing wildland fire control and suppression tactics or fuel treatments and altered soil chemistry from chemical retardants.

Livestock grazing management has potential to cause impacts on soil resources. Because the BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP, impacts would be limited to those areas where grazing allotments are active. The level of impacts would depend on the intensity of grazing, range site potential, local climate and weather conditions, and seasonal timing of use. Livestock grazing activities can cause vegetation loss, declines in soil health, and compaction, while construction of Rangeland Improvement Projects could cause ground disturbance and potential compaction and displacement of soils. The four alternatives stipulate grazing management under allotment management plans and rangeland health standards and guidelines, which would monitor and evaluate grazing practices based on soil conditions and land health. These standards, guidelines and plans would prescribe management activities to maintain soil health and mitigate soil productivity losses. These prescriptions could include periods of rest (rotation or deferment) for conservation of lands, fire occurrence, floods, or drought, or imposing utilization limits within grazing allotments to allow ground cover to increase and soil litter to accumulate where appropriate. Adequate ground cover by litter and vegetation would reduce soil erosion and increase infiltration to maintain soil resources, improve soil moisture, and maintain healthy communities of desired vegetation. The most acute areas for impacts would exist where livestock tend to concentrate, such as salt licks, water sources and fence lines. Sensitive soil

types, such as biotic soils or highly erodible soils, would generally be more susceptible to physical impacts from livestock trampling or rangeland improvement construction activities than non-sensitive soil types.

Recreational activities can cause localized impacts on soil resources and indirect impacts across the landscape. Hiking, mountain biking, dispersed camping, and OHV use may cause soil compaction, vegetation trampling, habitat fragmentation, increased weed invasion, and greater susceptibility to soil erosion. As hiking and camping (including dispersed and overlanding) become more popular, trail and campsite widening can occur, magnifying erosion and increasing the area and depth of soil disturbance. Generally, hiking and mountain bike trail use is localized with impacts on soil resources being limited to trailside areas. However, informal user trails, side-country networks, and dispersed human impacts can occur, all of which can result in increased impacts on soil resources.

Similar to camping and mountain biking, the use of OHV on public lands can expand beyond authorized and managed zones and result in increased soil resource impacts. Without adherence to existing and established routes, OHV use can also lead to greater vegetation and soil disturbance (over hiking and mountain biking) because of OHV weight and travel speed. Dispersed camping and overlanding (a blend of car camping and OHV-type use) have a higher likelihood of impacting soil resources due to travel outside of designated camping areas and beyond established OHV routes.

Three types of travel management designations have been defined with variable levels of potential soil disturbance. Areas that are closed to OHV travel would have no OHV-related soil impacts. Areas where OHV travel is limited to existing and designated routes would have some soil impacts, but those impacts would be limited to designated routes, which would limit soil impacts on confined areas where impacts have previously occurred. Areas that are open to OHV travel would allow unrestricted, cross-country OHV use, however, those areas would avoid previously undisturbed soils.

Impacts on soils from development of mineral materials, including entry and disposal, vary based on the longevity and magnitude of surface-disturbing activities and stipulations designed to minimize these impacts. Use of the planning area for mineral materials is low, however, cannot be completely discounted. Potential impacts on soil resources from these activities include: vegetation clearing and exposure of soils to wind or water erosion; changes to infiltration and runoff intensity, volume, and timing; soil contamination; loss of soil features or mixing of horizons; soil compaction; displacement, covering, or loss of soil resources (including irretrievable soil resources losses) to construct roads, pipelines, structures, or mining operations; loss of soil productivity and function; and increased weed infestation. Standardized and project-specific stipulations would mitigate some impacts on soil resources, including reductions to potential soil erosion and losses to soil productivity, however, these stipulations would not eliminate impacts. Requirements for development and implementation of a reclamation plan for any surface-disturbing activities would stabilize surfaces and reduce continued loss of desirable vegetation cover and associated soil erosion. Reclamation activities would include soil replacement and vegetation replanting, returning the site to previous conditions. Impacts on sensitive and special status soils would require additional considerations or mitigation approaches to minimize impacts on these resources, which will reduce the duration of impacts on soils. Current trends, which are discussed in **Table C-1** in **Appendix C**, are likely to continue and demonstrate the relatively minimal mineral development seen in the planning area.

Management designations would partially determine the potential impact of mineral leasing, entry and disposal to soil resources. Areas that are closed to mineral leasing, entry, or disposal and/or are subject

to no surface occupancy would have no new mineral development-related soil impacts. Areas that are open to leasing, entry, or disposal would have the greatest potential for soil impacts because these areas would be open to all authorizable mineral development activities with the fewest stipulations to protect soil resources.

Application of BMPs (**Appendix F**) would reduce potential soil losses or degradation of soil productivity from all of the aforementioned management activities. The level of protection for soils would vary as a function of alternatives and the site- or activity-specific measures employed to maintain, improve or conserve soil and other resources. Some stipulations could include avoidance measures to prevent specific sensitive soils from being directly or indirectly impacted by a management activity. Other measures would be aimed at establishing increasing vegetative ground cover or constructing stormwater infrastructure to reduce soil losses from sheet or rill erosion, head-cuts and gullies, and mass wasting. Reduction in soil losses would further reduce sediment loading to surface water bodies and help to maintain soil health. In some cases, the BLM may establish general performance standards for surface-disturbing activities to demonstrate the efficacy of specific mitigation activities. Hazardous materials' BMPs would be implemented during ground-disturbing activities to minimize potential for soil contamination.

Climate change is expected to strongly influence soil conditions and the magnitude of impacts from various management activities. Climate change is expected to increase soil temperature, further exacerbating drought conditions and low soil moisture during dry periods and leading to changes in vegetation community structure. An amplified hydrologic cycle, with stronger fluctuations in precipitation and more intense precipitation events, is expected to cause flooding, hillslope and stream bank erosion, and potential for mass wasting. Higher intensity wildfires would further reduce cover by desirable vegetation and increase potential for erosion, slope destabilization, and mass wasting.

Continued soil monitoring and data collection would be necessary to measure and assess direct and cumulative impacts on soil resources to ensure the level of soil impacts are maintained at levels that are consistent with management goals and objectives for the NCIP decision area. Monitoring would document activities that contribute to loss of soil productivity, but also activities that increase soil productivity. For example, restorative activities that improve natural vegetation communities would increase soil stability, hydrologic function, and overall soil health. Projects aimed at improving wildlife habitat would further support soil ecological function. Rangeland health assessments and comprehensive sediment source assessments are two tools that BLM utilizes to evaluate soil health. BLM is also required to do implementation monitoring and implement BMPs on a project basis for many ground-disturbing activities pursuant to the Clean Water Act.

Research projects could further support the BLM's management of soil resources within the decision area. ACECs would be prioritized locations for research topics. Ongoing monitoring and research efforts to address land management could be supported by close partnerships with other agencies and organizations, which would have a synergistic effect on the outcomes of any collective efforts.

Alternative A

Alternative A focuses on continuing existing land management practices for: realty ROW, grazing, mineral development, recreation and OHV use, special-designation areas, forestry, fire and fuels management, and vegetation management. Under Alternative A, 186,900 acres would remain available for livestock grazing; however, only 62,600 acres are within active grazing allotments. Because the BLM does not anticipate a

substantial increase in grazing allotment acreage over the life of the RMP, impacts would be limited to those areas where grazing allotments are active. Alternative A would utilize existing soil management approaches to continue to protect soil resources and maintain existing conditions by reducing and preventing erosion and soil compaction and minimizing impacts on sensitive soil areas.

Current management plans do not necessarily require actions for maintaining sensitive soils, restoring areas with soil degradation, nor address legacy conditions although there are some protections in place such as at Grass Valley Creek, for decomposed soil, and minimizing vehicle impacts. Areas with sensitive soils or degraded areas would continue to be at risk for erosion from authorized activities, resource uses, and/or natural disturbance(s). Additionally, existing management actions do not necessarily meet current protection standards, may not take into consideration current technology and mapping, and may not utilize current science for BMPs to address soil erosion and soil resources.

Alternative B

In general, Alternative B would prioritize designated areas for resource protection, strive to minimize overall ground disturbance, and prioritize degraded areas for soil restoration. There would also be fewer acres available for grazing with active grazing allotments (62,000 acres) as compared to Alternative A. Soil erosion and sedimentation is likely to continue in the planning area due to natural processes. The Grass Valley Creek Watershed would be prioritized for sediment reduction and restoration. During future implementation-level travel planning, under Alternative B, redundant routes would be closed to facilitate rehabilitation of sediment impaired areas.

If impacts on biocrusts could occur based on updated mapping/presence of these resources, this impact would be avoided and minimized on a project-specific level with oversight from the BLM at their discretion. Stipulations may be added to projects, such as a requirement for preconstruction survey for biotic crusts, if there is concern for loss or damage by construction activities within the proposed project location. Alternative B would also preclude work within active floodplains (except for mineral materials development and restoration, which is allowable in the floodplain). Soils susceptible to mass failure and sensitive soils would be closed for mineral development.

Alternative B would manage sensitive soils as ROW avoidance areas, and proponents of proposed activities on sensitive soils would be required to incorporate BMPs and mitigation measures to minimize soil erosion and maintain soil stability. Authorized disturbances would include plans for reclamation, and site-specific reclamation actions would reflect the environmental concerns and reclamation potential of the site. This would decrease the magnitude and potential for localized declines in soil health and productivity.

Alternative C

Management of soil resources under Alternative C would be less protective than Alternative B. The primary difference is that Alternative C would allow for mineral materials development in the floodplain on a case-by-case basis if the BLM determines that the activity is consistent with natural resource and cultural resource goals. There would also be more acres available for grazing with active grazing allotments (64,500 acres) as compared to Alternative A. With the exception of mineral leasing, ROW avoidance, and permitted surface-disturbing activities which would be disallows on sensitive soil, Alternative C would not require pre-construction surveys or avoidance of biological soil crusts (BSCs), and would provide an

avenue for use of a stormwater prevention plan and possible BMPs to protect sensitive soil type/areas be determined and specified by the BLM to protect sensitive soil types.

Alternative D

Management of soil resources under Alternative D would be similar to, yet less protective, than Alternative B. The primary difference is that Alternative D would allow for mineral materials development in the floodplain if the BLM determines that the activity is consistent with natural resource and cultural resource goals. There would also be fewer acres available for grazing with active grazing allotments (59,000 acres) as compared to Alternative A.

Comparison of Alternative A, Alternative B, Alternative C, and Alternative D

The comparative analysis below for Alternative A, Alternative B, Alternative C, and Alternative D relies on acreage of potential uses as a proxy for potential surface disturbance and thus potential impact on soil resources. Management options and potential impacts on resources are discussed for the following resources or resource uses: ROW development, vegetation and forest management, wildland fire management, livestock grazing, recreation, mineral resources, and special designation areas (such as wilderness).

Acres open to ROW use (and subsequent surface-disturbing activities) as a result of Alternative A, Alternative B, Alternative C, and Alternative D, are summarized in **Table 2-1** and compared below, as well as a qualitative discussion of management relative to alternatives.

Alternative A allows for 312,000 acres open to ROW authorizations, while Alternative B, Alternative C, and Alternative D would reduce the total acreage available for ROW use. The acreage open for ROW usage under the other three alternatives comparatively range from approximately 108,600 to 121,300 acres. Alternative D (Proposed Alternative) allowing approximately 108,600 acres available for ROW applications.

In addition to areas designated as open to authorizations for ROW use, all alternatives include the use of “avoidance” terminology as a management category, and under Alternatives B, C, and D, this new management category is defined to allow ROW authorization where minimization and avoidance has been maximized, other feasible options do not exist, and a project implements the BLM mitigation and/or minimization measures as determined through project-specific analysis and authorizations. Subsequently, in addition to the 108,600 – 312,000 acres open for ROW use under all action alternatives, there are provisions for additional authorization of approximately 11,300 – 166,400 acres under the “avoidance” category, bringing total acreage open for ROW applications to 247,100 – 323,700 acres. In total, Alternative A remains the least restrictive, allowing 323,700 acres for ROW use (with restriction); Alternative B would be the most restrictive with a total of 247,100 acres available for ROW use; Alternative D would allow an intermediate level with approximately 274,200 acres (with restrictions) for ROW use, and Alternative C is second only to existing conditions (Alternative A) and would allow ROW use (with restrictions) on 288,100 acres.

Under current management plans, Alternative A designates exclusion of 58,500 acres for ROW use (defined as no development activity allowed). In comparison, the other alternatives would have a notable increase in exclusion areas ranging from approximately 94,100 to 135,100 acres, with Alternative B

providing the most restrictive limitations on acreage and Alternative D (Proposed Alternative) allowing a middle ground with approximately 108,100 acres removed/excluded for ROW usage.

Land use authorizations (ROW development **Section D.3.3**) discusses magnitude of impacts and conservation measures within each project alternative. Many ROW areas allow access on existing roads (low impact with minimal soil impacts), while others include new disturbance (i.e., construct powerline corridor), therefore, the acreages in the above references section cannot always be a direct comparison for soil impacts.

Grassland preservation, acres of existing native grasslands and grasslands projected for restoration, wildlands, and areas managed for habitat and forest health, are similar across all project alternatives. The BLM would manage the lands for a heterogeneous network of various habitat types. Landscape management is not anticipated to have a direct effect on soil resources, compared between the alternatives. An acreage calculation of fuels reduction treatment (pre- and post-) is not available, and it is assumed that under the four alternatives there would not be a quantitative difference in potential surface disturbances (and thus impact on soil resources), partially due to the unpredictable nature of acreage where fire may occur in any given year. Pre- and post-fire treatments would be analyzed on a project-specific basis, along with potential impacts on soil resources. Fire prevention activities overall, would have a net benefit to soil resources due to prevention of catastrophic fires, which can result in soil structure impacts, increased soil erosion and mass wasting, volatilization of soil organic carbon, increase in invasive, nonnative species, and challenges with remediation and revegetation post fire. Areas with wilderness characteristics and other special land use designations may have a qualitative difference in ways pre- and post-fire conditions are managed, which is discussed in **Section D.4.8** along with restrictions, best management practices, and mitigations, when applicable.

Acres available for livestock grazing (and subsequent surface-disturbing activities) resulting from Alternative A, Alternative B, Alternative C, and Alternative D, are summarized in **Table 2-1** and compared below, as well as qualitative discussion of management relative to alternatives. Similar to ROW discussion, a direct comparison of livestock grazing based on acreage alone, can conflate potential impacts on soils. Some areas within the broad areas designated available for grazing are in steep, forested terrain, that lack forage, and may not be practical for grazing. Small parcel size, access, and water, and other constraints could limit actual use for areas available for grazing; and therefore, some areas are unlikely to receive a request for a grazing application or be determined suitable for grazing should a request be received.

Alternative B and Alternative D utilize similar management measures such as limiting grazing in ECC on a case-by-case basis, while Alternative C would allow ECCs open to grazing. The less restrictive management strategy from a grazing perspective under Alternative C coupled with an increase in acreage allowed for grazing could result in additional soil impacts (erosion, degradation, and compaction) under Alternative C, although modern management techniques could ameliorate an increase in potential impacts. These impacts would be limited to those areas where grazing allotments are active because the BLM does not anticipate a substantial increase in active grazing allotments. Additionally, modern management techniques would be incorporated at an implementation and project-level basis for new and updated Allotment Management Plans.

Across the four alternatives, Alternative A maintains the status quo, with OHV use limited to existing and designated routes (322,800), while 59,200 acres are closed to OHV use. Under Alternative B, the acreage

closed for OHV travel would be the greatest (73,600 acres) compared with the other alternatives. As a consequence, OHV acreage would have the least impact on soil resources under Alternatives B (up to 308,400 acres). Under Alternative C, acreage for OHV designations would be slightly higher (323,300 acres) than Alternative A and have the largest area among the alternatives and acreage closed for OHV travel would have the higher potential to impact soils among the Alternatives. Alternative D would have slightly less area open to OHV compared to Alternatives A and C, with a total area of 320,600 acres and subsequently 61,500 closed to OHV use.

The differences in acreage between alternatives is unlikely to result in substantial changes to soil resource impacts due to the relatively similar acreages of use, and travel is limited to existing or designated routes; therefore, soil erosion is not likely to be increased or decreased between the alternatives as a direct result of recreational uses.

Furthermore, changes and specific route designations would be made in an implementation-level travel and transportation management planning process following the completion of the RMP, which would take into consideration soil resources if changes in use and acreage were to be considered, as described in Travel and Transportation Management (**Section D.3.7**).

With regard to Special Recreation Management Areas (SRMA) and Extensive Recreation Management Areas (ERMA), Alternative A maintains the current conditions of approximately 40,190 acres under special recreation designations, while Alternative B offers a moderate increase in these types of designations to approximately 45,590 acres, and Alternative C and Alternative D provide a larger increase in special recreation designations to approximately 87,590 and 86,990, respectively. The various acreages are not likely relevant to soil resources as long as changes in surface disturbance do not occur, however, the reader is referred to **Section D.5.4** for further information on magnitude of impacts associated with these management decisions that are not necessarily captured under a strict acreage analysis.

Alternative B would manage the largest area out of the four alternatives for the protection of wilderness characteristics (approximately 21,970 acres), whereas Alternative A would not identify management actions specific for the protection of wilderness characteristics (see **Table 2-1**). Alternative C would manage only 5,840 acres as wilderness, while Alternative D proposes to manage 11,570 acres as wilderness. However, Alternative C and Alternative D would also manage some additional areas that exhibit wilderness characteristics, yet management plans would emphasize multi-uses (Alternative C includes an additional 28,220 acres and Alternative D includes 21,950 acres for multi-use/multi benefit). Restrictions on surface-disturbing activities on lands with wilderness characteristics would indirectly protect soil resources in these areas from surface-disturbing activities and they would prevent a decline in soil health and productivity. Management of areas with wilderness characteristics would include ROW exclusions and restrictions on travel, energy development, and other surface-disturbing activities. Additionally, considering adjacent lands to identify new qualifying areas for lands with wilderness characteristics could reduce effects on soil resources in other areas in the future.

Alternative A would manage 54,600 acres as ACECs, which would result in restrictions on surface-disturbing activities from OHV use, ROW authorizations, forest products use, and mineral development (see **Table 2-1**). Alternative B and Alternative D propose the highest area managed as ACECs with 88,820 acres and 87,890 acres, respectively. Due to the larger acreage of ACEC management under Alternative B and Alternative D than under Alternative A, more soil resources in the ACECs would be protected

from surface-disturbing activities. Alternative C offers a decrease in level of ACEC management with 42,430 acres designated under this management protection.

Mineral resource management activities are summarized in **Table 2-1**. Alternative B and Alternative D are similar in providing measures where soils susceptible to mass failure and sensitive soils would be closed for mineral leasing. In addition, unique to Alternative B includes a special measure where previously degraded riparian zones that have been restored would also be closed to leasable mineral leasing.

Cumulative Impacts

The cumulative impacts analysis for soil resources is restricted to the NCIP planning area and it considers historic events and activities, ongoing trends, and reasonably foreseeable future actions. The analysis considers the combination of human activities, natural events, and exacerbating effects associated with climate change.

The planning area has been impacted by historic mining and mineral activities that impacted soil quality and productivity. Based on current trends, mineral leasing and mineral materials activities are generally not expected to create a substantial increase in soil disturbance within the area, with the exception of ongoing mineral materials. There are no known fractured quarry rock and aggregate mines.

Water resource projects aimed at restoring natural hydrological function within the planning area (e.g., Lower Klamath Dam Removals, Trinity River Restoration Program, and Corral Gulch Restoration Program) would restore natural flow variability and floodplain function; raise the groundwater table; increase streamflow; decrease water temperatures; and decrease erosion and sedimentation, which would increase soil water availability in some areas, enhance natural vegetation communities, and increase soil productivity and ecological function.

Vegetation communities would continue to be strongly influenced by climate change, increased frequency and intensity of wildfires, insect and disease pests, weed infestations, and ongoing drought conditions. Some vegetation communities are projected to drastically change in response to these changes, including shifts in evergreen forests and expansion of grassland communities in some areas. Any dramatic shifts in vegetation community structure, as would occur in responses to catastrophic fires and/or landslides, would be accompanied by soil instability and erosional losses until landscapes reach equilibrium under new vegetation communities. Vegetation treatments aimed at reducing hazardous fuels and undesirable vegetation would be aimed at creating more resilient landscapes with more stable soil surfaces that are less prone to erosional losses and mass wasting.

Trends in livestock grazing would depend on a number of environmental factors; however, the BLM would continue to administer rangeland health assessments to ensure no substantial soil degradation occurs in response to changes in range management.

ROW leases associated with infrastructure development projects are expected to increase in the future, and they would include projects such as utility lines, access roads, and waterlines. No known wind or solar energy projects have been identified for the planning area. Any ongoing or proposed ROW development projects would increase the total footprint of disturbed soils within the planning area, which would have an additive affect from any vegetation removal/manipulation, grading or excavation, and soil displacement. Effects would include temporary loss of soil through erosion and decreased soil productivity.

Recreation and visitor use are expected to increase in the future. The activities identified as having growth potential include hiking, backpacking, mountain biking, OHV, and applications for special recreational permits and recreational use permits. Impacts from all of these activities would primarily be localized to existing and established trails and routes, so losses to soil resources would be limited to those areas. However, travel off of designated or existing routes and creation of social trails has occurred and would likely occur within the planning area, which would expand the footprint of soil disturbance and potential for soil erosional losses.

D.2.3 Water Resources

Issue Statements

- How would the alternatives affect water quality and quantity in the planning area?
- How would the alternatives ensure water quality standards in the planning area are met?
- How would the alternatives affect the health of springs, seeps, and intermittent streams?

Affected Environment

The BLM manages on-the-ground activities to help minimize impacts on water resources both for resource values (e.g., watershed function, wildlife, fisheries, and riparian systems) within a framework of applicable federal water laws and agency policies. The BLM complies with applicable State water laws in the management of on-the-ground activities, as stated in the BLM Water Rights Manual Section 1.2.B (BLM 2013). States have primary authority and responsibility for the allocation and management of water resources within their borders except as otherwise specified by Congress. The BLM cooperates with State governments and complies with applicable state laws to the extent consistent with federal law to acquire, perfect, protect, and manage water rights to protect water uses identified for public land management purposes. The BLM ensures that land use authorizations granted to third parties contain appropriate terms and conditions to protect BLM-administered water rights and uses. Third-party uses of appropriated water on BLM-administered lands that operate under BLM permitting authority shall comply with applicable state laws, federal laws, and executive orders.

The planning area encompasses a variety of large rivers with heavily regulated flow, unregulated free-flowing watercourses, constructed ponds, and seeps and springs. Impacts on water quality and water supply are ongoing due to water management methods, development decisions, changes in vegetation regimes, and climate change.

The primary sources of flowing surface water in the planning area are the various controlled and uncontrolled rivers and creeks, such as the Mattole River, the Eel River and its major tributaries, Mad River, Trinity River, Klamath River, and many other water courses as described in the AMS (BLM 2021a, Section 2.2.15). Reservoirs and lakes include Shasta Lake and many other operable reservoirs, as well as innumerable smaller natural and man-made lakes and ponds that are both publicly- and privately-owned. Springs and freshwater seeps are critically important water sources, especially during dry summer conditions when water resources importance is most critical and at-risk. They are often the source of stream flows, provide cold-water habitat for temperature-dependent species, and support unique vegetation communities. Groundwater is used for public and private water supplies and for agriculture, irrigation, and industry. In many areas, groundwater resources are intricately linked with surface flows, commonly encountered in areas of extensive stream deposits (alluvium) and valleys.

Water bodies can be classified as either flowing (lotic) or non-moving waters (lentic), such as lakes and ponds. Many of the lentic waterbodies within the planning area are listed in the Fish and Aquatic Resources section (**Section D.2.6**). Water quality and quantity discussions below would apply to both types of waterbodies.

Water Quantity

Water quantity, particularly during late summer, is a key limiting factor for many aquatic organisms. Several stressors contribute to low flows seen across the planning area include vegetative changes, climate change (drought), withdrawals for various uses, and channel aggradation.

In addition to decreased summer streamflow across the planning area, many of the larger rivers are regulated for flood control, water rights, or managed for hydropower. Water quantity in regulated rivers depends on a variety of regulatory mechanisms that guide the operation of hydropower facilities and associated flow releases. The California State Water Resources Control Board manages water resources both for resource values (for example, watershed function, wildlife, fisheries, and riparian systems) and beneficial uses (such as, municipal water supply, recreation) as defined by the within a framework of applicable state and federal water laws and agency policies.

Late summer streamflow is impaired in many smaller stream systems as a result of development for residential, agricultural, and industrial purposes. In addition to diversions, changes in the vegetation composition have also changed the evapotranspiration characteristics across many watersheds, particularly where timber harvest has occurred, and re-grown stands may be more densely stocked with younger, more vigorous vegetation. Additionally, wildfires have altered the evapotranspiration, surface water runoff, and groundwater recharge characteristics across many watersheds within the planning area.

Springs

Springs and seeps are important water resources. They are often the source of stream flows, provide cold-water habitat for temperature-dependent species, and support unique vegetation communities. In some instances, springs may locally sustain perennially wetted conditions in otherwise dry settings. These springs and their occurrence vary with seasonal rainfall patterns.

Comprehensive mapping of springs across the planning area has not occurred. Where diversions or consumptive uses exist, the California Water Resources Control Board requires registration and reporting of these sites. However, many springs exist that are not currently mapped, and springs may potentially be illegally tapped for marijuana growing operations and private residences.

Groundwater Resources

In many areas, groundwater resources are intricately linked with surface flows. These areas are commonly encountered in areas of extensive stream deposits (alluvium) and valleys. In areas dominated by volcanic geology, groundwater resources (and springs) may occupy fracture networks and empty magma conduits. The majority of the planning area is mapped as not having a primary underlying aquifer, with small areas on the coast overlying Coastal Basins aquifers (Eel River Valley, Eureka Plain, and the Mad River Valley), inland areas associated with Northern California basin-fill aquifers (scattered in eastern portion of planning area), as well as Northern California volcanic-rock aquifers (eastern portions of Siskiyou, Shasta, Tehama, and northern Butte counties) (USGS 1995).

Groundwater extraction is regulated by the State of California. In recent years, the effects of groundwater pumping on adjacent waterways have been the subject of increased regulation to reduce effects to surface water networks (see www.groundwater.ca.gov for additional information).

Water Quality

The CWA of 1972, as amended, establishes the framework for regulating discharges of pollutants into waters of the US and regulating quality standards for surface waters (Copeland 2016). The objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Under the CWA, the EPA has implemented pollution control standards, such as setting wastewater standards for industry. Water quality standards have also been set for most contaminants in surface waters (Copeland 2016).

Potential sources of water pollution can be categorized as either point or nonpoint source pollution. Point source pollutants originate from a direct source, such as permitted industrial discharges or sewage plant discharges. Nonpoint source pollution comes from many diffuse sources, such as roads, atmospheric lead deposition, suspended sediment, and pesticides. The CWA prohibits discharge of pollutants from a point source into navigable waters unless a permit is obtained (Copeland 2016). EPA's National Pollutant Discharge Elimination System permit program controls discharges of pollutants. The Safe Drinking Water Act is the principal federal law that protects the quality of drinking water in the US (EPA 2004). Under the Safe Water Drinking Act, the EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The law requires many actions to protect drinking water and its sources, including rivers, lakes, reservoirs, springs, and groundwater.

Many waterbodies throughout the planning area are listed as impaired under the CWA; in the State of California, the CWA authority is delegated to the state by the EPA. As part of this impaired designation, responsible agencies including the EPA and the State Regional Water Quality Control Boards are required to prepare total maximum daily loads (TMDLs) for regulating pollutant inputs and eventually achieving water quality standards developed during the TMDL process. Relevant waterbodies are listed in the AMS (BLM 2021a, Table 2-63), including regulated waters such as Sacramento, Trinity, Klamath, Eel, Mad, Feather Rivers, and Stony Creek. Many of the waterbodies are listed as sediment and temperature impaired, with the primary impairment resulting from elevated summer water temperatures. Channel aggradation has exacerbated these thermal stresses. The widespread occurrence of elevated water temperatures has triggered regulatory actions for the management of riparian areas and their vegetation, which can moderate thermal stress on adjacent streams.

Environmental Consequences

Impacts Common to All Alternatives

The BLM has a mandate to manage public land for multiple uses and sustained yield. In terms of water resources, this means the BLM would consider activities and land uses that have the potential to impact water availability as well as the potential to degrade water quality, including destabilizing natural stream morphologic and hydrologic conditions, and reduce groundwater storage and discharge. The consequences of these effects are stream depletion, declining water levels, subsidence, and saltwater intrusion. Minimizing such impacts is a theme common to the four alternatives under consideration by the RMP.

Land management actions would directly and indirectly impact water resources within the decision area, including activities associated with ROW development, special land use designations, vegetation and forest management, wildland fire management, livestock grazing, recreation management, and mineral leasing. The impacts of management activities on water resources vary based on the nature and magnitude of ground disturbance or restorative action as well as the presence of legacy impacts from previous land uses. Indirect effects from ground-disturbing and restorative activities have the potential to impact areas downgradient from the decision area processes through movement of sediment via rivers or streams. A number of activities may impact water quality along waterways, including:

- residential and commercial development in floodplains;
- transport of sediment into streams due to livestock grazing;
- introduction of waste matter into streams from domestic livestock and wildlife;
- road maintenance programs, new road construction, configuration and locations of existing roads networks, and legacy road issues;
- release of chemical pollutants into water resources due to accidental spills;
- management of wildfires and burn areas;
- surface-disturbing activities in overland areas, such as removal of natural vegetation increasing runoff and sedimentation; and
- surface-disturbing activities along waterways causing direct impact on streams and ponds and adjacent riparian habitat, which causes impact on stream and lake/pond morphology.

Impacts from ground-disturbing activities on water resources may be mitigated through applicable stipulations or measures that address site-specific environmental concerns and would be subject to applicable BMPs as outlined in **Appendix F**. Water resources can be improved through management actions that enhance or restore degraded water quality and/or improve water supply. Restorative activities conducted in disturbed areas, including reclamation or restoration of riparian vegetation and forest communities, soil and geomorphology stabilization, and stream habitat restoration have the potential to improve watershed ecological function and prevent further water resource degradation. Access closure or avoidance of particularly sensitive areas are protective of water resources, as are specific mitigation measures aimed to reduce the impacts of future planned activities on water resources. Road upgrading and maintenance to address stormwater runoff and the elimination or replacement of undersized or failing culverts are beneficial to water resources, as is livestock grazing using improved techniques such that impacts on sensitive habitat along riparian areas are minimized, which benefits water quality and geomorphic function of streams, particularly with use of latest applicable BMPs as outlined in **Appendix F**.

Water supply in the planning area is impacted by both natural and man-made causes, including impoundments, direct diversions to other basins, changes in land use leading to reduction in infiltration and aquifer supply as well as changes in stream morphology, changes in vegetation, and other causes. Water supply is also impacted by climate change through shifts in precipitation patterns and intensity.

Land allocations within the decision area would determine the compatible land use and ROW authorizations that would ultimately determine potential impacts on water resources. ROW authorizations that are foreseeable for areas that are open to ROWs or ROW avoidance areas include, but are not limited to, the following: construction of roads, facilities and/or structures; stream crossings; vegetation removal or manipulation; overland travel or trampling; vehicle use in authorized areas; and

grading; and excavation. Generally, for land allocations, the greater the size of the area and/or the more ground-disturbing activities that are authorizable, the greater the potential impact on soil surface and thus water resources from activities such as vegetation removal, disturbance of natural soil surface, excavation, erosion, and construction of facilities.

Areas that are managed as ROW exclusion areas would eliminate impacts on water resources from ROW-related ground-disturbing activities. Areas that remain or become ROW avoidance areas would have greater potential for impacts on water resources resulting from ground disturbance than ROW exclusion areas; however, ROW avoidance areas would be subject to extended environmental review, minimization and avoidance requirements, site-specific stipulations, and possible requests to relocate facilities. Areas that remain or become open to ROW authorization have the greatest potential for ground-disturbing activities and water resource impacts with fewer environmental stipulations. Approved ROW uses that cause ground disturbance would be subject to reclamation requirements at the project-specific planning level. While stipulations in areas with sensitive water resources and streams of particular interest could be required on a project-specific basis, ROW activities would be expected to have a greater level of impact on water resources in areas with sensitive streams of particular interest. However, all ROW authorizations will be subject to applicable water quality permitting (if parameters are met) and require the implementation of BMPs (**Appendix F**).

Wilderness areas, WSAs, and ACECs would typically provide protective impacts on water resources as compared with areas that lack special designation. However, some wilderness areas, Section 603 WSAs, and ACECs possess legacy issues from past management (for example, sediment sources from abandoned roads) that allow them to present with ongoing impacts on water quality, particularly when in proximity to sensitive stream areas. Wilderness areas would be managed to preserve wilderness character and, therefore, water resources would remain in their current state and would not have the potential to be impacted by most development activities. However, trailheads would be prioritized in wilderness and WSAs allowing some localized disturbance of water resources associated with trail construction, foot bridges, parking areas, and recreation support facilities. WSAs would be open to many activities but would be recommended for withdrawal from locatable mineral entry and development, decreasing the likelihood of water resource impacts from mineral activities. Management actions within ACECs would typically include restrictions of ground-disturbing activities, yet there could still be low potential for destabilizing soil or water resource impacts from these types of activities.

Restorative activities to reestablish desired vegetation would generally support long-term protection of water resources from sedimentation and restoration of stream resource function and productivity. Vegetation and forest management activities that cause ground disturbance or remove or change vegetation structure could cause short-term impacts on water resources through a temporary increase in soil erosion and sedimentation potential compaction. For example, invasive, nonnative plant treatment (including herbicide use) and prescribed burns would limit proliferation of treated vegetation, reducing overall surface cover.

A short-term decrease in vegetation cover could temporarily increase potential erodibility of soils, thus increasing potential impact on water resources. If heavy equipment is required for treatments (i.e., timber harvesting or tractors for reseeding), this equipment may further disrupt ground cover, increase runoff potential and sedimentation to waterbodies. However, modern harvest technologies employing rubber-tired equipment and “self-mulching” operations have the potential to reduce ground disturbances from

past methods. While these impacts could remain in the short-term (up to 5 years), surface disturbance areas would expect to stabilize as native or desired vegetation structure is established and natural ground cover (such as vegetation debris) accumulates. As new vegetation becomes established in the long-term, disturbed areas would expect to stabilize and improve potential for runoff and sedimentation. Impacts on sensitive water resources could be amplified depending on the nature of vegetation management activities and proximity to waterbodies and streams of particular interest. Minimization of impacts on riparian and subsequent revegetation where appropriate would provide a vegetative buffer, increase filtration, slow water flows, and increase shade to address stream temperatures.

Conservative management direction in riparian management areas would help reduce surface-disturbing activities and maintain vegetation cover, thus reducing the potential for impacts on water resources in these areas. Under all alternatives, the BLM would require that management actions, including those that could result in ground disturbance and vegetation removal, would not retard attainment of the Northwest Forest Plan (USDA and USDI 1994) Aquatic Conservation Strategy objectives. The objectives would help ensure protection of the aquatic systems by maintaining and restoring water quality, sediment regimes, and in-stream flows to support healthy riparian systems. Riparian management area widths would differ across the alternatives based on the type of aquatic feature and other factors, meaning that the size of the area that would be afforded incidental protections and that would contribute to water resources conservation would also vary across the alternatives, as would the resulting potential for impacts on water resources. Ultimately, there would not be an appreciable difference between the alternatives, in the BLM's ability to manage water resources in riparian management areas while not retarding attainment of the Aquatic Conservation Strategy objectives.

Wildland fires could cause complex impacts on water resources including altered evapotranspiration rates; changes to surface water runoff; effects on water temperature; and groundwater recharge characteristics across many watersheds within the planning area. Impacts from wildland fire would vary depending on site-specific conditions, such as vegetation fire condition class, vegetation community adaptations to fire, burn severity, and pre-burn soil conditions. Loss of vegetation cover and structure from high severity burns dramatically decreases soil cover, exposing soils to wind and water erosion, destabilizing soils and increasing mass wasting susceptibility, and increased runoff and sedimentation rates to waterbodies. Fires may also cause changes to soil chemistry that impact hydrologic function, including development of temporary hydrophobicity and impeded infiltration (Woods et al. 2007). Prescribed fire prescriptions, fuels management, and wildfire suppression can minimize or mitigate some of these water resource impacts of high intensity fires (by reducing potential for severe fires), but they may cause some short-term impacts on water resources, such as surface-disturbing fuel treatments and impacts from chemical retardants.

Livestock grazing management has the potential to cause impacts on water resources. The level of impacts would depend on the intensity of grazing, range site potential, local climate and weather conditions, and the seasonal timing of use. Livestock grazing activities can cause vegetation loss, soil compaction, erosion, impacts on riparian health, and impact on stream banks, while construction of rangeland improvement projects can also cause ground disturbance and temporal impacts. Allotment management plans or Rangeland Health Assessments based off Rangeland Health Standards and Guidelines for California and Northwestern Nevada, could monitor grazing practices, evaluate resource conditions based on soil conditions and land health, and would also take into consideration water resource impacts. These prescriptions could prescribe management activities to maintain water resource health and function,

including fencing and riparian maintenance. These prescriptions could include periods of rest (rotation or deferment) to impose utilization limits within grazing allotments to allow ground cover to increase and soil litter to accumulate. Adequate ground cover would reduce soil erosion, increase infiltration to maintain water resources, and maintain watershed health and desired vegetation communities. The most acute areas for impacts would exist where livestock tend to concentrate such as salt licks, water sources, and fence lines. Water resources would be included in consideration of issuing grazing leases, and if analysis determines special protection is warranted, they would be included in the terms and conditions of the grazing lease. Because the BLM does not anticipate a substantial increase in active grazing allotment acreage over the life of the RMP, impacts on water resources would be limited to those areas where allotments are active. The BLM would work with lessees on Rangeland Improvement Projects to protect riparian resources. Rangeland Improvement Projects could include work such as installing infrastructure such as fencing to exclude cattle or installing water troughs that are removed from the riparian zone to draw animals away from the waterbody.

Recreational activities can cause localized impacts on water resources and indirect impacts across the landscape. Hiking, mountain biking, dispersed camping, overlanding, and OHV use may cause soil compaction, vegetation trampling, habitat fragmentation, increased weed invasion, and greater susceptibility to soil erosion and sedimentation into waterways. As hiking and camping (including dispersed and overlanding) become more popular, trail and campsite widening can occur, magnifying erosion and increasing the area and depth of disturbance, all of which are magnified impacts in floodplain areas near watercourses. Generally, hiking and mountain bike trail use is localized with impacts on soil resources being limited to trailside areas. However, informal user trails, side-country networks, and dispersed human impacts can occur, all of which can result in increased impacts on soil resources.

Similar to camping and mountain biking, the use of OHV on public lands can expand beyond authorized and managed zones and it can result in increased soil resource impacts. Without adherence to existing and established routes, OHV use can also lead to greater vegetation and soil disturbance because of OHV weight and travel speed. Dispersed camping and overlanding (a blend of car camping and OHV-type use) also have a likelihood of impacting soil resources due to travel outside of designated camping areas and beyond established OHV routes. Three types of travel management designations have been defined with variable levels of potential for surface disturbance and resulting water resource impacts. Areas that are closed to OHV travel would have little to no direct OHV-related water resource impacts. Areas where OHV travel is limited to existing and designated routes would have some water resource impacts, but those impacts would be limited to designated routes where disturbance has already previously occurred. Areas that are open to OHV travel would allow unrestricted, cross-country OHV use, however, those areas would avoid previously undisturbed areas and they would be further analyzed under travel management planning and a project-specific planning process.

Impacts on water resources from leasable, locatable, or mineral materials development would vary based on the longevity and magnitude of surface-disturbing activities and stipulations designed to minimize these impacts. Potential impacts on water resources associated with mining activities include the following: vegetation clearing and exposure of soil surface to water erosion; changes to infiltration and runoff intensity, volume and timing; water contamination; dewatering aquifers; direct impact from construction of roads, pipelines, structures, or mining operations; and reduction in waterbody function. Dewatering aquifers for mineral development could also impact water resources by reducing groundwater storage and discharge, which can lead to stream depletion, declining water levels, subsidence, and saltwater

intrusion depending on project location. Standardized and project-specific stipulations would mitigate some impacts on water resources. Management designations would partially determine the potential impact of mineral leasing, entry and disposal to soil resources. Areas that are closed to mineral entry, or disposal and/or subject to no surface occupancy would have no new mineral development-related water resource impacts. Areas that are open to mineral, entry, or disposal would have the greatest potential for impacts because these areas would be open to all authorizable mineral development activities with the fewest stipulations to protect water resources.

Locatable mineral development in the decision area remains the same across the four project alternatives with some acres being formerly withdrawn for the duration of the RMP; therefore, no change in effects on water resources is expected. Operation Plans would include designs to mitigate, avoid, and prevent water quality impacts. Effects of mineral materials developments on water resources would occur in specific areas, typically next to roads. Fluid mineral leasing stipulations would not preclude developing areas already leased. In these areas, surface-disturbing activities that could affect water quality and quantity would occur if leases were developed. Effects from fluid mineral development would result from exploration and development requiring the construction of roads, pipelines, pads, and facilities. This would involve vegetation clearing, which can increase sediment runoff into waterways. Additionally, fluid mineral development may affect aquifers and groundwater resources. The use of horizontal drilling technology and hydraulic fracturing for well stimulation could occur as part of oil and gas development in the planning area. Several studies have documented an upward trend in water use per well for hydraulic fracturing associated with fluid mineral development (Valder et. al. 2021). Large volumes of groundwater are diverted for this activity in areas where surface water is fully appropriated or otherwise unavailable. The impacts of groundwater extraction for hydrofracturing include reducing groundwater storage and discharge, which can lead to stream depletion, declining water levels, subsidence, and saltwater intrusion depending on the project location. BLM water rights policy requires that the availability of water on public lands be addressed in RMPs to support the BLM's mission and programs be addressed (BLM 2013). However, the physical and legal availability of water for direct, indirect, or ancillary uses associated with mineral, fluid, or solar energy development is not available currently, and, therefore, is not analyzed at this time. This assessment will be completed during project-level analyses and permitting.

Stipulations for fluid minerals leasing, BMPs, and mitigation measures for surface-disturbing activities would reduce effects on water resources associated with authorized land uses or activities such as road, pipeline, or powerline construction (ROWs); mineral development; range improvements; and recreational activities. BMPs and mitigation would reduce the likelihood of removal of essential soil stabilizing agents, erosion and sedimentation, and contamination from spills and hazardous waste. The level of protection for water resources would vary as a function of alternatives and the site- or activity-specific measures employed to maintain, improve, or conserve soil and other resources. Some stipulations could include avoidance measures to prevent specific sensitive water resources from being directly or indirectly impacted by a management activity. Other measures would be aimed at establishing increasing vegetative ground cover or constructing stormwater infrastructure to reduce soil loss and water resource impacts from sheet or rill erosion, head cuts and gullies, and mass wasting. Reduction in soil losses would further reduce sediment loading to surface water bodies. In some cases, the BLM may establish general performance standards for surface-disturbing activities to demonstrate the efficacy of specific mitigation activities. Hazardous materials BMPs would be established to minimize potential for soil contamination. Requiring a reclamation plan for all surface-disturbing activities across all alternatives would stabilize

disturbed areas in the short-term and stabilize landscapes in the long-term, reducing potential effects on water resources from erosion and sedimentation.

Climate change is expected to increase water temperatures, potentially decrease water availability on the landscape and within waterbodies, and further exacerbate drought conditions, which could lead to changes in vegetation community structure. An amplified hydrologic cycle with stronger fluctuations in precipitation and more intense precipitation events could occur, which would cause flooding, hillslope and stream bank erosion, and potential for mass wasting. Higher intensity wildfires would further reduce cover by desirable vegetation and increase potential for erosion, slope destabilization, and mass wasting and resulting impacts on water resources and waterbodies.

Alternative A

Alternative A would continue existing land management practices for water resources. Impacts would be consistent with those described above under *Impacts Common to All Alternatives*.

Managing resources to maintain or improve soil conditions would continue to reduce effects on water quality by reducing and preventing erosion. Before authorizing surface-disturbing activities under Alternative A, the BLM would continue to apply current management measures already in use, to reduce impacts in areas with high erosion susceptibility, areas susceptible to mass failure, steep slopes, areas with limited to no vegetation, areas with shallow soil depths, riparian areas, and areas in proximity to TMDL-listed waterbodies or watersheds. Vegetation would be managed with the objective of enhancing vegetation community health and maintaining species diversity would reduce effects on water resources from a turbidity and water temperature perspective. Riparian/wetland vegetation communities would be managed to achieve or make meaningful and measurable progress toward the BLM objectives for streamside and healthy watershed management. This would support actions that would reduce effects on plant vigor and water quality/quantity from erosion and a sedimentation perspective.

Applying a fluid mineral stipulation for extremely erodible soils and on steep slopes would continue to reduce the potential for effects on water quality in these sensitive areas. These measures may continue to reduce effects on water quality and quantity and the physical characteristics of streams by mitigating the effects of soil erosion associated with surface-disturbing activities.

Current management does not specify actions for sensitive soils or the restoration of areas with water resource degradation. Those areas not included in the stipulations or mitigation measures would continue to be at higher risk for erosion from authorized activities or resource uses and natural disturbances. These areas would continue to have greater opportunity to affect water quality and increase sediment levels in surface water. Additionally, existing management measures in place do not necessarily take into consideration current technology and mapping and may not utilize current science for BMPs to address soil erosion and protection of water resources.

Alternative B

Alternative B would provide additional protections for streams and rivers for beneficial flows and reduce direct impacts on riparian and water resources. In general, Alternative B would: prioritize designated areas for resource protection, strive to minimize overall ground disturbance, and prioritize degraded areas for habitat restoration in and around waterbodies. Soil erosion and sedimentation impacts on waterbodies would continue in the planning area due to natural processes. Impacts on water quality from surface-

disturbing activities would continue to be reduced through application of BMPs in coordination with the State of California agencies (**Appendix F**). In particular, Alternative B would provide specific and unique management activities as follows:

- BLM-administered lands would be closed to surface-disturbing activity within active floodplains, with the exception of mineral materials development and restoration activities.
- Acres of land would be protected through purchase and set aside versus losses of protected lands disposed through sales.
- The Grass Creek Watershed would be prioritized for sediment reduction and restoration and during implementation-level travel planning, and redundant routes would be closed to facilitate rehabilitation of sediment impaired waterbodies.
- Landscape features susceptible to mass failure and sensitive soils would be closed for fluid minerals leasing, which will help protect waterbodies from sedimentation.

Alternative B would manage key streams of particular interest, particularly TMDL-listed waterbodies, as ROW avoidance areas, and proponents of proposed activities within these areas would be required to incorporate BMPs and mitigation measures to minimize soil erosion and maintain riparian habitat. Authorized disturbances would include plans for reclamation, and site-specific reclamation actions would reflect the environmental concerns and reclamation potential of the site. This would decrease the magnitude and potential for localized declines in water quality.

Alternative C

Management of water resources under Alternative C would be less protective than Alternative B, yet it would still update and enhance the BLM's current efforts to manage streams and rivers for beneficial flows and reduce direct impacts on riparian and water resources. The primary differences include:

- Alternative C and D would allow for surface-disturbing activities in the active floodplain on a case-by-case basis if the BLM determines that the activity is consistent with natural resource and cultural resource goals and would apply BMPs from **Appendix F** in order to minimize impacts.
- Alternative C would allow for disturbance of sensitive soils if a stormwater prevention plan and possible BMPs are utilized as determined and specified by the BLM on a project-specific basis.
- During implementation-level travel planning, redundant routes within the Grass Creek Watershed would be analyzed for minimization opportunities (but not necessarily completely closed) with consideration to sediment impaired areas.

Alternative D

Management of soil resources under Alternative D would be similar to, yet less protective than Alternative B. The primary difference is that:

- Alternative D would allow for surface-disturbing activities, including mineral materials development, in the active floodplain on a case-by-case basis if the BLM determines that the activity is consistent with natural resource and cultural resource goals.
- During implementation-level travel planning, redundant routes within the Grass Creek Watershed would be analyzed for minimization opportunities (but not necessarily completely closed) with consideration to sediment impaired areas.

Comparison of Alternative A, Alternative B, Alternative C, and Alternative D

The comparative analysis below for Alternative A, Alternative B, Alternative C, and Alternative D relies on acreage of potential uses as a proxy for potential surface disturbance and thus potential impact on water resources. Management options and potential impacts on resources are discussed in the following resource use/management topics: ROW development, vegetation and forest management, wildland fire management, livestock grazing, recreation, mineral resources, and special designation areas (such as wilderness).

Acres open to ROW use (and subsequent surface-disturbing activities) as a result of Alternative A, Alternative B, Alternative C, and Alternative D, are summarized in **Table 2-1** and compared below, as well as a qualitative discussion of management relative to alternatives. Alternative A (the existing management option) allows for over 300,000 acres open to ROW authorizations, while Alternative B, Alternative C, and Alternative D would place limitations on total acreage available for ROW use. The acreage open for ROW usage under the other three alternatives comparatively range from approximately 108,600 to 121,300 acres with Alternative D (Proposed Alternative) allowing approximately 108,600 acres available for ROW applications. Additionally, Alternative A (current management option) includes a limited area designated with “avoidance” terminology as a management category, and under Alternatives A - D, this new management category is defined to allow ROW authorization where minimization and avoidance has been maximized, other feasible options do not exist, and a project implements the BLM mitigation and/or minimization measures as determined through project-specific analysis and authorizations. Subsequently, in addition to the 108,600 - 312,000 acres open for ROW use under Alternatives A - D, there are provisions for additional authorization of approximately 11,300 - 166,400 acres under the “avoidance” category bringing total acreage open for ROW applications to 247,100 - 323,700 acres. In total, Alternative A remains the least restrictive allowing 323,700 acres for ROW use with restriction; Alternative B would be the most restrictive with 247,100 acres available for potential ROW use, Alternative D would allow an intermediate level of area for ROW use at approximately 274,200 acres (with restrictions) for ROW use, and Alternative C is second only to existing conditions (Alternative A) allowing up to 288,100 acres (with restrictions). ROW development would have potential impacts on water resources where ROW alignments intersect waterways, or where ROW activities occur within proximity to waterbodies, which could result in sedimentation. These intersections have not been quantified and they would be analyzed on a project-specific basis. However, not all ROW uses result in ground disturbance or water quality impacts, such as use of existing road or repair of an existing ROW infrastructure such as a communications tower.

Alternative A under current management plans, designates exclusion of 58,500 acres for ROW use (defined as no development activity allowed). In comparison, the other alternatives would have a notable increase in exclusion areas ranging from approximately 94,100 to approximately 135,100 acres, with Alternative B providing the most restrictive limitations on acreage and Alternative D (Proposed Alternative) allowing a middle ground with approximately 108,000 acres removed/excluded for ROW usage. **Section D.3.2, Land Tenure**, discusses magnitude of impacts and conservation measures within each project alternative.

An acreage calculation of fuels reduction treatment (pre- and post-) is not available, and it is assumed that under the four project alternatives there would not be a quantitative difference in potential surface disturbances (and thus impact on water resources), partially due to the unpredictable nature of acreage where fire may occur in any given year. Pre- and post-fire treatments would be analyzed on a project-

specific basis, along with potential impacts on water resources. Fire prevention activities overall, would have a net benefit to water resources due to prevention of catastrophic fires, which can result in water quality impacts; increase in soil erosion and mass wasting; increase in invasive, nonnative species and changes in evapotranspiration rates; and challenges with revegetation and stabilization post fire. Prescribed fire programs may reduce the potential for more catastrophic fires in a given area and reduce long term impacts on water quality. Areas with wilderness characteristics and other special land use designations may have a qualitative difference in ways pre- and post- fire conditions are managed, which is discussed in **Section D.4.8** along with restrictions, BMPs, and mitigations, when applicable.

Acres open to livestock grazing (and subsequent surface-disturbing activities) as a result of Alternative A, Alternative B, Alternative C, and Alternative D are summarized in **Table 2-1** and compared below. There is also a qualitative discussion of management relative to alternatives. Under Alternative A, current management plans allow for 186,900 acres available for livestock grazing, of which, 62,600 acres are currently managed as grazing allotments. The action alternatives would increase the overall acreages available for livestock grazing from Alternative A. Alternative B would identify 232,800 acres as available for livestock grazing, with 62,000 acres expected to be managed as grazing allotments. Alternative D would identify 188,600 acres as available for livestock grazing, with 59,000 acres managed as grazing allotments. Alternative C would identify the largest increase in acres available to livestock grazing at 271,800 acres, with 64,500 acres managed as active grazing allotments. Impacts to water resources would be limited to those areas with active grazing allotments. Given the minimal differences in acres of allotments between alternatives, the overall impacts are anticipated to be similar to those under Alternative A.

Areas restricted that do not allow grazing under current management plans (Alternative A), are currently just under 195,300 acres, and similar circumstances with Alternative D at 193,600 acres. With the increase in grazing acreage allowable under Alternative B through Alternative D, these alternatives would subsequently necessitate a decrease in the acreage held under grazing restrictions to 149,400 acres for Alternative B, less restrictions under Alternative C (110,400 acres). However, in general, BLM lands are open to grazing unless specifically closed within an RMP or wilderness designation that does not already have existing grazing. The actual ability to graze these public lands is dependent on suitability criteria which gets analyzed through on-the-ground monitoring, NEPA analysis and administrative efforts to establish project-specific and appropriate allotments taking into consideration forage, steep slopes, parcel size, access, and more. There are many sections of lands that are not appropriate for grazing due to limiting factors such as slope, forage, and access, yet these areas may be included in “open” areas for grazing until further on-the-ground analysis can be done at the project level. Therefore, a comparison based on acreage alone does not mean that the total acreage would ever be opened completely to grazing. Overall, BLM does not anticipate a substantial increase in active grazing allotment acreage over the life of the RMP regardless of alternative.

Alternative B and Alternative D utilize similar management measures such as limiting grazing in ECC on a case-by-case basis, while Alternative C would allow ECCs open to grazing. The less restrictive management strategy from a grazing perspective under Alternative C coupled with an increase in acreage allowed for grazing could result in additional soil impacts (erosion, degradation, and compaction) under Alternative C, although modern management techniques could ameliorate an increase in potential impacts at the implementation and project-level during new and updated Grazing Management Plan review. These impacts would be limited to those areas where grazing allotments are active. As previously mentioned, the increased available acreage for grazing under Alternative C, does not necessarily mean those lands

would be grazed since site-specific suitability would be needed prior to any grazing no matter which alternative is selected.

Across the four alternatives, Alternative A maintains the status quo for OHV use limited to existing and designated routes (322,800), while 59,200 acres are closed to OHV use. Alternative C provides a slight increase in lands available to limited OHV use (323,300 acres). Alternative B and Alternative D provide for a decrease in OHV limited use (308,400 acres and 320,600 acres, respectively). The acreage open to all OHV uses (non-limited) remains the same at 190 acres across the four alternatives. The differences in acreage relative to OHV use between alternatives is unlikely to result in substantial changes to water resource impacts due to the relatively similar acreages of use, and travel is limited to existing or designated routes; therefore, water resource impacts are not likely to be increased or decreased between the alternatives as a direct result of recreational uses. Furthermore, changes and specific route designations would be made in an implementation-level travel and transportation management planning process following the completion of the RMP, which would take into consideration water resources if changes in use and acreage were to be considered, as described in **Section D.3.7**, Travel and Transportation Management.

In regard to SRMAs and ERMAs Alternative A maintains the current conditions of approximately 40,190 acres under special recreation designation, while Alternative B offers a moderate increase in these types of designations to approximately 45,590 acres, and Alternative C and Alternative D provide a larger increase in special recreation designations to approximately 87,590 and 86,990, respectively. The various acreages are not likely relevant to water resources as long as changes in surface disturbance do not occur, however, the reader is referred to **Section D.5.4** for further information on magnitude of impacts associated with these management decisions that are not necessarily captured under a strict acreage analysis.

Alternative B would manage the largest area out of the four alternatives for the protection of wilderness characteristics (approximately 21,970 acres), whereas Alternative A would not identify management actions specific for the protection of wilderness characteristics (see **Table 2-1**). Alternative C would manage 5,840 acres as wilderness, while Alternative D proposes to manage 11,570 acres as wilderness. However, Alternative C and Alternative D would also manage some additional areas that exhibit wilderness characteristics, yet management plans would emphasize multi-uses (Alternative C includes an additional 28,220 acres and Alternative D includes 21,950 acres for multi-use/multi-benefit). Restrictions on surface-disturbing activities on lands with wilderness characteristics would indirectly protect water resources in these areas from surface-disturbing activities and they would reduce a potential for decline in watershed health. Management of areas with wilderness characteristics would include ROW exclusions and restrictions on travel, energy development, and other surface-disturbing activities. Additionally, considering adjacent lands to identify new qualifying areas for lands with wilderness characteristics could reduce effects on water resources in other areas in the future. However, wilderness lands and relating low impacts on water quality are contingent upon a certain level of watershed restoration work within the wilderness areas and potential new designated areas, in order to address legacy issues within the planning area present (for example, numerous legacy sediment issues).

Alternative A would manage 54,600 acres as ACECs, which would result in restrictions on surface-disturbing activities from OHV use, ROW authorizations, forest products use, and mineral development (see **Table 2-1**). Alternative B and Alternative D propose the highest area managed as ACECs, with

88,820 acres and 87,890 acres, respectively. Due to the larger acreage of ACEC management under Alternative B and Alternative D than under Alternative A, more water resources in the ACECs would be protected from surface-disturbing activities. Alternative C offers a moderate level of ACEC management, with 42,430 acres designated under this management protection.

Mineral resource management activities are summarized in **Table 2-1**, and they are relatively similar acreage-wise across the alternatives. Alternatives B and Alternative D are similar in providing management measures where sensitive soils would be closed for fluid minerals leasing, thus reducing potential impacts on water resources due to a potential increase in sedimentation. Unique to Alternative B includes a special measure where previously degraded riparian zones that have been restored would also be closed to fluid mineral leasing.

Cumulative Impacts

The cumulative impacts analysis for water resources includes the planning and it considers historic events and activities, ongoing trends, and reasonably foreseeable future actions. The analysis considers the combination of human activities, natural events, and exacerbating effects associated with climate change.

The planning area, and associated watersheds, have been impacted by historic mining and mineral activities that have impacted overall watershed health and water resources. Based on current trends, mineral leasing and materials activities are generally not expected to create a substantial increase in soil disturbance or related impacts on water resources within the area. There are no known fractured quarry rock and aggregate mines.

Water resource projects aimed at restoring natural hydrological function (e.g., Lower Klamath Dam Removals, Trinity River Restoration Program, and Corral Gulch Restoration Program) are considered reasonably foreseeable future actions with an overall net benefit to water resources. These projects would restore natural flow variability and floodplain function, raise the groundwater table, increase streamflow, decrease water temperatures, and decrease erosion and sedimentation, which would increase soil water availability in some areas, enhance natural vegetation communities, and increase soil productivity and ecological function.

Vegetation communities are expected to be strongly impacted by climate change, increased frequency and intensity of wildfires, insect and disease pests, weed infestations, and ongoing drought conditions. Some vegetation communities are projected to drastically change in response to these changes, including shifts in evergreen forests and expansion of grassland communities in some areas. Such dramatic shifts in vegetation community structure, as would occur in responses to catastrophic wildfires and/or landslides, would be accompanied by soil instability, erosional losses, and impacts on water resources until landscapes reach equilibrium under new vegetation communities. Vegetation treatments aimed at reducing hazardous fuels and undesirable vegetation would be aimed at creating more resilient landscapes, increase in soil stability that are less prone to erosional losses and mass wasting, and net benefit to water resources. Vegetation treatments could also be used to promote a long-term benefit for water resources by restoring evapotranspiration processes in overly dense forest stands. Many watersheds are composed of overstocked, dense, often hardwood-dominated stands that have higher evapotranspiration demands and resultant lower stream flows, and vegetative treatments could address this existing negative condition as well.

Trends in livestock grazing would depend on a number of environmental factors; however, the BLM would continue to administer rangeland health assessments to ensure protection of riparian areas and water resources under changes to range management.

ROW leases associated with infrastructure development projects are expected to increase in the future, and they would include projects such as utility lines, access roads, and waterlines. No known wind or solar energy projects have been identified for the decision area. Ongoing or proposed ROW development projects could increase the total footprint of disturbed areas within the decision area, which would have an additive effect on water resources from vegetation removal/manipulation, grading or excavation, and soil displacement. Effects would include temporary increase in soil erosion and related impacts on water resources.

Recreation and visitor use are expected to increase in the future. The activities identified as having growth potential include hiking, backpacking, mountain biking, dispersed camping, OHV, and applications for special recreational permits and recreational use permits. Impacts from all of these activities would primarily be localized to existing and established trails and routes, and impacts on water resources would be limited to localized areas. However, travel off of designated or existing routes and creation of social trails has occurred and it would likely occur within the decision area, which would expand the footprint of soil disturbance and increase potential for water resource impacts.

D.2.4 Vegetation

Issue Statements

- How would the alternatives affect management actions for plant communities, including during post-fire rehabilitation treatments?
- How would the alternatives affect the risk of invasive plant introductions and spread?
- How would the alternatives affect special status species?

Affected Environment

Vegetation Cover Types

The BLM classified vegetation in the decision area based on cover type (see **Appendix B**). Vegetation cover types were primarily compiled using habitats described in the California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationship (CWHR) database (CDFW 2023). Additional unique vegetation types not included in the CWHR, but that are an important component of vegetation communities in the decision area, were also included. For woodland and forest habitats, the Society of American Foresters (1980) forest cover types were also referenced when classifying vegetation cover types.

The acres of each resulting vegetation cover type in the decision area are summarized in **Table D-7**, and are shown on **Map 3-2** in **Appendix A**. Descriptions of the vegetation cover types and their vulnerability to climate-driven disturbance are included below the table. Supplemental information on vegetation representation of the EPA ecoregions in the planning area and vegetation structural groups (for example, barren, grassland, shrublands, forests and woodlands, and other groups) in the planning area, is included in Section 2.2.13, Vegetation, of the AMS (BLM 2021a).

Table D-7
Vegetation Cover Types

Vegetation Cover Type	Decision Area (acres¹ and percent)
Chaparral Shrubland	72,700 (19)
Coastal Forests	<100 (<1)
Coastal Prairies	500 (<1)
Douglas-fir- and Tanoak-dominated Forest	59,600 (16)
Dunes	400 (<1)
Fallow Fields and Croplands	700 (<1)
Foothill Pine and Oak Woodland	91,300 (24)
Grasslands, Vernal Pools, and Wetlands	22,200 (6)
Juniper and Sage	7,800 (2)
Knobcone ²	N/A
Late Successional Forest	500 (<1)
Mixed Conifer	103,900 (27)
Oak Savannas and Open Woodlands	17,600 (5)
Rare Cypress ²	N/A
Other ³	4,400 (1)
Valley Foothill Riparian	500 (<1)
Total	382,200 (100)

Source: BLM GIS 2023

Notes:

¹ Acres are rounded to the nearest 100

² GIS data does not exist for the knobcone and rare cypress vegetation cover types

³ These are areas that cannot be classified or that are Riparian Management Areas per the Aquatic Conservation Strategy from the 1994 Northwest Forest Plan

Vegetation in the planning area is driven by the area's Mediterranean climate with warm, dry summers and cool, wet winters (see **Section D.2.1**, Air Quality and Climate). Rain dominates precipitation in the planning area, though higher-elevation areas have a winter snowpack that is important in sustaining streamflow—and associated riparian vegetation cover types—during the dry season. Along the coast, the maritime climate promotes milder temperatures compared with inland areas. Distinct shifts in vegetation types are apparent between coastal and inland areas and lower- and higher-elevation areas, given the unique climate conditions associated with each.

Climate change will affect vegetation on the BLM-administered lands in the planning area. While projected changes in temperature, precipitation, drought, and wildfire differ based on modeling assumptions, each of these climate components is expected to change during the proposed plan implementation. Recent climate trend projections for northern California (Hilberg and Kershner 2021; the study area of this assessment includes most of the planning area) indicate increased air temperature, shorter, wetter winters and longer, drier summers, and increased heat waves, drought, and wildfire (Hilberg and Kershner 2021, Table 1). Changes in the climate regime will influence terrestrial vegetation. Shifts in the distribution and composition of vegetation communities are expected to occur. Summaries of anticipated effects to specific selected vegetation cover types are described in more detail for each vegetation cover type below. Detailed analyses of climate effects and vulnerabilities are available from the Northern California Climate Adaptation Project, from which the summaries below draw.¹

¹ Internet website: <https://ecoadapt.org/programs/adaptation-consultations/norcal/products>.

Chaparral Shrubland

In northern California, chaparral shrublands generally occupy drier (xeric) sites (for example, west and south slopes) with shallow soils. Chaparral shrublands occur on both serpentine and non-serpentine soils (see **Section D.2.2, Soils**), and soil type, local climate, elevation, topography, and fire regime influence species composition and distribution (Reynier et al. 2019a). Northern California features two generalized chaparral communities, mixed and montane chaparral; both comprise the chaparral shrubland cover type.

Mixed chaparral generally occurs below 5,000 feet, though elevational limits vary considerably with precipitation regime, aspect, and soil type. In the Sierra Nevada, this type is a broken band along middle and lower elevations of the western slope. It also occupies large areas in the north coast ranges, especially on interior slopes, and it is found as large discontinuous patches in the Siskiyou Mountains and Cascade and Klamath Ranges (England 1988). Dominant species include scrub oak (*Quercus dumosa*), chaparral oak (*Quercus wislizeni* var. *frutescens*), and several species of ceanothus (*Ceanothus* spp.) and manzanita (*Arctostaphylos* spp.). Commonly associated shrubs include chamise (*Adenostoma fasciculatum*), curl-leaf mountain mahogany (*Cercocarpus betuloides*), silk-tassel (*Garrya elliptica*), toyon (*Heteromeles arbutifolia*), yerba-santa (*Eriodictyon* spp.), and others. Leather oak (*Quercus durata*) and interior silktassel (*Garrya congdonii*) are widely distributed on serpentine soils, and chamise and toyon may be abundant on these soils.

Montane chaparral is associated with mountainous terrain from mid- to high elevation (3,000 to 10,000 feet). It occurs in the Cascade and Sierra Nevada Mountains, the North Coast Ranges, and Klamath mountains (CDFW 2021). Montane chaparral is usually characterized by one or more of a diverse assemblage of species, including whitethorn ceanothus (*Ceanothus leucodermis*), snowbrush ceanothus (*Ceanothus velutinus*), greenleaf manzanita (*Arctostaphylos patula*), pinemat manzanita (*Arctostaphylos nevadensis*), hoary manzanita (*Arctostaphylos canescens*), and others.

Both mixed and montane chaparral provide habitat for a wide variety of wildlife. Montane chaparral provides critical summer range foraging areas for deer, as well as escape cover and fawning habitat. Some small herbivores use chaparral species in fall and winter when grasses are not in abundance. Shrubs are important to many mammals as shade during hot weather and moderate temperature and wind velocity in the winter. Chaparral provides birds with a variety of habitat needs including seeds, fruits, insects, protection from predators and climate, as well as singing, roosting and nesting sites (CDFW 2021).

Chaparral shrublands are anticipated to be moderately vulnerable to the effects of climate change in the planning area (Reynier et al. 2019a). Chaparral shrublands are sensitive to moisture availability, including seasonal precipitation timing, available soil moisture, and climatic water deficit. Changes in these factors are anticipated to alter the composition of this cover type by impacting chaparral species recruitment, growth, pollination ecology (due to a potential mismatch between plant phenology and pollinator life cycles), diversity, and survival. These factors may lead to shifts in the distribution of this vegetation cover type on the landscape.

Wildfire is a key disturbance regime in chaparral shrublands. Chaparral shrublands, both mixed chaparral and montane chaparral, are typically fire-adapted. With adequate fire return intervals, wildfire generally resets stand succession, and increases the spatial, structural, and biological diversity across the landscape (Keeley et al. 2005). Native American Tribes used cultural burning to maintain such diversity, for harvestable plant species and wildlife habitat.

Fire return intervals in chaparral are difficult to determine precisely, because typical wildfires are high-severity and stand-replacing. Estimates of pre-Euro-American settlement fire return intervals range widely depending on location. Safford and Van de Water (2014) report fire return intervals between 15 and 50 years for montane chaparral, and a variety of intervals for various types of chaparral, including chaparral and serotinous conifers (30 to 90 years), coastal sage scrub (20 to 120 years), and semidesert chaparral (50 to 115 years). Serpentine chaparral typically experiences longer fire return intervals, and more variable fire severity, due to limited fuel accumulation and continuity.

Fire return intervals, including in mixed and montane chaparral communities, are projected to decrease in northern California as a result of climate change. Chaparral is adapted to fire; however, increasing wildfire frequency (see **Section D.2.8, Wildland Fire Management**) due to climate change can alter the composition and diversity of chaparral ecosystems. For example, more frequent wildfire may eliminate obligate seeding species by killing recruits and depleting their seedbank. Shortened fire return intervals may also limit recruitment of obligate resprouters, which also depend on sufficient fire-free periods. Suppressed shrub regeneration may facilitate establishment, or even result in conversion to nonnative annual grasslands (see *Invasive, Nonnative Plants* in this section, below). For example, non-native medusahead (*Elymus caput-medusae*) and yellow starthistle (*Centaurea solstitialis*) can make up a sizeable portion of post-fire vegetation assemblages, especially in drier, warmer areas. These and other nonnative grasses are easily ignited fuels that encourage more frequent wildfire, creating a feedback loop that increases the likelihood of vegetation type conversion. Chaparral recovery from disturbance is slower on serpentine soils and in drier areas, increasing the vulnerability of these areas within the chaparral shrubland cover type.

Coastal Forests

Coastal forests have a limited distribution in the decision area, where they are typically restricted to a narrow band along the coastline and where temperature regimes are relatively stable. Summer coastal fog and marine air flows inland influence distribution of this cover type. For the purposes of this analysis, there are three types of coastal forests in the decision area:

- Patches of short-statured shore pine (*Pinus contorta* var. *contorta*) and other conifers on relatively old, stabilized dune systems along the immediate coastline. Other conifers in these forests include grand fir (*Abies grandis*), Sitka spruce (*Picea sitchensis*), bishop pine (*Pinus muricata*), Douglas-fir (*Pseudotsuga menziesii*), and western hemlock (*Tsuga heterophylla*) (Sims et al. 2019a);
- forests dominated by Sitka spruce and/or grand fir, occurring in areas influenced by coastal fog within about one to three miles of the coastline (Reynier et al. 2019b); and,
- forests dominated by coast redwood (*Sequoia sempervirens*), that are inland of the Sitka spruce/grand fir forests described above (Hilberg et al. 2019a).

Coastal forest habitats provide food, cover, or special habitat elements for numerous wildlife species, including sensitive species (Mayer 1988). Species such as the: California red-legged frog (*Rana draytonii*), ensatina (*Ensatina eschscholtzii*), osprey (*Pandion haliaetus*), ringtail (*Bassariscus astutus*), fisher (*Pekania pennanti*) and marbled murrelet (*Brachyramphus marmoratus*) show a relatively high preference for various coastal conifer forest habitats (see **Section D.2.5, Wildlife**).

In Sitka spruce and/or grand fir and coast redwood forests, habitat integrity and connectivity is generally degraded due to a history of intensive timber harvest, with very few late-successional stands remaining.

Forests dominated by Sitka spruce and grand fir reach the southern extent of their range in the planning area, which indicates that these communities may not be resistant to anticipated warmer and drier conditions in the planning area (Reynier et al. 2019b).

Shifts in precipitation timing and coastal fog duration and extent will alter moisture availability, resulting in altered tree growth, recruitment, and disease risk. Warmer air temperatures will contribute to enhanced water stress as evaporative demand is increased; coastal redwood forests are particularly sensitive to increased water stress (Hilberg et al. 2019a). The prevalence and severity of insect and pathogen (for example, sudden oak death [SOD], see **Map 3-3** in **Appendix A**) outbreaks will be affected and result in changes in species composition, structure, and resulting ecosystem processes. Coastal dune conifer forests are also sensitive to changes in water availability and timing, due to their dependence on a shallow water table; moisture stress and drought can potentially cause plant die-off and subsequent dune mobilization (Sims et al. 2019a).

Sea level rise is likely to alter current forest distribution in some areas. While low-lying areas may be eliminated due to inundation or bluff-top erosion, new areas may be colonized as salt-spray exposure increases in areas where this was not previously experienced.

Coastal prairies

In northern California, coastal prairies are limited to bluff and marine terrace areas in a relatively narrow, discontinuous band along the Pacific coast. These communities are adapted to salt-laden air from sea spray, and salt-accumulating soils. Coastal prairie also occurs in areas below about 3,000 feet further inland (rarely more than about 62 miles), but under maritime influence (Kie 1988; Reynier et al. 2019c; Sims et al. 2019b). Plant communities vary widely within the region depending on microclimate, soil, topography, disturbance history, and historical and contemporary land use. Habitats are often dominated by perennial grass species, such as California oatgrass (*Danthonia californica*), Pacific hairgrass (*Deschampsia cespitosa*), sweet vernalgrass (*Anthoxanthum odoratum*), Kentucky bluegrass (*Poa pratensis*), and forbs like goldfields (*Lasthenia* sp.) and western bracken fern (*Pteridium aquilinum*). Coastal prairie communities often intergrade with scrub, woodland, and forest types to form a mosaic across marine terraces.

Before Euro-American settlement, regular burning of coastal prairies by Tribal communities was common. Burning prevented woody species encroachment, converted shrublands to grasslands, maintained and increased herbaceous plant productivity by reducing competition, and maintained hunting grounds by increasing forage for ungulates (Reynier et al. 2019c). Recurrent wildland fire likely maintained grasslands by limiting shrub encroachment, and also limited tree encroachment in coastal scrub stands (Sims et al. 2019b).

Coastal prairies provide habitat for many wildlife species, including large herbivores like: Roosevelt elk (*Cervus elaphus roosevelti*) and black-tailed deer (*Odocoileus hemionus*), foraging habitat for numerous raptor species like red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and northern harrier (*Circus hudsonius*), nesting and foraging habitat for migratory bird species, and habitat for common reptiles and small mammals (Kie 1988). (See **Section D.2.5**, Wildlife, for more information.)

Coastal prairies are sensitive to water availability. Changes in precipitation and soil moisture are likely to alter species composition and distribution. In some coastal prairie grasslands, bluff erosion resulting from sea level rise will eliminate habitat. Coastal prairies are susceptible to woody vegetation encroachment in

the absence of periodic disturbances such as wildland fire, which can slow tree encroachment into herbaceous prairies and increase vegetation productivity in burned areas (Reynier et al. 2019c).

Douglas-fir and Tanoak-dominated Forest

Douglas-fir and tanoak-dominated forests are distributed inland of the fog belt and associated coastal forests described above, at relatively low elevations in the decision area. Douglas-fir habitat occurs in the north Coast Ranges from Sonoma County north to the Oregon border and in the Klamath Mountains of California and Oregon. This habitat usually occurs at elevations from 500 to 3,500 feet in the Coast Ranges and from 1,000 to 4,000 feet in the Klamath Mountains (Raphael 1988).

Douglas-fir is frequently the dominant or co-dominant species in the overstory, while tanoak is generally the most abundant and characteristic hardwood species in this forest type (Hilberg et al. 2019b). Overstory composition varies with soil parent material, moisture, topography, and disturbance history. Rocky, dry soils support Douglas-fir, tanoak, and Pacific madrone as dominant species in association with sugar pine (*Pinus lambertiana*), ponderosa pine (*Pinus ponderosa*), black oak (*Quercus kelloggii*), and canyon live oak (*Quercus chrysolepis*). Deeper, mesic soils support an overstory of Douglas-fir with a tanoak-dominated understory. Wettest sites also include western hemlock, Pacific yew (*Taxus brevifolia*) and, less consistently, Port-Orford cedar (*Chamaecyparis lawsoniana*) (Raphael 1988).

Douglas-fir and tanoak-dominated forests support an abundance of wildlife species, including higher bird diversity than other North American forest types. This forest type also supports a diversity of mammals, amphibians and reptiles, as discussed in **Section D.2.5, Wildlife**.

Douglas-fir and tanoak-dominated forests are sensitive to factors that increase water demand (such as air temperature) or decrease water availability (such as soil moisture, precipitation, and drought), and resulting changes in the water balance from these factors can alter patterns of tree growth and mortality and shift species composition, forest structure, and regeneration (Hilberg et al. 2019b).

Douglas-fir and tanoak-dominated forests were historically maintained through frequent wildland fire, which included both natural ignitions, and cultural burning by Native American Tribes. Changes in the frequency, timing, and/or intensity of wildfire may cause higher tree mortality, especially in stands affected by SOD and drought-stressed stands. Euro-American settlement era commercial logging (see **Section D.3.1, Forestry**), followed by decades of wildfire suppression (see **Section D.2.8, Wildland Fire Management**), has altered forest structure, and increased vulnerability to disturbance-related mortality, including from wildfire.

Dunes

Coastal dunes typically include several zones with differing vegetation communities based on exposure to sand movement and wind as well as land management actions. These zones are the foredunes that support dune mat vegetation, low-lying swales (some of which are seasonally filled with water), deflation basins of parabolic dunes, sandy plains, and migrating dune fields that are inland of the foredunes, that support herbaceous and some woody scrub vegetation.

In northern California, the foredune may be partially to fully stabilized by low-growing annual and perennial forbs and grasses known as dune mat vegetation. Common dune mat species include sand verbena (*Abronia latifolia*), silver beachweed (*Ambrosia chamissonis*; also called beach bur), beach knotweed (*Polygonum*

paronychia), and coast buckwheat (*Eriogonum latifolium*) (Sims et al. 2019a). Many semi-stable coastal dunes in northern California also have been extensively colonized by nonnative species, including European beach grass (*Ammophila arenaria*), yellow bush lupine (*Lupinus arboreus*; which is native south of Sonoma County, but it considered to be invasive in the planning area), iceplant (*Carpobrotus edulis*), European hairgrass (*Aira praecox*), and squirreltail fescue (*Vulpia bromoides*). Landward of many foredune systems, low-lying swales support herbaceous and woody wetland vegetation, including patches of slough sedge (*Carex obnupta*) and coastal dune willow (*Salix hookeriana*) thickets.

High physical and structural diversity in coastal dune systems supports a diverse mix of wildlife species. Several wildlife species and domestic or feral animals may also be problematic in coastal dune systems, especially for nesting shorebird species like the western snowy plover (*Charadrius alexandrinus nivosus*), as discussed in **Section D.2.5, Wildlife**. These species include gulls, ravens, foxes, coyotes, dogs, feral cats, skunks, and raccoons; occurrences of these species are typically associated with nearby human development.

This system is subject to harsh conditions, including: a low-nutrient (sandy) substrate, airborne salt spray, desiccating summer winds and gale-force winter storms, fluctuating water tables, and periodic abrasion, erosion, and burial by windblown sand. As discussed in the *Coastal Forest* section above (for shore pine forests on stabilized dunes), the dune vegetation cover type is sensitive to changes in water availability and timing. Altered precipitation patterns may also facilitate expansion of invasive European beach grass, which is more tolerant of summer drought than most native foredune species.

While coastal dune systems are adapted to and formed by natural disturbances, rapid, prolonged, or other uncharacteristic changes in these disturbance regimes are anticipated to alter these systems (Sims et al. 2019a). For instance, sea level rise, combined with wind and waves associated with more frequent and/or more intense storms, may accelerate dune erosion, loss of dune mat vegetation, and dune remobilization. Invasive European beach grass has over stabilized dunes, limiting their resilience, that is, the ecological and geomorphic functions and processes necessary to recover quickly from disturbance events and, over the longer-term, migrate landward with sea level rise.

Fallow Fields and Croplands

This vegetation cover type includes areas that were used historically, or are currently used, for agricultural crop production, including tree orchards. In the decision area, this includes walnut orchards, as well as degraded, fallow fields that are often invaded by nonnative, invasive plant species. Nonnative, invasive plant species commonly encountered in these areas include yellow starthistle (*Centaurea solstitialis*), black mustard (*Brassica nigra*), field bindweed (*Convolvulus arvensis*), Himalayan blackberry (*Rubus armeniacus*), and others. Fallow fields and croplands in the decision area are typically located on floodplains associated with riparian areas in the Central Valley, with deep, rich soils. Often, they are in areas that were historically riparian woodlands, that were converted during Euro-American settlement for agricultural production.

Foothill Pine and Oak Woodland

The range of this habitat generally rings the foothills of the Central Valley of California between about 500 and 3,000 feet in elevation. The Pit River drainage in the Cascade Range and the foothills of the Klamath Mountains mark the approximate northern limit. The habitat occurs in a typically Mediterranean climate with hot, dry summers and cool, wet winters (Verner 1988).

Foothill pine and oak woodlands are structurally diverse, with a mix of hardwoods, conifers, and shrubs. Blue oak (*Quercus douglasii*) and foothill pine (*Pinus sabiniana*) typically comprise the overstory, with blue oak usually most abundant (stands dominated by foothill pine tend to lose their blue oak over time, which is intolerant of shade). In the Sierra Nevada foothills, associated trees are interior live oak (*Quercus wislizeni* var. *wislizeni*) and California buckeye (*Aesculus californica*). In the Coast Range, associated trees are coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), and California buckeye. The shrub component is typically composed of several species that tend to be clumped with interspersed patches of annual grassland (see *Grasslands, Vernal Pools, and Wetlands* below for more information on the annual grassland cover type). Shrub species include: ceanothus, manzanitas, redberry (*Rhamnus crocea*), California coffeeberry (*Rhamnus californica*), poison-oak (*Toxicodendron diversilobum*), and others. At lower elevations, where blue oaks make up most of the canopy, the understory can be primarily annual grasses and forbs, though this varies by location. At higher elevations where foothill pines and even interior live oaks sometimes comprise the canopy, the understory usually includes higher shrub cover in addition to the annual grasses and forbs (Verner 1988).

Foothill pine and blue oak woodlands provide breeding habitats for a large variety of wildlife species, although no species is totally dependent on them for breeding, feeding, or cover. Snags are less common, and hence less critical to wildlife, in this than in other forest types. Most species of cavity-nesting birds, for example, use living oaks. The cavities are often in scars where limbs have broken from the trunk, or a main branch and they have developed a level of decay that makes them more easily excavated by primary cavity nesters. Blue oaks produce an abundant seed (acorn) crop every few years, and acorns are an important food resource for many species of birds and mammals (Verner 1988). (See **Section D.2.5, Wildlife**, for more information).

The structure and distribution of foothill pine and oak woodland was enhanced and maintained by routine cultural burning prior to Euro-American settlement (Hilberg et al. 2019d; see **Section D.5.3, Tribal Interests**). Regular burning was used to encourage structural heterogeneity for enhanced species diversity and habitat value, as well as encourage production of valued species and materials.

Foothill pine and blue oak woodlands are likely sensitive to climate stressors that reduce water availability, including changes in precipitation amount and timing, reduced soil moisture, and increased drought. Reduced moisture availability reduces acorn germination and seedling and sapling survival, ultimately determining oak recruitment rates and distribution on the landscape. Water stress also reduces tree vigor, enhancing vulnerability to disturbances. Changes in the frequency and intensity of wildfires may increase rates of tree mortality, preventing successful oak sapling recruitment and subsequent acorn production and potentially leading to the conversion of oak woodlands to chaparral and grasslands (Hilberg et al. 2019d).

Grasslands, Vernal Pools, and Wetlands

Northern California grassland types include interior (valley) grasslands, coastal prairie grasslands (see Coastal prairies, above), and serpentine grasslands (found as discrete habitats on serpentine soils) (Reynier et al. 2019c). Across these grassland habitat types, vegetation includes perennial and annual native and nonnative species, and most native vegetation is drought- and fire-adapted.

Interior or valley grassland distribution includes the northern portion of the Central Valley, up to about 2,300 feet in the surrounding foothills. On non-serpentine soils, interior grasslands are typically dominated

by nonnative annual forbs, including broadleaf filarees (*Erodium* spp.) and nonnative grasses, including soft brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), barbed goat grass (*Aegilops triuncialis*), and medusahead (*Elymus caput-medusae*). Some native perennial grasses persist, including purple needlegrass (*Stipa pulchra*), valley wild rye (*Elymus triticoides*), blue wild rye (*Elymus glaucus*), and California brome (*Bromus carinatus*), albeit with limited growth, survival and seed establishment due to competition with non-native species (Reynier et al. 2019c).

Serpentine grasslands predominately occur in the Northern Coast Range, the Northern Interior Coast Range, the Klamath Mountains, and the northernmost Sierra Nevada foothills. They typically occur as “islands” on shallow slopes and alluvial valleys interspersed in a matrix with other, more dominant woody serpentine communities, like chaparral (see *Chaparral Shrubland*) and conifer woodlands (see *Knobcone and Rare Cypress*). Serpentine grasslands are characterized by ultramafic soils with low macronutrients and calcium levels, very high magnesium and iron, and generally rocky and dry conditions. Flora is adapted to the unique soil conditions, and it exhibits a high degree of endemism. Most serpentine sites are dominated by native annual forbs, and they may also include native perennial and annual grasses like needlegrasses (*Stipa* spp.) and small fescue (*Festuca microstachys*), as well as nonnative, invasive annual grasses (Reynier et al. 2019c).

Embedded within the grassland matrix are a type of seasonal wetland – the vernal pool – common in the foothill grassland habitats in the Sacramento Valley and also scattered in Mendocino and Lake Counties (Sims et al. 2019c). Unlike many other wetland types which are hydrologically supplied by groundwater or perennial stream systems, vernal pools are isolated from ground and surface water sources, and they are entirely dependent on precipitation. The relatively short wet period followed by a long period of drying each year that characterizes vernal pools supports high biodiversity and unique species assemblages composed of specialized plants adapted to annual cycles of inundation and desiccation. These include showy flowering annuals such as goldfields (*Lasthenia fremontii*) and downingias (*Downingia* spp.) and many endemic and rare species, such as slender Orcutt grass (*Orcuttia tenuis*); slender Orcutt grass is discussed in more detail below in *Special Status Plants*.

Many wildlife species use grassland habitats for foraging, but some require special habitat features such as cliffs, caves, ponds, or habitats with woody plants for breeding, resting, and escape cover. Vernal pools support a high biodiversity and unique species assemblages composed of specialized invertebrates and amphibians that are adapted to annual cycles of inundation and desiccation. These include many endemic and rare species, such as fairy shrimp (*Branchinecta lynchi*). The relatively short hydroperiods of vernal pools tend to exclude predatory fish and invertebrates due to their longer life cycles, so vernal pools are frequently utilized by amphibians such as the western spadefoot toad (*Spea hammondi*) and the pacific chorus frog (*Pseudacris regilla*) for breeding (Sims et al. 2019c). (See **Section D.2.5**, Wildlife, for more information.)

Grasslands in the planning area, including inland perennial and annual grasslands (Coastal prairie grasslands are discussed in Coastal prairies above) are sensitive to climate stressors like precipitation amount and timing, soil moisture, drought, and air temperature, that alter plant germination and phenology, recruitment, and growth (Reynier et al. 2019c). These stressors can influence grassland distribution, and shift community composition and function, potentially increasing the already extensive dominance of invasive, nonnative annual grass species. Shifts in plant phenologies can lead to a mismatch with pollinator life cycles, having impacts on plant diversity and pollinator populations.

Prior to Euro-American settlement, regular burning of mixed grasslands by Native American communities was common, particularly in coastal areas (Reynier et al. 2019c). While many native grassland species are fire adapted, the effects of wildland fire are variable and highly dependent on burning timing, frequency, and severity. Increasing wildfire, including in vegetation cover types adjacent to grasslands, will likely expand grassland extent, although resulting new grassland areas will primarily be composed of invasive, nonnative annual species, especially in areas that burn with increased frequency and intensity. Livestock grazing and other anthropogenic land use disturbances can increase the competitive advantage of nonnative, invasive plant species, further impacting grassland composition and function.

Vernal pool vegetation assemblages are vulnerable to climate stressors that alter hydrology conditions. These stressors are primarily warmer air temperatures and changes in precipitation amount and timing, which can impact vernal pool size, persistence (period of inundation or saturation), and plant composition and diversity. Anthropogenic disturbances including loss of vernal pools from land use changes and vegetation impacts from overgrazing can exacerbate climate vulnerabilities.

Juniper and Sage

Juniper habitats are characterized as woodlands of open to dense aggregations of junipers in the form of shrubs or small trees. Western juniper (*Juniperus occidentalis*) occurs primarily on the Modoc Plateau and Great Basin of northeastern California, and mountain juniper (*Juniperus communis*) is found in the higher elevations of the Sierra Nevada and Yolla Bolly Mountains of northern California. California juniper (*Juniperus californica*) stands are located in the interior coast ranges of northern and central California and the Sierra Nevada foothills in the planning area and are also distributed in southern California. Juniper stands are on valley bottoms, slopes, alluvial fans, steep and rocky escarpments, on various, but often shallow soils. Young junipers are fire-sensitive and find refuge from wildfire on rocky sites (Laudenslayer, Jr. 1988). Sagebrush habitat is found in the east and northeast portions of California, on dry slopes and flats from about 1,600 to 10,500 feet in elevation (Neal 1988).

Juniper habitats are woodlands of open to dense aggregations of junipers (particularly western juniper and mountain juniper in the planning area) in the form of shrubs or small trees. Stands can be small clumps to widely scattered single plants. Associated tree and shrub species, depending in part on species of juniper and its distribution, include white fir (*Abies concolor*), Jeffrey (*Pinus jeffreyi*) and ponderosa pine, curl leaf mountain-mahogany, antelope bitterbrush (*Purshia tridentata*), and big sagebrush (*Artemisia tridentata*). In denser stands, there is usually a grassy understory, but in open stands, a shrub understory is usually present (Laudenslayer, Jr. 1988).

Often in the planning area, the shrub understory is dominated by big sagebrush. Sagebrush stands are often mixed with other species of shrubs of similar form and growth habit, like: rabbitbrush (*Ericameria* spp. or *Chrysothamnus* spp.), horsebrush (*Tetradymia* spp.), gooseberry (*Ribes* spp.), curl leaf mountain mahogany, and antelope bitterbrush. In undisturbed sites with more moisture, sagebrush stands have an understory of perennial grasses and forbs. After disturbance and during years with excess moisture, annual grasses such as cheatgrass (*Bromus tectorum*) and medusahead invade sagebrush stands (Neal 1988).

Juniper and sage habitats are important for wildlife (see **Section D.2.5, Wildlife**). Juniper berries are an important food source for wintering birds and the foliage is eaten by several mammals and they may be an important food source for some of these animals, especially during harsh winters (Laudenslayer, Jr. 1988). Sagebrush is also a major winter-range type for migratory mule deer, and principal habitat for

pronghorn (*Antilocapra americana*). Sagebrush is a year-round habitat for many small mammals, migratory birds, and raptors (Neal 1988).

Knobcone

Knobcone pines (*Pinus D-7/tenuate*) are adapted to dry conditions; these species occur in the decision area in harsh, dry sites with serpentine or volcanic substrates, along ridges, steep slopes, and other dry areas. These habitats usually occur as patches in the surrounding matrix of chaparral or forest (Jensen 1988). Most pine stands have a shrub layer of chaparral species with high relative cover, and a sparse herbaceous layer.

Knobcone pine depends on wildland fire for recruitment. It is a serotinous species, which means it depends on heat from fire for seed release and stand regeneration (Sims et al. 2019d). After moderate to severe fire, knobcone pines form dense, even-aged stands. As the stand matures, the density decreases, but single species site dominance is common. After germination, trees can produce seed cones as soon as three years. Uneven-aged stands may occur where low-intensity fire allows both seedling recruitment and the survival of some mature trees. This cover type is relatively widespread in the planning area. Anticipated wildfire increase in the planning area due to climate change may increase stand distribution, including in existing stands that are in poor condition due to wildland fire exclusion.

Rare Cypress

Cypresses (Baker cypress [*Cupressus bakeri*], MacNab cypress [*Cupressus macnabiana*], and Sargent's cypress [*Cupressus sargentii*]) are adapted to dry conditions; these species occur in the decision area in harsh, dry sites with serpentine or volcanic substrates, along ridges, steep slopes, and other dry areas. These habitats usually occur as patches in the surrounding matrix of chaparral or forest (Jensen 1988). Cypress stand understory is typically a well-developed shrub layer of chaparral species like chamise and manzanita on open, well-drained sites, and a low, dense cover of shrubs and herbs on poorly drained soils.

Like knobcone pine, cypresses also depend on fire for seed release and stand generation (Sims et al. 2019d). However, these species are typically slower to reach cone-producing age following fire. As a result, the frequency and timing of fire is critical for the maintenance of populations. Stand extirpation can occur if regenerating areas burn in subsequent fires, killing seedlings before they mature and produce cones. Further, cypress stands are relatively limited in extent in the decision area. Anticipated wildfire increases due to climate change may threaten stand persistence.

Late Successional Forest

Although late successional stands occur in drier forest types in the planning area, including mixed conifer, they are most common within Douglas-fir and tanoak-dominated forest (see *Douglas-fir and Tanoak-dominated forest*) and coastal redwood forest (see *Coastal forests*). Late-successional forests supply unique habitat features for a suite of dependent wildlife species, primarily cavities in large-diameter and decadent trees, snags, and logs (Reynier et al. 2019d). Climate change vulnerabilities in these vegetation cover types are generally described above for these cover types, however, since development of late-successional conditions can take centuries, such conditions can be eliminated by disturbances such as uncharacteristically severe wildfire at a faster rate than they develop. Further, climate-related changes to late-successional conditions are likely to lag in time behind climate changes. This is because the microrefugia that are often inhabited by late-successional stands may buffer the effects of changes in climate. Examples are cold-air pooling or inversion areas, riparian areas and valley bottoms, shaded, north-

facing slopes, and high-elevation sites that receive more precipitation than surrounding areas (Olson et al. 2012). Late-successional stands themselves can also buffer air temperature increases relative to more homogenous mature forest plantations and serve as temperature microrefugia (Frey et al. 2016).

Mixed conifer

Mixed conifer forest is characterized by a combination of co-dominant conifer species, including ponderosa pine, Douglas-fir, white fir, sugar pine, Jeffrey pine, lodgepole pine (*Pinus contorta*), red fir (*Abies magnifica*) and incense-cedar (*Calocedrus decurrens*). Within the Klamath Mountains and North Coast region, Douglas-fir is a characteristic dominant species, often with a diverse mix of conifers. Black oak is a primary hardwood species, and in stands with frequent wildland fire, can come to dominate. Other hardwoods, like canyon live oak, giant chinquapin (*Chrysolepis chrysophylla*), Pacific madrone, bigleaf maple (*Acer macrophyllum*), and Oregon white oak (*Quercus garryana*), are common (Hilberg et al. 2019c).

These forest types are extensive in Northern California, covering many low- to mid-elevation montane areas between 1,000 and 6,000 feet in elevation. Species composition and forest structure can change dramatically within short distances, depending on disturbance history, geology and soil, topography, elevation, temperature, and precipitation factors. Both dry and moist forest types occur, with species composition and disturbance regimes generally based on site characteristics that affect water balance. Moist mixed conifer forests are typically found in higher elevation areas and areas where annual precipitation is relatively high (generally over about 40 inches). Late-successional characteristics are found in mature stands across the region (Hilberg et al. 2019c).

Mixed conifer and ponderosa forests support hundreds of wildlife species, including many that depend on late-successional habitat characteristics, such as the Pacific fisher, northern spotted owl (*Strix occidentalis caurina*), and northern Goshawk (*Accipiter gentilis*) (see **Section D.2.5**, Wildlife). Many plant and wildlife species within mixed conifer forests also hold cultural value for Northern California Tribes (see **Section D.5.3**, Tribal Interests), and Tribes depend on cultural burning practices to increase Traditional use productivity and predictability (Hilberg et al. 2019c).

Fire is a primary driver within mixed conifer forests (Hilberg et al. 2019c). Fire dynamics prior to Euro-American settlement and the wildfire suppression era included substantially more frequent, and less intense wildland fire, including both wildfire and cultural burning. Structural diversity in mixed conifer forests has declined following a century of selective logging and wildfire suppression, resulting in higher densities of small trees and associated increases in vulnerability to climate stressors. Mixed conifer forests are primarily vulnerable to climate stressors that increase water demand (for example, warmer air temperatures and heat waves) or decrease water availability (for example, reduced precipitation amount, earlier timing of snowmelt/runoff, reduced soil moisture, and drought). These stressors increase wildfire potential by reducing fuel moisture, increasing the potential for insect and disease outbreaks, increase tree mortality, shift species composition and forest structure, and delay or suppress recovery following wildfire.

Oak Savannas and Open Woodlands

These are oak-dominated habitats of blue oak, valley oak, interior live oak, and Oregon white oak, both in savanna settings (scattered trees with less than 25 percent canopy cover) and open woodlands (between 25 and 50 percent canopy cover) (Hilberg et al. 2019d).

Oak savannas and woodlands are extensive within the interior Coast Range and Sacramento Valley, often with foothill pine as a co-dominant species (see *Foothill Pine and Oak Woodland* above). Blue oak savannas and woodlands are the most widespread types, and they are generally found on warmer, drier sites. Interior live oak is most common in the southern Klamath Mountains and Coast Ranges, and it is often associated with blue oak woodlands and chaparral. Valley oak woodlands occur in riparian areas and floodplains with deep alluvial soils, primarily in the Sacramento Valley and Coast Ranges. Oregon white oak habitats are scattered throughout the coastal forest zone, along river corridors, and within lower montane forests in the Klamath region (Hilberg et al. 2019d).

Oak savannas and open woodlands are highly valued by Northern California Tribes for acorn harvest and other Traditional uses (see **Section D.5.3**, Tribal Interests). Contemporary oak savannas and open woodlands have existed since the last glacial period, and their structure and distribution has been enhanced and maintained by routine cultural burning, a process that creates and maintains habitat for a diverse suite of plant and wildlife species and habitats (Hilberg et al. 2019d).

Oak savannas and woodlands are primarily sensitive to climate stressors that reduce water availability, including changes in precipitation amount and timing, reduced soil moisture, and increased drought. Reduced moisture availability reduces acorn germination and seedling and sapling survival, ultimately determining oak recruitment rates and distribution on the landscape. Water stress also reduces tree vigor, enhancing vulnerability to disturbances. Oaks are well-adapted to low- and moderate-intensity wildland fires, which maintain the open settings of savannas and open woodlands by limiting encroaching shrub and conifer species (Engber et al. 2011, Perry et al. 2011).

However, changes in the frequency and intensity of wildfires may increase rates of tree mortality, preventing successful oak sapling recruitment and subsequent acorn production and potentially leading to the conversion of oak woodlands to chaparral and grasslands.

Valley Foothill Riparian

Rivers and streams in the planning area are diverse habitats that occur in coastal and inland areas and receive precipitation input from both snowmelt and rainwater, typically characterized by high winter and low summer flows and biota adapted to high inter-annual flow variability and frequent disturbances (Loose et al. 2019; also see **Section D.2.3**, Water Resources). Floodplain and riparian areas associated with rivers and streams in the planning area support a diverse assemblage of hardwood trees and shrubs, including: bigleaf maple, white alder (*Alnus rhombifolia*), red alder (*Alnus rubra*), Oregon ash (*Fraxinus latifolia*), Fremont's cottonwood (*Populus fremontii*), valley oak, willows (*Salix* spp.), and others (Loose et al. 2019). These areas also support many special status wildlife species in the decision area, like yellow-billed cuckoo (*Coccyzus americanus*) and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), as described in **Section D.2.5**, Wildlife.

Valley foothill riparian habitats provide food, water, migration and dispersal corridors, and escape, nesting, and thermal cover for an abundance of wildlife. Many wildlife species are permanent residents, others are transient or temporal visitors (Grenfell, Jr. 1988). These systems are also of critical importance to Northern California Tribes, who depend on aquatic ecosystems for aquatic and riparian plants, fish, and wildlife species used for subsistence and cultural purposes (see **Section D.5.3**, Tribal Interests).

Rivers, streams, and floodplains (and the riparian vegetation cover types therein) are sensitive to climate stressors that alter hydrology (for example, stream flow volume and temporal variability), and water

quality; these can include warmer air and water temperatures, changes in precipitation amount and timing, reduced snowpack amount, earlier timing of snowmelt and runoff, altered streamflows, more heat waves, and increased drought. Additionally, reduced soil moisture and increased climatic water deficit may lead to changes in the structure, composition, and distribution of riparian vegetation. Riparian areas are naturally dynamic, but more frequent and/or more severe disturbance events anticipated to occur as a result of climate change may have greater impacts on riparian habitat structure and ecosystem processes (Loose et al. 2019). Due to agricultural and other forms of development and hydrological modification, many valley and foothill riparian communities are already functioning in a reduced capacity, which increases vulnerability to stresses from climate change.

Trends and Forecast

Fire is a primary driver of vegetation type change. High-severity wildfires have recently burned large portions of the planning area (see **Section D.2.8**, Wildland Fire Management), affecting vegetation types and trajectories. Depending on burn severity and given anticipated future climate conditions (discussed in more detail below), some burned areas may not return to their previous vegetation assemblages due to climate change vulnerabilities (Thorne et al. 2016).

Vegetation trends in the planning area are variable. For example, where active management is being carried out, some coastal or vulnerable plant communities are improving in condition and function. This is due to invasive, nonnative plant removal and other management actions. In contrast, conifer-dominated forests susceptible to drought stress, insects and pathogens, and reduced water availability are shifting towards reduced function and resilience from future disturbance.

Climate change will affect vegetation on the BLM-administered lands in the planning area. Recent climate trend projections for northern California indicate increased air temperature, shorter, wetter winters and longer, drier summers, and increased incidence of heat waves, drought, and wildfire (Hilberg and Kershner 2021, Table 1). Summaries of anticipated effects to specific vegetation cover types are described for vegetation cover types above. A detailed discussion of forecast vegetation extent within California ecological subregions in response to anticipated climate change scenarios (Lenihan et al. 2003; Lenihan et al. 2008; Safford et al. 2012) is included in Section 2.2.13, Vegetation, in the AMS (BLM 2021a).

Riparian Management Areas

The Aquatic Conservation Strategy from the 1994 NWFP was established and provides management direction for riparian management areas. Riparian management areas are currently managed to maintain and restore riparian habitats in the NWFP area according to conservation strategy goals and objectives. Riparian management areas are also currently managed in several of the management areas in the existing Redding and Arcata RMPs, as summarized in Chapter 3 of the AMS (BLM 2021a). Riparian management area widths are applied to both sides of the stream channel, as illustrated in **Figure D-4**, below.

Notable waterways on BLM-administered lands within the planning area are the: Eel, Mattole, Smith, Mad, Sacramento, Klamath, Pit, Scott, Shasta, and Trinity Rivers as well as: Clear, Mill, Deer, Battle, Butte, Cow, and Cottonwood Creeks (BLM 2021a, Table 2-9).

Figure D-4
Riparian Management Area Widths for Streams

300 feet or two site potential tree-heights; whichever is greatest.	150 feet or one site-potential tree height; whichever is greatest.	100 feet or one site-potential tree height; whichever is greatest.
All fish-bearing streams	Non fish-bearing perennial streams	Non fish-bearing intermittent and ephemeral streams

Source: BLM 2024

The BLM also manages human-made reservoirs and ponds, natural seeps and springs, bedrock basins, stock ponds, modified and natural vernal pools, and wetland complexes, which would also be included in riparian management areas. Notable lentic (still-water) systems, including wetlands and waterbodies, are summarized in Table 2-11 of the AMS (BLM 2021a, p. 2-41), Notable Lentic Systems on BLM-Administered Lands within the NCIP Planning Area. Additional details on river, stream, pond, and wetland areas on the BLM-administered lands in the planning area can be found in **Section D.2.3, Water Resources**.

Special Status Plants

Special Status Plants

The planning area is geographically and ecologically diverse, spanning portions of seven ecoregions (BLM 2021a p. 2-115). A total of 202 potential special status plant species occur within the seven ecoregions (BLM 2021a, p. 2-94).

Special status plant species are those that have the following characteristics:

- They have been proposed for listing under provisions of the ESA or are listed as threatened or endangered (16 USC 1531–1534).
- They are candidates for listing as threatened or endangered under the provisions of the ESA and are managed as the BLM sensitive species under Manual 6840, Special Status Species Management.
- They have been delisted for a minimum of 5 years and they are managed as the BLM sensitive species.
- They have been designated by the BLM California State Director as sensitive.²

Currently, there are five federally listed vascular plant species and 44 BLM special status plant species likely to occur on the BLM-administered land within the planning area. These species are listed in **Table**

² The BLM California State Director has conferred sensitive status on California State endangered, threatened, and rare species; on species with a California Native Plant Society (CNPS) California Rare Plant Rank of 1B (plants rare, threatened, and endangered in California and elsewhere) on the Special Vascular Plants, Bryophytes, and Lichens List maintained by the CDFW (CNDDDB 2023) that are on the BLM-administered lands or affected by the BLM actions and that are not already special status plants by virtue of being federally listed or proposed (unless specifically excluded by the BLM California State Director on a case-by-case basis); and on certain other plants the BLM California State Director believes meet the definition of sensitive. Additional information on California Rare Plant Rank and the Natural Heritage Program global and state ranking, which provides additional context as to how narrowly or broadly rare a given species is when compared to CNPS rankings, can be found in the AMS (BLM 2021a, pp. 2-97 to 2-98).

D-8, Special Status Plants Known from BLM-Administered Lands, which includes general information on where they are known from on the BLM-administered lands in the planning area.

Federal-listed plant species on the BLM-administered lands in the planning area generally occupy unique or rare habitat types, including several that are considered to be vulnerable vegetation communities tracked by the CDFW (see **Table D-10, Vulnerable Vegetation Communities** below). These areas also provide suitable habitat for many of the other special status plant species listed in **Table D-8**.

Table D-8
Special Status Plants Known from BLM-Administered Lands

Common Name	Scientific Name	Status ¹	BLM Field Office	BLM Management Area ²
Pink sand-verbena	<i>Abronia</i> including var. <i>breviflora</i>	G4G5T2/S2 IB.1	Arcata	Samoa Peninsula
McDonald's rockcress	<i>Arabis mcdonaldiana</i>	FE G3S3 IB.1	Arcata	Red Mountain
Coastal marsh milk-vetch	<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	G2T2/S2 IB.2	Arcata	Scattered tracts
Woolly balsamroot	<i>Balsamorhiza lanata</i>	G3/S3 IB.2	Redding	Klamath, Scott Valley, Trinity
Big-scale balsamroot	<i>Balsamorhiza macrolepis</i>	G2/S2 IB.2	Redding	Ishi, Yolla Bolly
Sulphur creek brodiaea	<i>Brodiaea matsonii</i>	G1/S1 IB.1	Redding	Shasta
Indian Valley brodiaea	<i>Brodiaea rosea</i> ssp. <i>rosea</i>	G2/S2 3.1	Redding	Yolla Bolly
Greene's mariposa lily	<i>Calochortus greenei</i>	G3/S3 IB.2	Redding	Klamath
Fingered morning-glory	<i>Calystegia collina</i> ssp. <i>tridactylosa</i>	G4T1/S1 IB.2	Arcata	Covelo vicinity
Humboldt Bay owl's-clover	<i>Castilleja ambigua</i> var. <i>humboldtiensis</i>	G4T2/S2 IB.2	Arcata	Scattered tracts
Shasta chaenactis	<i>Chaenactis suffrutescens</i>	G3/S3 IB.3	Redding	Klamath, Scott Valley, Trinity, Yolla Bolly
Dwarf soaproot	<i>Chlorogalum pomeridianum</i> var. <i>minus</i>	G5T3/S3 IB.2	Redding	Yolla Bolly
Pt. Reyes birds-beak	<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	G4T2/S2 IB.2	Arcata	Scattered tracts
Shasta clarkia	<i>Clarkia borealis</i> ssp. <i>arida</i>	G3T2/S2 IB.1	Redding	Ishi
White-stemmed clarkia	<i>Clarkia gracilis</i> ssp. <i>albicaulis</i>	G5T2/S2 IB.2	Redding	Ishi, Yolla Bolly
Mosquin's clarkia	<i>Clarkia mosquinii</i>	G2/S2 IB.1	Redding	Ishi
Red Mountain buckwheat	<i>Eriogonum kelloggii</i>	G2/S2 IB.2	Arcata	Red Mountain
Silky cryptantha	<i>Cryptantha crinite</i>	G2/S2 IB.2	Redding	Ishi, Sacramento River, Shasta, Yolla Bolly

Common Name	Scientific Name	Status ¹	BLM Field Office	BLM Management Area ²
Clustered lady's slipper	<i>Cypripedium fasciculatum</i>	G4/S4 4.2	Redding	Trinity
Mountain lady's slipper	<i>Cypripedium montanum</i>	G4/S4 4.2	Redding	Trinity
Brandegee's Eriastrum	<i>Eriastrum brandegeae</i>	G1/Q/S1 IB.1	Redding	Trinity, Yolla Bolly
Menzies' wallflower	<i>Erysimum menziesii</i>	FE G1/S1 IB.1	Arcata	Samoa Peninsula
Stony Creek spurge	<i>Euphorbia ocellata</i> ssp. <i>rattanii</i>	G4T1T2/S1S2 IB.2	Redding	Ishi, Yolla Bolly
Scott Mountain bedstraw	<i>Galium serpenticum</i> ssp. <i>scotticum</i>	G4G5T2/S2.2 IB.2	Redding	Klamath, Scott Valley, Shasta, Trinity
Mendocino gentian	<i>Gentiana setigera</i>	G2/S1 IB.2	Arcata	Red Mountain
Pacific gilia	<i>Gilia capitata</i> ssp. <i>pacifica</i>	G5T3/S2 IB.2	Arcata	Lacks Creek
Dark-eyed gilia	<i>Gilia millefoliata</i>	G2/S2 IB.2	Arcata	Samoa Peninsula
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	G2/S2 IB.2	Redding	Ishi, Yolla Bolly
Stebbins's harmonia	<i>Harmonia stebbinsii</i>	G2/S2 IB.2	Redding	Yolla Bolly
Short-leaved evax	<i>Hesperevax sparsiflora</i> ssp. <i>brevifolia</i>	G4T2T3/S2S3 IB.2	Arcata	Samoa Peninsula
Tehama County western flax	<i>Hesperolinon tehamense</i>	G2/S2 IB.3	Redding	Yolla Bolly
Red Bluff dwarf rush	<i>Juncus leiospermus</i> var. <i>leiospermus</i>	G2T2/S2 IB.1	Redding	Ishi, Sacramento River, Shasta, Yolla Bolly
Beach layia	<i>Layia carnosa</i>	FT G2/S2 IB.1	Arcata	Samoa Peninsula
Legenere	<i>Legenere limosa</i>	G2/S2 IB.1	Redding	Ishi, Sacramento River, Shasta, Yolla Bolly
Heckner's lewisia	<i>Lewisia cotyledon</i> var. <i>heckneri</i>	G4T3/S3? IB.2	Redding	Ishi, Klamath, Trinity
Western lily	<i>Lilium occidentale</i>	FE G1G2/S1 IB.1	Arcata	Red Mountain
Slender Orcutt grass	<i>Orcuttia tenuis</i>	FT G2/S2 IB.1	Redding	Ishi; Sacramento River; Shasta
Cut-leaved ragwort	<i>Packera eurycephala</i> var. <i>lewisrosei</i>	G4T2/S2 IB.2	Redding	Ishi
Ahart's paronychia	<i>Paronychia ahartii</i>	G2/S2 IB.1	Redding	Ishi, Sacramento River, Yolla Bolly
Scott Valley phacelia	<i>Phacelia greenei</i>	G2/S2 IB.2	Redding	Scott Valley, Trinity

Common Name	Scientific Name	Status ¹	BLM Field Office	BLM Management Area ²
Hall's rupertia	<i>Rupertia hallii</i>	G2G3/S2S3 IB.2	Redding	Ishi
Sanford's arrowhead	<i>Sagittaria sanfordii</i>	G3/S3 IB.2	Redding	Ishi, Sacramento River, Shasta
Red Mountain stonecrop	<i>Sedum laxum</i> ssp. <i>eastwoodiae</i>	G5T2/S2 IB.2	Arcata	Red Mountain
Canyon Creek stonecrop	<i>Sedum obtusatum</i> ssp. <i>paradisum</i>	G4G5T2/S2 IB.3	Redding	Ishi, Shasta, Trinity
Butte County checkerbloom	<i>Sidalcea robusta</i>	G2/S2 IB.2	Redding	Ishi
Red Mountain catchfly	<i>Silene campanulata</i> ssp. <i>campanulata</i>	G5T3Q/S3 4.2	Arcata	Red Mountain
Butte County golden clover	<i>Trifolium jokerstii</i>	G2/S2 IB.2	Redding	Ishi
Shasta huckleberry	<i>Vaccinium shastense</i> spp. <i>shastense</i>	G3/S3 IB.3	Redding	Shasta

Source: BLM 2021a; BLM GIS 2023

Notes:

¹ Status codes:

FE = federally listed as endangered. FT = federally-listed as threatened

CNPS Rankings:

1A—Plants presumed extirpated in California and either rare or extinct elsewhere

1B—Plants rare, threatened, or endangered in California and elsewhere

2A—Plants presumed extirpated in California, but common elsewhere

2B—Plants rare, threatened, or endangered in California, but more common elsewhere

3—Plants about which more information is needed – a review list

4—Plants of limited distribution – a watch list

The CNPS classification is further refined by the following threat rank classification:

0.1—Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

0.2—Moderately threatened in California (20–80 percent of occurrences threatened/moderate degree and immediacy of threat)

0.3—Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known)

Global and State Natural Heritage Rankings:

G1 S1: Critically Imperiled—At very high risk of extinction due to extreme rarity (often five or fewer populations), very steep declines, or other factors

G2 S2: Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors

G3 S3: Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors

G4 S4: Apparently Secure—Uncommon, but not rare; some cause for long-term concern due to declines or other factors

G5 S5: Secure—Common; widespread and abundant

² In the 1992 Arcata RMP and the 1993 Redding RMP, the BLM divided the lands within each FO's jurisdiction into management areas for planning purposes. Management areas are not carried forward into the action alternatives; see **Section 2.1.1**, Alternative A (No Action Alternative).

Federal-listed plant occurrences known from the BLM-administered lands in the planning area are briefly described here. McDonald's rockcress (*Arabis mcdonaldiana*) grows in soils derived from ultramafic parent material (for example, serpentine soils), that contain high levels of heavy metals and low levels of nutrients. Habitat ranges from barren gravel slopes to open scrub and pine woodlands. Menzies wallflower (*Erysimum menziesii*) and beach layia (*Layia carnosa*) grow in semi-stable coastal dunes, among dune-mat vegetation, and other areas with moving sand. Slender Orcutt grass grows in vernal pools that have formed on soils of volcanic origin. Additional information on federal-listed plant habitat requirements, distribution on the BLM-administered lands in the planning area, and threats, is included in the AMS (BLM 2021a, pp. 2-98 to 2-101).

There are an additional 68 special status plant species, including federally listed species, suspected to occur on the BLM-administered lands in the planning area (of these, 17 plants are suspected to occur in the Arcata FO jurisdiction and 51 in the Redding FO jurisdiction). These are summarized in Table 2-27, Suspected BLM Special Status Plant Species for the NCIP Planning Area, of the AMS (BLM 2021a, pp. 2-104 to 2-105). Suspected species are those that could occur on the BLM-administered lands due to the presence of appropriate habitat and proximity to known populations.

The BLM updated its special status plant lists for the Redding and Arcata FOs in January 2020. Additional information on the update is included in the AMS (BLM 2021a, pp. 2-101 and 2-104 to 2-108).

As mentioned above, key habitats for special status plant species include unique and rare habitats, including areas with serpentine soils, coastal dunes, vernal pools, and other areas. A number of these key habitat types are managed by the BLM in existing ACECs (see **Section D.4.1**, Areas of Critical Environmental Concern) for botanical resources, including special status plant species. These are summarized in **Table D-9**, Botanical Areas of Critical Environmental Concern. Additional ACECs are managed to protect other vegetative resources, including late-successional forest vegetation and riparian areas.

Table D-9
Botanical Areas of Critical Environmental Concern

Area of Critical Environmental Concern	Botanical Relevant and Important Value(s)	BLM Field Office
Baker Cypress Research Natural Area/ACEC	Baker cypress and its habitat	Redding
Hawes Corner Research Natural Area/ACEC	Vernal pool flora, including special status plant species	Redding
Manila Dunes Outstanding Natural Area/ACEC	Active and stabilized dunes, wetlands, and associated special status plant species	Arcata
Red Mountain Research Natural Area/ACEC	Special status plant species associated with serpentine soils	Arcata
Sacramento River (Bend Area) Outstanding Natural Area/ACEC	Riparian wetland and vernal pool flora, including special status plant species	Redding

Source: BLM 2021a

Vulnerable Vegetation Communities

The CDFW recognizes and tracks vulnerable, imperiled, and critically imperiled natural vegetation communities. Vulnerable community types do not necessarily contain rare plant species, though they often do. There are 20 vulnerable to critically imperiled plant community types within the planning area, though not all are known to occur on BLM-administered land. The vulnerable communities known within the planning area are summarized in **Table D-10**, Vulnerable Plant Communities, including where they are known on BLM-administered lands. The BLM community occurrence data are based on CDFW data query results. Additional information on how the CDFW determines the vulnerability of these communities is included in Section 2.2.13, Vegetation, of the AMS (BLM 2021a, pp. 2-128 to 2-131).

Table D-10
Vulnerable Plant Communities

Vulnerable Plant Community¹	Rank²	Planning Area (acres⁴ and percent)	Surface Decision Area (acres⁴ and percent)	Split Estate Decision Area (acres⁴ and percent)	BLM Management Areas³
Alkali Seep (ditch-grass series)	G3/S2	100 (<1)	<100 (<1)	<100 (<1)	Ishi; Shasta
Coastal and Valley Freshwater Marsh (yellow pond lily, pondweed with floating or submerged leaves, duck weed, cattails, bulrush series)	G3/S2	3,700 (<1)	—	—	Ishi; Sacramento River; Scattered Tracts
Coastal brackish marsh (includes bulrush and cattail series)	G2/S2	100 (<1)	—	—	—
Coastal terrace prairie (Pacific reedgrass, California oatgrass, tufted hairgrass series)	G2/S2	<100 (<1)	—	—	—
Fen	G2/S1	100 (<1)	—	—	—
Grand fir forest (grand fir series)	G1/S1	100 (<1)	—	—	—
Great Valley Cottonwood Riparian Forest (black willow, Fremont cottonwood, mixed willow series)	G2/S2	3,900 (<1)	—	—	—
Great Valley Oak Riparian Forest (valley oak series)	G1/S1	4,600 (<1)	100 (<1)	—	Ishi; Sacramento River; Shasta; Yolla Bolly
Great Valley Willow Scrub (Arroyo, mixed, Pacific willow series)	G3/S3	2,600 (<1)	—	—	—
Northern Basalt Flow Vernal Pool	G3/S2	800 (<1)	—	—	—
Northern Coastal Salt Marsh (cordgrass, pickleweed, saltgrass series)	G3/S3	2,200 (<1)	100 (<1)	—	Samoa Peninsula; Scattered Tracts
Northern Foredune Grassland (native dunegrass series)	G1/S1	1,200 (<1)	—	100 (<1)	Samoa Peninsula; Scattered Tracts
Northern Interior Cypress Forest (includes Baker's cypress, Sargent's cypress and McNab cypress alliances)	G2/S2	13,300 (<1)	2,800 (<1)	900 (<1)	Ishi; Klamath; Red Mountain; Shasta
Northern Vernal Pool	G2/S2	<100 (<1)	—	—	—
Northern Volcanic Mud Flow Vernal Pool	G1/S2	2,000 (<1)	—	—	—
Northern Hardpan Vernal Pool	G3/S3	12,200 (<1)	—	—	—
Sitka Spruce Forest (Sitka spruce series)	G1/S1	100 (<1)	—	—	—
Sphagnum Bog	G3/S1	100 (<1)	—	—	—
Valley Needlegrass Grassland (desert, nodding, one-sided, purple needlegrass series)	G3/S3	100 (<1)	—	—	—

Vulnerable Plant Community¹	Rank²	Planning Area (acres⁴ and percent)	Surface Decision Area (acres⁴ and percent)	Split Estate Decision Area (acres⁴ and percent)	BLM Management Areas³
Valley Oak Woodland (valley oak series)	G3/S2	4,600 (<1)	—	—	—

Source: BLM GIS 2023

Notes:

¹ Plant communities are given ranks using the Holland (1986) nomenclature. National Vegetation Classification System-compliant plant community series consistent with the Manual of California Vegetation (Sawyer et al. 2009) are included in parentheses.

² The CDFW recognizes Natural Community Conservation ranks using NatureServe's Heritage Program methodology (<https://www.natureserve.org/conservation-status-assessment>). Global (G) and state (S) vulnerable plant communities reflect the overall status of a community throughout its global and state range, respectively. Vulnerable plant community ranks are distinguished between global and state status, and they are defined as vulnerable (3), imperiled (2), or critically imperiled (1).

³ As delineated in the 1992 Arcata RMP and 1993 Redding RMP.

⁴ Acres rounded to the nearest 100.

Trends and Forecast

The primary factors responsible for decline in special status plant populations and area of occupied habitat, include habitat loss from anthropogenic disturbance, natural- and climate-driven disturbance, and competition from invasive, nonnative species. As described in the AMS (BLM 2021a, p. 2-109), climate change will compound effects on special status plant populations and suitable habitats that have experienced declines from these factors.

Climate change will have varying and potentially dramatic effects on special status plant populations and their habitats. Many of these anticipated effects are described in the forecasts for the vegetation cover types (see forecast for vegetation cover types above) that constitute habitat rare plants and include effects from wildfire and drought. Increased competition from invasive, nonnative plants is also expected as weed ranges expand in response to climate change (see the forecast for invasive, nonnative species).

Since special status plants are already occupants of a limited ecological niche, climate impacts may disproportionately affect their ability to adapt and reproduce when experiencing change. There will likely be impacts on successful germination and survival through vulnerable life stages, including from drought stress or high temperatures, and others. The phenology of plants is affected by climate change. Pollination may become mismatched between plants, wildlife, and pollinators, altering historical and expected phenological partnerships between them.

Examples of key habitats that may experience effects from climate change are coastal dunes, due to dune erosion related to sea level rise, and vernal pools, due to prolonged patterns of drought. Other habitats are already, or may become, native plant refugia from the effects of climate change, such as areas of unique or limiting soil characteristics. For example, serpentine or volcanic soils already have reduced impact from invasive, nonnative plant competition, as these harsh soils limit the types of plants that can grow on them. Rare plant species in these areas also tend to be drought-tolerant, potentially increasing resilience to future drought conditions.

Invasive, Nonnative Plants

The BLM implements multiple strategies to manage invasive, nonnative plant species, including noxious weeds. This includes coordinating with local, county, state, and federal land managers in the planning area to carry out integrated weed management on the BLM-administered lands. The management framework,

including the relevant laws, regulations, and other guidance, is described in detail in Section 2.2.8, Invasive, Nonnative species known in the AMS (BLM 2021a).

Invasive, nonnative plants include noxious weeds as well as other plants that are not native to the US. An invasive species is defined as “a species that is nonnative to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental health or harm to human health” (US National Invasive Species Council 2008). According to the California Department of Food and Agriculture Code 5004, a “noxious weed” includes any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate, which the director, by regulation, designates to be a noxious weed.

Table 2-23, Invasive, Nonnative Weeds Present or within 50 Miles of the NCIP Planning Area, in the AMS (BLM 2021a, pp. 2-75 to 2-84) lists invasive, nonnative plants known in the planning area vicinity, including known infestations on the BLM-administered lands in the planning area. This list is derived from the California Invasive Plant Council’s CalWeedMapper database, as well as local expert knowledge.

The planning area contains many invasive, nonnative plant species with complex distributions, due to the highly diverse ecosystems and geographical features in the planning area. As summarized in Table 2-23 in the AMS, there are 236 species of invasive, nonnative species known from the planning area vicinity. Of those, 171 species are known to occur on the BLM-administered lands, and 77 of these are currently subject to active management for control and/or eradication by the BLM (BLM 2021a, p. 2-86).

The distribution of invasive, nonnative plants is influenced by deliberate and unintended introductions, climate conditions, wildfires and wildland fire management, vulnerability of a particular ecosystem to infestation, and land uses. For example, the noxious weed French broom (*Genista monspessulana*) is an invasive shrub that colonizes disturbed roadsides and adjacent grasslands. French broom is often introduced through road maintenance activities associated with the use of gravel from infested borrow sites. Once established, French broom spreads to other vulnerable grasslands, aided by bird dissemination. Another example is the noxious forb stinkwort (*Dittrichia graveolens*), typically found in disturbed and burned areas. Both unintended wildfire and managed burns can lead to increased distribution of invasive plants such as stinkwort.

Euro-American settlements in the planning area are another source of invasive, nonnative plant species. Invasive plant cultivars, including apple (*Malus* sp.) and pear (*Pyrus* sp.) trees and grapevines (*Vitis* sp.), are still present around settlement areas and homesteads (BLM 2021a p. 2-30). Giant reed (*Arundo donax*) is also common in settlement areas. More information on Euro-American settlement can be found in **Section D.2.9, Cultural Resources**.

A primary focus of invasive, nonnative plant management by the BLM is detection and treatment of smaller weed infestations in high-risk areas, with the aim of preventing further weed spread and maintaining or improving ecosystem health (BLM 2021a, p. 2-72). When treating infestations, the BLM uses an integrated management approach, often employing multiple treatment methods to maximize treatment effectiveness while minimizing environmental impacts. This can include manual, biological, mechanical, and chemical control methods. Early detection and rapid response are facilitated by collaboration with partners including local weed management areas, resource conservation districts, watershed councils, county agriculture departments, and cooperative agreements with grazing lessees. Additional information on partnerships and collaboration can be found in Section 2.2.8 of the AMS (BLM 2021a).

Trends and Forecast

Despite management, introduction and spread of invasive, nonnative plants continues to be affected by natural and anthropogenic factors on all land ownerships in the planning area, including land use and development, increasing recreational access, and increasing drought and wildfire from changing climate conditions.

A key driver of this trend is the increase in large, high-severity wildfires within the region. Approximately 15 percent of the land within the planning area burned between 2016 and 2020 (BLM 2021a, p. 2-88), creating areas of disturbance with conditions that favor the increased spread of invasive, nonnative plants. Furthermore, some types of mechanical fuels management techniques such as fuel breaks and mechanical harvesting can increase the potential for invasion of nonnative plants by increasing surface disturbance areas and providing a vector for invasive plant spread (Brooks and Lusk 2008).

More generally, anticipated conditions under climate change will likely expand suitable habitat for invasive, nonnative plants throughout the planning area, as shown for numerous weed species in Table 2-23 of the AMS (BLM 2021a, p. 2-89).

Environmental Consequences

The analysis area for vegetation, including riparian management areas, special status plants, and invasive, nonnative plants, includes the BLM-administered surface lands and subsurface mineral estate (split estate) within the planning area.

Management for the following resources and resource uses would have no or minimal effects on vegetation, and are, therefore, not analyzed:

- Cave and karst resources
- Cultural resources (the effects of fuels reduction around cultural sites would be as described in vegetation management)
- Education and interpretation
- National Scenic and Historic Trails
- Paleontological resources
- Public health and safety/hazardous materials
- Socioeconomics and environmental justice
- Tribal Interests (effects from cultural burning would be as described in the wildland fire management analysis)
- Visual resources management

Impacts Common to All Alternatives

Continuing to manage riparian management areas according to the Aquatic Conservation Strategy objectives in the 1994 NWFP would help maintain the distribution, connectivity, and ecological integrity of riparian vegetation where these reserves are managed. This would come about because under all alternatives, the BLM would require that management actions carried out in riparian management areas would not retard attainment of the Aquatic Conservation Strategy objectives. The objectives would help

maintain and restore the species composition and structural diversity of plant communities, among other physical and ecological characteristics of functioning riparian and wetland areas.

The location of riparian management areas would be based on the location of aquatic resources providing riparian functions on the landscape. The amount of riparian management areas would differ between the alternatives based on the type of aquatic feature and other factors, meaning that the size of the area that would be afforded protections under this management would also vary across the alternatives. The size of the riparian reserve, and the management objectives and allowable uses therein, would be dependent on the type of aquatic feature (river or stream, pond, and wetland), its hydroperiod (perennial, intermittent, and ephemeral), and whether it was a natural or human-made feature. However, there would not be an appreciable difference between the alternatives in terms of the BLM's ability to manage riparian vegetation resources while not retarding attainment of the Aquatic Conservation Strategy objectives.

For example, designing and implementing watershed restoration projects to promote long-term ecological integrity, using site-appropriate native species in restoration projects, and reducing fuels to meet riparian health objectives would improve the resilience of riparian systems to future climate-related disturbances like wildfire and drought. Function would be maintained or improved by carrying out invasive, nonnative plant removal, decommissioning unnecessary roads, and designing recreational trails and other facilities to meet the Aquatic Conservation Strategy objectives. Basing management prescriptions on the ecological and hydrological characteristics of the area would likely facilitate movement toward desired conditions in these areas. While the differences in the buffer widths and management prescriptions would vary somewhat between the alternatives, the overall effects on riparian vegetation extent and function would be similar in the long-term.

Managing to move vegetation cover types toward desired conditions would affect vegetation cover extent and condition, including structure and function. The type and intensity of effects would depend on management objectives and treatment methods.

In general, vegetation management projects would have short-term, direct effects on vegetation cover types where the projects were carried out. Treatments would reduce the aerial cover, biomass, and continuity of vegetation by removing woody and herbaceous vegetation. Where vegetation management objectives include nonnative, invasive plant species removal, removing these plants would facilitate increased cover and biomass of native vegetation. Precise effects on vegetation, such as the amount of vegetation removed, length of time needed for vegetation recovery, and potential for invasive plant species increases in treated areas, would vary depending on the vegetation cover type where the treatment was done, and the proposed treatment method(s). Depending on the alternative and proposed treatment location, treatment methods may include manual, mechanical, biological, chemical, and prescribed fire. The effects from these treatment methods are described in more detail below.

Manual treatments would use hand tools and hand-operated power tools to directly remove or modify vegetation, reducing percent cover of target species, altering species composition, and altering microsite climatic conditions, that could indirectly affect plant growth or survival. Manual treatments would generally occur in areas where mechanical equipment use would be unlikely, such as on excessively steep slopes or rocky sites or near sensitive resources. Manual treatments would have a low potential to damage or kill nontarget vegetation. This is because workers could easily avoid nontarget vegetation and because the amount of surface disturbance associated with manual treatments is generally localized. Manually removing the overstory canopy in treatment areas could release desired understory vegetation, increasing its

relative cover (Monsen et al. 2004). This could occur as such resources as light, moisture, and nutrients, previously captured by overstory vegetation, become available to herbaceous ground cover. It could also release nonnative, invasive plants if these species were present in treatment areas, though the potential for this would be relatively limited because manual treatments would result in only minor amounts of surface disturbance.

Mechanical treatments would make use of a variety of mechanical equipment to directly remove or modify vegetation, as described for manual treatments, but typically on a larger scale and at a faster pace. Mechanical treatments may also increase the potential for the release of herbaceous vegetation (Monsen et al. 2004) that is present in the vegetation understory, as described for manual treatments.

Mechanical treatments would disturb the soil surface to a greater degree than manual treatments because they would be generally done by tracked or wheeled heavy machinery. Soil disturbance during mechanical treatments would generate airborne dust, which may suppress plant physiological processes, pollinator efficiency, and plant vigor, as described in *Effects from Air and Atmospheric Values Management*. This effect would be most intense on herbaceous vegetation that is close to soil disturbance. The magnitude of intensity would decrease with increasing distance from the soil disturbance, and it would typically cease over time as wind blows and rain washes dust off vegetation. In cases where dust deposition is especially heavy or persistent, effects from suppressed reproduction could last for the duration of that year's growing season.

Surface disturbance would also indirectly increase the potential for invasive, nonnative plant introduction and spread (Mack et al. 2000), potentially leading to increases in cover of these species. Invasive, nonnative introduced seeds may be transported on equipment and machinery used during treatments. Treatments would alter light, moisture, and nutrient availability, and they would provide roughened surfaces where weed seeds may germinate. Following standard operating procedures for identifying, treating, and monitoring nonnative, invasive plants during vegetation treatments would reduce the potential for their establishment and spread.

Mechanical treatments could also remove fallen, large woody debris from the ground. Removing large woody debris can affect surrounding vegetation. This would come about by reducing site productivity, particularly on drought-prone and infertile soils, and having a variety of ecological impacts (Cole 2002). Decaying wood has a relatively high water-holding capacity. It accumulates nitrogen, phosphorus, and sometimes calcium and magnesium, and it is an important site for nitrogen-fixing microorganisms. Mycorrhizal fungi, which improve plants' ability to extract water, nitrogen, and phosphate from less fertile soils, are concentrated in decayed wood. Decayed wood provides a substrate for plant germination and establishment and subsequent growth of certain species (Cole 2002).

Biological treatment methods to move vegetation towards desired condition would typically include livestock grazing. Targeted grazing would primarily be used to reduce fuels from invasive annual and nonnative perennial grasses. Grazing can also increase soil compaction and bare ground, and contribute to nonnative, invasive plant seed dispersal. A more detailed description of effects can be found in the section *Effects from Livestock Grazing Management* below.

The effects of chemical treatments on vegetation are described in detail in the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (BLM 2007, p. 4-44 to 4-76) and the 2016 Final PEIS for Vegetation

Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on BLM Lands in 17 Western States (BLM 2016a, p. 4-25 to 4-38). As described in those PEISs, chemical treatments can be used to remove target plants, or decrease target plant growth, seed production, and competitiveness, thereby releasing native or desirable species from competitive pressure and aiding in their reestablishment where vegetation modification is desired.

Following standard operating procedures (BLM 2007, Table 2-8) and mitigation measures (BLM 2016a, Table 2-5) described in the PEISs would prevent impacts or reduce impact intensity, including death, reduced productivity, and abnormal growth from unintended contact with chemicals via drift, runoff, wind transport, or accidental spills and direct spraying, on nontarget vegetation. The degree of impact depends on the chemical used and its properties, such as its persistence, the application rate, the treatment method, the physical site conditions, and the weather (such as wind or rain) during treatments (BLM 2007, p. 4-47, Impacts Common to All Treatments). These effects would generally occur during and immediately following treatments.

Prescribed fire could be used to carry out fuels, habitat, or other vegetation or forest health objectives, subject to site-specific review. A more detailed description of effects can be found in the section *Effects from Wildland Fire Management* below.

In the long-term, vegetation treatments to restore desired vegetation conditions would move vegetation cover types toward these conditions. Treatments ultimately would help restore sustainable ecosystems composed of natural landscapes that provide connectivity, ecological function, and resilience to disturbance, including disturbance from wildfire, drought, heat, and other climate change factors. Treatments would also support plant community health, pollination, reproduction, gene flow, and healthy native and special status plant population distributions and sizes.

Potential management restrictions in sensitive natural resource areas may require the BLM to modify certain types of management activities before they are carried out. This would be done to protect the sensitive resource while still moving vegetation toward desired conditions. Examples of such areas are steep slopes, serpentine soils, in at-risk species habitat, or in cultural resource areas. For example, surface-disturbing treatments using heavy equipment would be less likely to be carried out in at-risk species habitat or areas with cultural resources; in these areas, treatments that minimize or avoid surface disturbance, like manual, chemical, biological, or prescribed fire treatments, would be more likely to be used to meet management objectives. In areas with more protective allocations that may limit options for vegetation management, vegetation community shifts may be slower and incremental depending on alternative methods utilized and timing of treatments.

Special status plant species would generally benefit from long-term improvements to surrounding plant communities. Treatments that increase habitat resistance and resilience from disturbances would potentially reduce threats of habitat loss and population reductions or extirpations. Effects from the treatment methods described above may be magnified for special status plant species due to the rarity, limited extent, and specialized habitat requirements. Many special status plants rely on the security of seed banks for continued propagation; therefore, they are more susceptible to surface disturbances that disturb, reduce, or eliminate seed banks. If multiple treatment methods are used in the same location, the potential for damage or mortality of undetected special status plants could also increase.

Restoring, maintaining, and improving habitat conditions for wildlife would generally also result in improved vegetation conditions where management was carried out. Effects would be similar to those described for vegetation management (and wildland fire management, in instances where prescribed fire was used for wildlife objectives).

Prescribed fire could be used to carry out fuels, habitat, or other vegetation or forest health objectives, subject to site-specific review. Where implemented, prescribed fire would have short-term, direct effects on vegetation, including reducing the aerial cover, biomass, and continuity of vegetation by removing woody and herbaceous vegetation.

Heat generated during prescribed fire treatments can damage or kill vegetation. The amount of damage would depend on the species; its ability to withstand fire or regrow following fire; and fire timing. Heat generated by fire may alter the physical, chemical, and biological properties of the soil. This would be more likely to occur during pile burning than broadcast burning, especially burning of relatively large piles or piles containing large pieces of wood (Busse et al. 2010; Rhoades et al. 2015), such as piles that may be generated during mechanical thinning treatments or after timber harvest. This is because pile burning can generate higher temperatures for a longer period of time, over a concentrated location. This can kill seeds in the soil and have long-lasting alterations in soil nutrient availability and porosity which can suppress future vegetation or influence species composition (Busse et al. 2010), while a lack of native seed may delay local site recolonization.

In the long-term, vegetation treated using prescribed fire would move toward desired conditions. Treatments ultimately would help restore sustainable ecosystems composed of natural landscapes that provide connectivity, ecological function, and resilience to disturbance, including disturbance from wildfire, drought, heat, and other factors related to climate change.

Managing ROWs has the potential to affect vegetation in a similar manner to travel and transportation management. This is because ROW management typically includes building new or maintaining motorized access routes and associated ROWs facilities, like communication sites, that would directly affect vegetation by disturbing the ground surface and removing vegetation cover, decreasing suitability for rare plant species, and increasing the potential for invasive, nonnative plant introduction, establishment, and spread.

Managing ROW avoidance areas would reduce the potential for effects in these areas, as ROWs would be instead sited in areas that are managed as open to ROWs where feasible. Specific areas with higher botanical value would be ROW avoidance areas under the action alternatives (see Impacts Common to All Action Alternatives below).

Managing ROW exclusion areas would preclude the effects described above, because ROWs would not be sited in ROW exclusion areas. Managing ROW avoidance and exclusion areas may concentrate ROW development in open areas, increasing effect intensity in these areas.

The acres of vegetation cover types contained within the ROW management allocations are summarized in **Table D-11**, Vegetation Cover Types in ROW Allocations by Alternative.

Table D-11
Vegetation Cover Types in ROW Allocations by Alternative

Vegetation Cover Type	Alternative A	Alternative B	Alternative C	Alternative D
	Open Avoidance Exclusion	Open Avoidance Exclusion	Open Avoidance Exclusion	Open Avoidance Exclusion
Chaparral	55,400	33,100	34,800	30,900
Shrubland	1,000	16,200	20,500	20,000
	16,100	23,200	17,300	21,600
Coastal Forests	<100	0	0	0
	0	<100	<100	<100
	0	0	0	<100
Coastal Prairies	500	0	0	0
	0	0	500	400
	0	500	0	<100
Douglas-fir- and Tanoak-dominated Forest	40,200	2,300	2,800	2,400
	1,200	23,400	30,200	29,000
	18,300	34,000	26,600	28,200
Dunes	400	0	0	0
	0	0	400	300
	0	400	0	100
Fallow Fields and Croplands	700	200	200	200
	0	0	0	0
	0	500	500	500
Foothill Pine and Oak Woodland	72,400	27,800	30,400	27,200
	3,600	33,800	41,300	39,500
	15,300	29,700	19,500	24,500
Grasslands, Vernal Pools, and Wetlands	20,500	4,900	5,800	5,000
	900	4,400	4,400	4,600
	700	12,800	12,000	12,500
Juniper and Sage	7,400	3,700	4,600	3,700
	100	2,500	2,900	2,500
	0	1,300	0	1,300
Late Successional Forest	200	0	100	0
	0	200	100	200
	300	300	0	300
Mixed Conifer	92,900	33,400	36,100	33,500
	3,700	48,700	59,200	60,500
	7,300	21,900	8,600	10,000
Oak Savannas and Open Woodlands	17,500	4,100	4,800	4,100
	0	4,400	4,400	5,400
	100	9,100	8,400	8,100
Other	3,000	1,200	1,500	1,300
	900	2,000	2,200	2,200
	500	1,100	700	800
Valley Foothill Riparian	500	0	100	0
	0	300	200	300
	0	200	200	200

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100.

Lands and realty management also includes land tenure adjustments, including disposal. Disposal may indirectly alter vegetation cover on parcels transferred to private ownership as the potential for these parcels to be developed for other uses would increase. However, the BLM would not dispose parcels that enhance multiple use management, including lands with important resource values that further management objectives. This would include lands with important, unique, or rare vegetation types, rare plant occurrences, vulnerable plant communities, and riparian and late successional forest habitat. Such effects would not be anticipated in these areas.

This analysis focuses on locatable and mineral materials effects on vegetation, as there is typically higher potential for these minerals to be developed, compared with low development potential for leasable minerals (see **Section D.3.5**, Nonrenewable Energy and Minerals).

Minerals management, including exploration and development of mineral resources, has the potential to affect vegetation in a similar manner to what was described in travel and transportation management. This is because minerals management typically includes building or maintaining new motorized access routes and associated facilities, like well pads and borrow sites (i.e., open excavated areas), that would directly affect vegetation by disturbing the ground surface and removing vegetation cover; removing habitat or decreasing suitability for rare plant species; and increasing the potential for invasive, nonnative plant introduction, establishment, and spread around development areas.

The acres of vegetation cover types on BLM-administered surface lands that would be open to locatable and mineral materials are summarized in **Table D-12**, Vegetation Cover Types Open to Locatable Materials by Alternative, and in **Table D-13**, Vegetation Cover Types Open to Mineral Materials by Alternative.

Table D-12
Vegetation Cover Types Open to Locatable Minerals by Alternative

Vegetation Cover Type	Alternative A	Alternative B	Alternative C	Alternative D
	Existing withdrawal Open Proposed withdrawal	Existing withdrawal Open Proposed withdrawal	Existing withdrawal Open Proposed withdrawal	Existing withdrawal Open Proposed withdrawal
Chaparral	13,800	13,800	13,800	13,800
Shrubland	58,900	58,900	58,900	58,900
	0	15,700	9,200	14,400
Coastal Forests	0	0	0	0
	<100	<100	<100	<100
	0	<100	<100	<100
Coastal Prairies	0	0	0	0
	500	500	500	500
	0	400	400	400
Douglas-fir- and Tanoak-dominated Forest	18,400	18,400	18,400	18,400
	41,300	41,300	41,300	41,300
	0	19,800	9,100	17,000
Dunes	0	0	0	0
	400	400	400	400
	0	400	400	400
Fallow Fields and Croplands	0	0	0	0
	700	700	700	700
	0	200	100	100

Vegetation Cover Type	Alternative A	Alternative B	Alternative C	Alternative D
	Existing withdrawal Open Proposed withdrawal	Existing withdrawal Open Proposed withdrawal	Existing withdrawal Open Proposed withdrawal	Existing withdrawal Open Proposed withdrawal
Foothill Pine and Oak Woodland	15,300 75,900 0	15,300 75,900 25,500	15,300 75,900 13,600	15,300 75,900 21,000
Grasslands, Vernal Pools, and Wetlands	1,000 21,100 0	1,000 21,100 4,900	1,000 21,100 1,000	1,000 21,100 1,500
Juniper and Sage	100 7,700 0	100 7,700 100	100 7,700 0	100 7,700 100
Late Successional Forest	300 200 0	300 200 200	300 200 0	300 200 100
Mixed Conifer	9,300 94,600 0	9,300 94,600 30,100	9,300 94,600 18,400	9,300 94,600 26,600
Oak Savannas and Open Woodlands	800 16,800 0	800 16,800 5,800	800 16,800 2,500	800 16,800 3,300
Other	900 3,500 0	900 3,500 1,300	900 3,500 900	900 3,500 1,200
Valley Foothill Riparian	100 400 0	100 400 300	100 400 300	100 400 300

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100.

Table D-13
Vegetation Cover Types Open to Mineral Materials by Alternative

Vegetation Cover Type	Alternative A	Alternative B	Alternative C	Alternative D
	Closed Open	Closed Open	Closed Open	Closed Open
Chaparral	17,100	32,000	26,400	35,000
Shrubland	55,600	47,000	46,300	37,700
Coastal Forests	0 <100	<100 <100	<100 <100	<100 <100
Coastal Prairies	100 300	300 100	300 100	300 100
Douglas-fir- and Tanoak-dominated Forest	19,000 40,600	43,500 16,200	31,700 27,900	41,400 18,300
Dunes	<100 400	400 <100	400 0	400 <100
Fallow Fields and Croplands	500 200	500 200	500 200	500 200
Foothill Pine and Oak Woodland	17,900 73,300	48,600 42,700	38,300 53,000	47,400 43,900
Grasslands, Vernal Pools, and Wetlands	10,500 11,600	14,300 7,900	12,900 9,200	14,500 7,700

Vegetation Cover Type	Alternative A	Alternative B	Alternative C	Alternative D
	Closed Open	Closed Open	Closed Open	Closed Open
Juniper and Sage	0 7,700	1,400 6,400	0 7,800	1,300 6,400
Late Successional Forest	300 200	500 0	300 200	500 <100
Mixed Conifer	7,700 96,200	50,500 53,400	43,900 60,000	54,100 49,900
Oak Savannas and Open Woodlands	7,400 10,200	11,900 5,700	10,600 7,000	11,500 6,100
Other	900 3,500	2,300 2,100	1,900 2,400	2,200 2,100
Valley Foothill	300	400	400	500
Riparian	200	0	100	<100

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100.

As described in **Section D.3.5**, Nonrenewable Energy and Minerals, there is currently no exploration or development of fluid minerals or nonenergy leasable minerals in the planning area, and there is little to no future development potential. Therefore, it is unlikely that these forms of mineral management would have a more than discountable effects on vegetation in the planning area. In the case that mineral exploration and development do occur, the extent of effects would be limited, and the types of effects would be similar to those described for other forms of energy and minerals management. Effects from fluid minerals and nonenergy leasable minerals on vegetation are not discussed further.

Developed and dispersed recreation, as well as administrative functions to maintain motorized access and recreation opportunities, can affect vegetation in a variety of ways. Building or maintaining new motorized and nonmotorized trails and developed recreation facilities, such as ERMA's or SRMA's and campgrounds, would directly affect vegetation by disturbing the ground surface and removing vegetation cover. Such developments would create discrete footprints, clear of vegetation.

Vegetation can be mechanically damaged when it is crushed or trampled by recreationists engaging in motorized—and to a lesser extent—nonmotorized activities, such as using OHVs, riding horses or using pack stock, riding mountain bikes, and hiking and camping in areas where vegetation is rooted or growing. These impacts tend to be concentrated along designated routes and trails and around campsites. Where there are established trails, trampling rarely affects vegetation more than 6.5 feet from the trail edge (Dale and Weaver 1974). Mechanical damage can reduce leaf area, plant height, and reproductive output. Ultimately, such impacts can alter plant vigor, decrease individual plant survival, alter species composition, and reduce overall vegetation cover. Vegetation types differ in their ability to resist and recover from trampling. Grass-like plant characteristics generally make them more resistant to trampling than forbs and woody plants, such as shrubs and young trees (Cole 1993, 1995); thus, grassland and meadow vegetation may tolerate trampling better than the understory of wooded areas (Cole 1987).

Ground disturbance and vegetation removal can increase the potential for invasive, nonnative plant establishment and spread. Surface disturbance reduces native plant cover and creates bare soils. Invasive, nonnative plant materials can also be introduced by recreationists' vehicle tires or undercarriages or on the footwear or clothing of vehicle passengers (Lonsdale and Lane 1994; Greenberg et al. 1997). Invasive, nonnative plant seeds can be transported on boots, gear, or clothing; pets; pack stock fur, hooves, or

manure; or through importing materials, such as stock feed, gravel, supplies, tools, and equipment. These risks are highest around developed campgrounds, in heavily used dispersed areas, and along motorized routes, trails and trailheads. The probability that invasive, nonnative plants will fully establish depends primarily on several factors, including plant propagule pressure and surface disturbance. The more propagules that are introduced, the more likely that nonnative plants will eventually be established (Von Holle and Simberloff 2005).

Managing the Samoa Dunes recreation management area as open to OHV travel would result in mechanical damage, including mortality, on plants within the portion of the management area that is open to OHV travel. These effects would be concentrated on the margins of trails commonly used by OHVs. The OHV use area is in a European beach grass-dominated area, so most effects would be on this species. Further, the BLM has observed that by trampling and removing European beach grass, OHV use can open up space for native dune plants to colonize along the edges of commonly used trails. Native plants would also be periodically trampled by OHVs. The BLM would administer the Samoa Dunes as either an SRMA (Alternative A, Alternative C, and Alternative D) or ERMA (Alternative B), but the type and intensity of effects on vegetation would be similar across all alternatives.

Managing all wilderness areas and wilderness study areas as closed to OHV travel would preclude the trampling and invasive, nonnative plant species effects from motorized and mechanized uses, as described above. However, nonmotorized uses, including hiking and camping, would still be expected to result in some trampling near trails and campsites, and some invasive, nonnative introduction and spread, albeit with a lowered intensity compared with motorized use.

The acres of vegetation cover types contained within OHV travel designations (open, closed, and limited to existing and designated routes) are summarized in **Table D-14, Vegetation Cover Types in OHV Travel Designations by Alternative**. Effects on vegetation from travel, including the potential for invasive, nonnative plant introduction and spread, would be as described in the *Impacts Common to All Alternatives*.

Livestock grazing effects would depend on level of use and would be limited to those areas where livestock grazing allotments are active. This is determined by such factors: as manageability, stocking rate, class and kind of livestock, season and duration of use, fences, water developments, other rangeland infrastructure, soil moisture, plant palatability, amount and timing of annual precipitation, and temperature (see **Section D.3.8, Livestock Grazing**).

Direct impacts on vegetation from livestock grazing can include trampling, removal of herbaceous biomass, reduced plant cover and height, reduced litter amount, increased soil compaction, increased amounts of bare ground, and potential for nonnative, invasive plant seed dispersal. In the long-term, livestock grazing pressure may shift vegetation composition toward a community in which unpalatable or grazing-tolerant plant species are overrepresented.

Livestock may contribute to nonnative, invasive plant establishment and spread. Ungulates can promote seed dispersal via dung, fur, and hoofs (Collins and Uno 1985; DiTomaso 2000). Grazing may increase the available sites for colonization by creating openings in the grassland canopy and reducing the accumulation of litter.

Table D-14
Vegetation Cover Types in OHV Designations by Alternative

Vegetation Cover Type	Alternative A	Alternative B	Alternative C	Alternative D
	Closed Limited Open	Closed Limited Open	Closed Limited Open	Closed Limited Open
Chaparral	56,400	17,300	16,100	16,200
Shrubland	16,300	55,400	56,600	56,400
	0	0	0	0
Coastal Forests	<100	<100	<100	<100
	0	0	<100	<100
	0	0	0	0
Coastal Prairies	200	100	100	100
	100	200	200	200
	100	100	100	100
Douglas-fir- and Tanoak-dominated Forest	41,400	27,400	18,300	20,200
	18,300	32,200	41,400	39,500
	0	0	0	0
Dunes	400	100	100	100
	0	300	300	300
	0	0	0	0
Fallow Fields and Croplands	700	0	0	0
	0	700	700	700
	0	0	0	0
Foothill Pine and Oak Woodland	76,000	18,100	15,300	15,500
	15,300	73,200	76,000	75,800
	0	0	0	0
Grasslands, Vernal Pools, and Wetlands	21,200	1,200	700	1,000
	1,000	21,000	21,400	21,100
	0	0	0	0
Juniper and Sage	7,800	0	0	0
	0	7,800	7,800	7,800
	0	0	0	0
Late Successional Forest	200	300	300	300
	300	200	200	200
	0	0	0	0
Mixed Conifer	96,600	8,400	7,300	7,400
	7,300	95,600	96,600	96,500
	0	0	0	0
Oak Savannas and Open Woodlands	17,500	100	100	100
	100	17,500	17,500	17,500
	0	0	0	0
Other	3,900	600	500	500
	500	3,800	3,900	3,800
	0	0	0	0
Valley Foothill Riparian	400	100	0	100
	100	400	500	400
	0	0	0	0

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100.

Livestock grazing management can also have potential beneficial impacts on vegetation. Grazing can reduce certain kinds of invasive, nonnative plant infestations. For example, using appropriately timed livestock

grazing to reduce accumulated litter in invasive annual grasslands can promote native grass and forb germination by creating growing space and increasing available soil moisture. Native grassland species have coevolved with herbivores, and while herbivory can reduce standing biomass, it can also stimulate plant growth (Charles et al. 2017)

Adhering to grazing prescriptions and following management objectives for sensitive areas like late-successional reserves, and habitat areas, would avoid or minimize detrimental effects on vegetation cover types and rare plant habitats, as well as minimize invasive, nonnative plant establishment and spread.

The acres of vegetation cover types contained within livestock grazing allotments that would be available and unavailable under the alternatives are summarized in **Table D-15**, Vegetation Cover Types in Grazing Allotments by Alternative.

Table D-15
Vegetation Cover Types in Grazing Allotments by Alternative

Vegetation Cover Type	Alternative A	Alternative B	Alternative C	Alternative D
	Closed Open	Closed Open	Closed Open	Closed Open
Chaparral	1,500	900	700	1,200
Shrubland	12,200	12,900	13,100	12,600
Coastal Forests	0	0	0	0
	0	0	0	0
Coastal Prairies	0	0	0	0
	0	0	0	0
Douglas-fir- and Tanoak-dominated Forest	100 4,000	300 3,800	100 4,100	1,200 2,900
Dunes	0	0	0	0
	0	0	0	0
Fallow Fields and Croplands	0 <100	0 <100	0 <100	0 <100
Foothill Pine and Oak Woodland	1,100 13,600	1,600 13,100	400 14,300	2,300 12,400
Grasslands, Vernal Pools, and Wetlands	200 12,000	300 11,900	100 12,100	400 11,800
Juniper and Sage	100 5,100	100 5,100	<100 5,200	100 5,100
Late Successional Forest	0 0	0 0	0 0	0 0
Mixed Conifer	1,100 8,700	1,500 8,400	1,000 8,900	2,400 7,500
Oak Savannas and Open Woodlands	100 6,700	300 6,500	100 6,700	400 6,400
Other	<100 200	<100 100	<100 200	100 100
Valley Foothill	<100	<100	<100	<100
Riparian	<100	<100	<100	<100

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100.

The BLM would manage ACECs under all alternatives, but the number of ACECs and the acres of the ACECs (and in one case, the ACEC name) would vary across alternatives. As a result, the acres of vegetation cover types contained within the ACECs would also vary, as summarized in **Table D-16** Vegetation Cover Types in ACECs by Alternative. In general, managing for the relevant and important values of the ACECs would help maintain the extent, and maintain or improve the condition and function of vegetation cover types, within the ACECs. This would be especially true when the relevant and important values of an ACEC specifically identify vegetative resources, including unique terrestrial, wetland, or riparian areas like old growth forest, coastal dunes, serpentine flora, vernal pools, and key riparian areas. Specific examples are given in the alternatives analyses, below.

Table D-16
Vegetation Cover Types in ACECs by Alternative

Vegetation Cover Type	Alternative A	Alternative B	Alternative C	Alternative D
Chaparral Shrubland	1,800	9,100	1,700	8,900
Coastal Forests	<100	<100	<100	<100
Coastal Prairies	0	200	0	200
Douglas-fir- and Tanoak-dominated Forest	20,800	16,100	2,700	16,100
Dunes	100	400	100	400
Fallow Fields and Croplands	500	500	500	500
Foothill Pine and Oak Woodland	7,500	16,000	5,600	15,300
Grasslands, Vernal Pools, and Wetlands	10,000	12,500	9,500	12,500
Juniper and Sage	100	1,300	0	1,300
Late Successional Forest	400	200	0	200
Mixed Conifer	3,900	21,000	13,600	21,000
Oak Savannas and Open Woodlands	8,700	10,000	8,300	9,900
Other	500	1,000	200	1,000
Valley Foothill Riparian	300	400	200	400

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100

Similar to above, the acres of special status plant species occurrences and vulnerable vegetation communities tracked by the CDFW contained within the ACECs would also vary, as summarized in **Table D-17**, Rare Plants and Vulnerable Communities in ACECs by Alternative. As shown above, managing for the relevant and important values of the ACECs would help maintain the extent and condition of rare plant occurrences and vulnerable communities. This would be especially true when the relevant and important values specifically identify these resources. Specific examples are given in the alternatives analyses below.

Table D-17
Rare Plants and Vulnerable Communities in ACECs by Alternative

Rare Plants and Vulnerable Communities	Alternative A	Alternative B	Alternative C	Alternative D
Rare plant occurrences (acres)	5,000	4,500	1,400	4,500
Vulnerable communities (acres)	1,400	200	—	200

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100.

Managing river segments as eligible or suitable for inclusion on the NWSRS would affect the type of vegetation management that may be carried out in these areas. This is because management would need to be consistent with policy and direction in BLM Manual 6400, Wild and Scenic Rivers. In some cases, potential management restrictions to protect or enhance ORVs may require the BLM to modify certain types of management activities before they are carried out. With limited options for vegetation management, vegetation community shifts may be slower and incremental depending on alternative methods utilized and timing of treatments.

Continuing to manage the five designated wilderness areas and four Section 603 WSAs to maintain wilderness values and character per the BLM Manual 6330 and Manual 6340 would indirectly provide protection to vegetation within the areas. Indirect protection would generally reduce the intensity and extent of direct impacts on vegetation in this area and help to maintain the extent and condition of vegetation resources in a similar manner as described under Effects from WSR Management above. While vegetation, fuels treatments, and restoration would be implemented based on analysis using the Minimum Requirements Decision Guide, it is likely that the pace and scale of treatments would be limited compared with non-wilderness areas, slowing progress toward desired conditions and ecological resilience compared with other areas.

There would be no effects common to all alternatives resulting from soil, water resources, air and atmospheric values, fish (including special status species and invasive, nonnative species), coastal resources, wilderness characteristics, and forestry management actions.

Alternative A

Managing portions of management areas with unique or sensitive soil types as closed to motorized use and limiting vehicles to existing routes to limit erosion and soil damage would indirectly protect vegetation in closed or limited areas. This would affect vegetation that grows on rare or unique soil types, like rare cypress woodland and serpentine and decomposed granite-associated rare plant species.

Continuing to manage for in-stream flows and habitat conditions that maintain or restore riparian resources as defined in the 1994 NWFP and maintaining and restore water quality to support healthy riparian, aquatic, and wetland ecosystems as required by the NWFP 2001 Survey and Management Amendment, would maintain riparian conditions in applicable watersheds. This would help maintain the extent and function of riparian vegetation cover types in these watersheds, as well as maintain suitable habitat conditions for riparian-associated rare plant species and vulnerable communities.

Vegetation would continue to be managed per the direction contained in the existing RMPs for each management area. Vegetation treatments would continue to be carried out, including mechanical thinning, invasive, nonnative plant removal, and restoration of high-value areas. Desired conditions for vegetation

communities throughout the decision area would not be defined or managed for, meaning that movement toward these conditions would be slow. The range of available vegetation treatment methods would be limited, for instance, management to return low-intensity prescribed fire to fire-adapted ecosystems would only be done on a case-by-case basis with site-specific analysis, hindering widespread use of this beneficial tool on the landscape. Where treatments were carried out, effects on vegetation would be as described under *Impacts Common to All Alternatives*.

Management for special status plant species would continue to be carried out in management areas where known plant occurrences are located. This would maintain the extent and condition of known occurrences (for instance, dune-associated rare plants at Samoa Dunes and Manila Dunes, serpentine-associated species at Red Mountain, vernal pool species in the Sacramento Valley, and rare Baker cypress stands in the Ishi MA).

The BLM would continue to manage for control of invasive nonnative plant species to meet management area goals and objectives. Where used, herbicide use would be consistent with the existing programmatic vegetation treatment herbicide EIS RODs (BLM 2007 and 2016), including the procedures and limitations therein, as well as management objectives, standards, and guidelines from the NWFP. Where control using herbicides is carried out, target vegetation would be reduced, and the resulting structure and function of nontarget vegetation communities would be enhanced. Detailed analysis of the effects of herbicide use on vegetation can be found in the programmatic vegetation treatment EISs.

Generally, prescribed fire treatments would be required to complete site-specific environmental analysis and be consistent with NWFP standards and guidelines. Vegetation benefits would be a secondary effect of proposed treatments, and effects on vegetation would be analyzed in site-specific NEPA for the proposed prescribed fire. Carrying out prescribed fire treatments would move treated areas toward desired conditions and improve ecological resilience, but requirements to implement treatments would likely mean the overall acres treated remains relatively low.

Forestry management would continue to be carried out per management area prescriptions. Management would generally include tree planting, brush and hardwood release, and pre-commercial thinning to improve forest health, while maintaining or improving the long-term sustained yield of forest products from the available commercial forest lands. This type of management may incidentally improve forest vegetation cover type ecological function and increase resilience, but management would not be focused on this, and thus the pace and scale towards increased resilience may be slow.

Mineral materials proposals and stipulations would continue to be managed on a case-by-case basis, consistent with management area prescriptions. Where management areas include unique or sensitive botanical resources (rare plants, vulnerable communities, and key riparian areas), mineral stipulations would be developed to conserve these resources consistent with management area direction, helping to maintain the extent and condition of vegetation resources.

Managing the Hawes Corner ACEC and Sacramento Island ACEC as closed to OHV travel would preclude motorized travel effects from trampling and invasive, nonnative plant introduction and spread, on slender Orcutt grass and its vernal pool habitat and riparian habitat, respectively, in these areas. There would be similar protections for dune-associated rare plants in the Manila Dunes ACEC, in which travel would be limited to existing designated routes. However, trampling and invasive, nonnative plant introductions alongside designated routes could be expected to occur.

Livestock grazing would continue to be unavailable in several areas of higher botanical value, including the Samoa Peninsula (vulnerable dune communities and rare plants), Red Mountain RNA/ACEC (serpentine-associated rare plant species), and the Sacramento River Bend and Hawes Corner Management Areas (habitat for slender Orcutt grass and vernal pool rare plants).

Managing 117 river segments (totaling 201.7 miles) as eligible for inclusion in the NWSRS would indirectly affect the types of vegetation management that could be carried out in the managed corridors, as described under *Impacts Common to All Alternatives*.

There would be no effects under Alternative A on vegetation from air and atmospheric values, wildlife and fish (including special status species and invasive, nonnative species), coastal resources, lands with wilderness characteristics, lands and realty, ACEC, and wilderness and WSA management.

Impacts Common to All Action Alternatives

Implementing fugitive dust control requirements for surface-disturbing activities would help maintain the condition and function of adjacent vegetation communities, including in riparian management areas, and special status plant populations. This would come about because fugitive dust control measures would minimize the amount of fugitive dust that surface-disturbing activities would generate and ultimately deposit on nearby vegetation. When severe enough, dust deposition on vegetation can impair plant physiological processes and pollinator effectiveness. Dust settling on nearby vegetation could suppress plant physiological processes (Kameswaran et al. 2019). This, in turn, could suppress pollinator efficiency and thus plant vigor, indicated by reproduction, as described by Waser et al. (2017) in a study of the effects of road dust on nearby wildflower pollination and reproduction. Implementing applicable measures would ensure that any residual effects from dust deposition on nearby vegetation are minimal and temporary.

Managing decomposed granite soils, ultramafic/serpentine soils, and BSCs to minimize or avoid surface-disturbing mineral development and ROW activities would indirectly reduce permitted disturbance on the vegetation cover types and rare plant habitat, including vulnerable communities, that occur on these substrate types. This would help to maintain the extent and condition of these resources.

Implementing systematic measures to ensure adequate habitat conditions for native fish and wildlife in the face of climate change would indirectly maintain the extent and condition of riparian vegetation cover types and riparian-associated rare plant species and vulnerable communities. It would also increase the resilience of these areas from climate-driven disturbances. Generally, this management would be similar to management under Alternative A, but it would be carried out on a broader scale because it would apply to all the BLM-administered lands in the planning area, and not only those in key watersheds. Furthermore, additional systematic management would also improve the condition and resilience of other aquatic habitats, including vernal pool wetland systems, similarly improving conditions for rare plants in these areas.

Managing to move vegetation cover types toward desired conditions would affect vegetation cover extent and condition, including structure and function. The type and intensity of effects would depend on management objectives and treatment methods. Where treatments were carried out, effects on vegetation would be as described under *Impacts Common to All Alternatives*. Surface-disturbing BLM-permitted activities would adhere to BMPs for restoration, which may include salvaging and storing topsoil

and living vegetation mats, and using native, local, climate-adapted plant materials in restoration whenever feasible. This would facilitate recovery from disturbing activities in the short-term and increase vegetation community resilience in the long-term.

Defining and managing for desired conditions for each vegetation cover type in the decision area would facilitate movement toward these conditions, including increased resistance and resilience to disturbance factors in the face of climate change. Expanding the range of available vegetation treatment methods to include more widespread use of low-intensity prescribed fire would improve the structure, function, and resilience of fire-adapted vegetation cover types. Anticipated effects on the specific vegetation cover types under each action alternative are described in more detail below. While treatments in the vegetation cover types would be carried out under all action alternatives, the pace and scale of movement toward desired conditions would likely vary across alternatives, given the management focus and emphasis of each alternative.

In chaparral shrubland, improved structural, age class, and species heterogeneity resulting from vegetation treatments would improve resistance from climate-driven disturbances like uncharacteristically large and severe wildfire. Reducing fuels around developed recreation areas would reduce the potential for wildfire starts that could spread and affect large areas. These actions would help maintain the extent of this cover type and improve its condition over the long-term.

Coastal forests of Sitka spruce and beach pines would continue to be managed for condition and function in response to natural processes, but higher value competing resources would be prioritized. For example, removing encroaching conifers and restoring historical grasslands in interspersed coastal prairies would limit expansion of the coastal forest cover type. Similarly, allowing dunes to migrate inland into coastal forests in response to sea level rise may reduce coastal forest extent in the long-term.

As mentioned above, encroaching conifer removal in historical coastal prairie cover types would maintain or increase the extent of this community. Applying low-intensity prescribed fire and conducting native plantings and soil amendments would improve structure and ecological function.

In Douglas-fir and tanoak-dominated forests, emphasizing the conifer component and focusing on thinning tanoak would shift the structural composition over time as treatments were carried out. This would be done to minimize the effects of sudden oak death infection, through reducing fuels from tree mortality and lowering the risk of resulting uncharacteristically severe wildfire. This would help maintain the extent and condition of this cover type in the long term.

In the coastal dunes cover type, carrying out invasive nonnative plant management, and managing for OHV impacts would maintain and improve habitat suitability for rare plants. As mentioned above, allowing dunes to migrate into adjacent vegetation cover types in response to sea level rise would minimize loss of the dunes cover type in the long-term.

Restoring fallow fields and croplands to native vegetation would reduce the extent of this cover type in favor of expanding the cover of desired native vegetation cover types.

In the foothill pine and oak woodland cover type, a focus on maintaining and enhancing regeneration of native oak species and understory plant communities would shift community composition and improve

the ecological condition in the long-term. This would improve the opportunities for Tribes to harvest Traditional-use forest products and reduce the potential for uncharacteristically severe wildfire.

In grassland, vernal pool, and wetland cover types, maintaining and improving hydrologic connectivity and promoting native species diversity would improve the condition and function of these areas. Low-intensity prescribed fire would stimulate native perennial grass growth while reducing undesirable woody vegetation cover, and shift species composition toward native perennial grasses and forbs, improving pollinator and wildlife habitat. Improved ecological function would also improve habitat for the rare plant species found in these areas, including slender Orcutt grass and other vernal pool associated rare plants.

Reducing juniper expansion into historical sagebrush habitat would improve the structure and function of the juniper and sage cover type. This would come about by the resulting improved moisture resources for sagebrush and associated perennial grasses and forbs.

In the knobcone cover type, management would focus on restoring historical fire regimes and reducing the potential for uncharacteristically severe wildfire. This would improve the structure and function of knobcone stands and maintain the extent of this cover type.

Management in the mixed conifer cover type would improve resilience to climate change-related threats, helping to maintain the extent and improve the condition of these stands over the long-term. This would come about by management to promote stand structure and composition heterogeneity, including maintaining hardwood components and reducing stand density to encourage late-successional forest characteristics. Treatment planning would incorporate future anticipated conditions under climate change, and it would be carried out to promote appropriate desired outcomes given anticipated future conditions.

In the oak savannas and open woodlands cover type, management would focus on maintaining and enhancing regeneration of native oak species and perennial grass and forb understory communities, reducing invasive nonnative annual grass cover, and encouraging a healthy heterogeneous stand structure. This would improve the ecological condition in the long-term, improving opportunities for Tribes to harvest Traditional-use forest products.

Management in the rare cypress forest cover type would maintain the extent of this cover type and improve the structure and function by reducing conifer encroachment and encouraging cypress regeneration.

Management in the valley foothill riparian cover type would increase the extent and improve the structure and function of this cover type. This would come about from restoration of degraded areas, enhanced connectivity and floodplain reconnection, and control of invasive nonnative plants.

The effects from controlling invasive nonnative plant species would be similar to what is described in Alternative A. However, strategic management direction under the action alternatives would enhance control effectiveness, maximizing the benefits (improved ecological function) to nontarget vegetation communities. For example, while the BLM would continue to participate in cooperative weed management area administration, there would be increased focus on working with adjacent land managers to identify and treat infestations that cross jurisdictional boundaries. Priority consideration may be given to smaller populations where early treatment could lead to complete eradication, and areas where authorized uses are likely to introduce and spread weeds, including in ROWs and designated recreation areas. Priority

consideration may also be given to populations in ACECs, which would help maintain or improve habitat conditions for rare plants and vulnerable habitats in these areas.

Management for special status plant species would continue to be carried out to maintain the extent and condition of known occurrences. Managing for improved vegetation cover type structure and function, as described above, would improve support for rare plant occurrences, habitats, and vulnerable habitats embedded within these areas. This would help maintain the extent of known occurrences, while improving habitat for rare plants in other areas.

Carrying out management to maintain aquatic ecosystem health, including restoration of native riparian vegetation and invasive, nonnative plant control, would help maintain the extent and condition of riparian vegetation cover types.

There would be a number of management actions that would increase protections for coastal dune vegetation cover types, including rare plant habitat, and coastal wetland areas in the Coastal Strip, compared with Alternative A. Management would protect and restore coastal dune habitat and increase resiliency to future sea level rise, helping to maintain the extent and condition of these areas in the long-term. This would mainly come about due to increased restrictions on OHV and other potentially damaging uses, invasive, nonnative vegetation removal, and acquisition of inland tracts to facilitate vegetation community retreat as sea level rises. (Also, see the analysis for effects from climate change management, under *Impacts Common to All Action Alternatives*.)

The BLM would manage vegetation in response to observed and anticipated human development and wildfire trends, especially given anticipated climate conditions. Prioritizing fuels treatments to mimic historical fuels conditions would facilitate a return towards historical vegetation structure and composition. These treatments would vary based on the vegetation cover types, vegetation continuity, and topography. To facilitate faster movement toward these conditions, the BLM would prioritize development of a programmatic hazardous fuels reduction NEPA analysis to enable a faster pace and more widespread scale of treatments.

Patterns of human development in the planning area would mean that the BLM would prioritize proactive fuels treatments in and around human development (the WUI) over undeveloped wildlands with the goal of reducing fuels, mitigating wildfire risk, and increasing wildfire suppression effectiveness in these areas to protect life and property. Treatments would promote resilience of vegetation cover types to fire disturbance as described below.

Implementing specific fuels prescriptions by vegetation cover type and proximity to human development would facilitate movement toward desired conditions while protecting human developments. The effects on vegetation cover types would vary depending on the specific prescriptions (these vary by cover type) and areas where treatments are carried out (within the immediate area of human developments, or further from these areas, but still relatively close to them). Generally, in the short-term, treatments would reduce the amount of fuels by thinning trees; reducing canopy cover and biomass; and removing standing dead or living trees that are affected by insects or pathogens. Certain vegetation cover types (for instance, knobcone, juniper and sage, and chaparral shrublands) could receive aggressive, recurring treatments, increasing effect intensity. Treatments would alter the vegetation cover type structure, at times aggressively, especially when near human developments. However, treatments would increase resilience

from wildfire in the long-term by reducing wildfire severity through burning of treated areas and suppression effectiveness.

Incorporating increased cultural burning and Traditional Ecological Knowledge (TEK) during co-stewardship or co-management of vegetation resources with Tribes would facilitate movement toward vegetation desired conditions. For example, carrying out cultural burning to improve conditions for traditional plant and wildlife access and use would move conditions in treated areas toward pre-contact conditions. This would result in improved structural condition (reduced fuels), increased understory diversity, and ultimately, improved ecological function and resilience to climate-driven disturbances like wildfire and drought. Benefits would be most apparent in vegetation cover types and vulnerable vegetation communities where traditional uses are often carried out (see **Section D.5.3**, Tribal Interests) and that are impacted by departed ecological conditions. For example, this may include oak savannas, open woodlands, and perennial grasslands with invasive annual grass understories, and conifer and hardwood forests with over-dense canopy conditions and diminished understory diversity and complexity.

Allowing prescribed fire as a primary tool to meet vegetation objectives, with some limitations, would likely increase the scale of prescribed fire treatments compared with Alternative A, where vegetation benefits would be a secondary effect of proposed treatments. Using prescribed fire as an additional vegetation management tool would facilitate movement toward desired conditions, especially in historically fire-adapted vegetation cover types and vulnerable communities. Limitations would generally be for resource benefit – for example, prescribed fire would not be used in vernal pool landscapes during the desiccation period when vernal pool flora are flowering or setting seed and prescribed fire would reduce populations or seedbanks.

Protecting wilderness characteristics over other resource uses, including motorized recreation, road construction, minerals development, and ROW placement, would generally reduce the intensity and extent of direct impacts on vegetation. This would come about because surface-disturbing activities would be reduced. Effects from managing specific areas to protect wilderness characteristics are included under the analysis by alternative below.

An exception to the prohibition on mechanical land uses, would be vegetation management for fuels treatments, that can be carried out using mechanical methods without degrading wilderness characteristics in the long-term. Allowing these treatments would help maintain the extent, and improve the function and resilience of vegetation, including rare plant habitat and vulnerable communities, where carried out. Effects from vegetation treatments are described in detail in the *Effects from Vegetation Management* analysis above.

Existing LSRs within the vegetation cover types would be managed to protect and enhance LSR conditions, and to remain resilient to wildfire, pests, pathogens, and climate change. As a result, the extent and condition of LSRs would be maintained in the long-term. Available treatments to maintain and protect LSR conditions would vary by alternative, and as a result, the pace and scale of movement towards desired conditions may differ among the alternatives.

Managing ROW avoidance areas would reduce the potential for effects in these areas, as ROWs would instead be sited in areas that are managed as open to ROWs where feasible. This allocation would include a number of habitats and management areas of high botanical value, including serpentine and decomposed granite soils, late successional forest areas, coastal strip lands (where coastal dunes are located), and ACECs with known rare plant occurrences, rare cypress woodlands, riparian habitat, and late successional

forest habitat. ACECs with similar habitats would also be managed as exclusion; the list of ACECs managed as ROW avoidance and exclusion would vary by action alternative.

The acres and percent of riparian management areas that would be managed as ROW exclusion, avoidance, and open across all action alternatives is summarized in **Table D-18**, Riparian Management Areas in ROW Allocations by Action Alternative.

Table D-18
Riparian Management Areas in ROW Allocations by Action Alternative

Allocation	Alternative B (acres and percent)	Alternative C (acres and percent)	Alternative D (acres and percent)
ROW Open	19,900 (5%)	13,000 (3%)	27,500 (27%)
ROW Avoidance	24,500 (6%)	17,900 (5%)	43,000 (42%)
ROW Exclusion	24,300 (6%)	10,100 (3%)	32,900 (32%)
Total	68,700 (18%)	41,000 (11%)	103,500 (100%)

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100. For Alternative B and Alternative C, riparian management areas are not spatially defined but are calculated based on the buffer widths for each alternative in **Table 2-2**. To arrive at the Alternative B and Alternative C calculations in this table, the BLM first calculated the percentage of the decision area that would be in riparian management areas under Alternative B and Alternative C, then multiplied this percentage by the acres in each ROW allocation under these alternatives. Riparian management areas are spatially defined under Alternative D, and these calculations were derived using GIS.

Designated wilderness and other areas withdrawn from locatable mineral entry, would protect vegetation resources in the withdrawn areas, helping to maintain the extent and condition of these areas. Managing riparian management areas, most suitable WSR segments, and coastal strip lands as closed to mineral materials disposal, would protect vegetation resources in the closed areas, helping to maintain the extent and condition of these areas.

Where locatable and mineral materials development is allowed (in most other areas other than those described above), the acres and percent of riparian management areas on the BLM-administered surface lands that would be open to locatable mineral entry and mineral materials disposal would be the same or similar across the action alternatives, as summarized in **Table D-19**, Riparian Management Areas Open to Locatable and Mineral Materials Development.

Conducting vegetation treatments to manage fuels and reduce wildfire risk near recreational developments would reduce the potential for new wildfire starts in areas of concentrated human use, where potential ignition sources would be high. Timber harvests in SRMAs and ERMAs (where the recreational setting would not be affected), may be a tool to manage fuels in these areas. In the short-term, vegetation treatments would reduce vegetation cover. In the long-term, treatments would reduce the potential for wildfire disturbance to vegetation and associated reduction in condition and function, as described in *Impacts Common to All Alternatives* for vegetation management.

Table D-19
Riparian Management Areas Open to Locatable and Mineral Materials Development

Allocation	Alternative B (acres and percent)	Alternative C (acres and percent)	Alternative D (acres and percent)
Open to Locatable	58,000 (15%)	34,600 (9%)	84,000 (22%)
Open to Mineral Materials	31,600 (8%)	23,000 (6%)	42,800 (11%)

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100. For Alternative B and Alternative C, riparian management areas are not spatially defined but are calculated based on the buffer widths for each alternative in **Table 2-2**. To arrive at the Alternative B and Alternative C calculations in this table, the BLM first calculated the percentage of the decision area that would be in riparian management areas under Alternative B and Alternative C, then multiplied this percentage by the acres in each locatable and mineral materials development allocation under these alternatives. Riparian management areas are spatially defined under Alternative D, and these calculations were derived using GIS.

The acres and percent of riparian management areas contained within OHV allocations under the action alternatives are summarized in **Table D-20**, Riparian Management Areas in Travel Management Allocations by Alternative.

Table D-20
Riparian Management Areas in Travel Management Allocations by Action Alternative

Allocation	Alternative B (acres and percent)	Alternative C (acres and percent)	Alternative D (acres and percent)
Closed	13,200 (3%)	6,300 (2%)	19,800 (15%)
Limited	55,500 (15%)	34,700 (9%)	83,500 (22%)

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100. For Alternative B and Alternative C, riparian management areas are not spatially defined but are calculated based on the buffer widths for each alternative in **Table 2-2**. To arrive at the Alternative B and Alternative C calculations in this table, the BLM first calculated the percentage of the decision area that would be in riparian management areas under Alternative B and Alternative C, then multiplied this percentage by the acres in each travel management allocation under these alternatives. Riparian management areas are spatially defined under Alternative D, and these calculations were derived using GIS.

OHV and motorized travel would be limited to existing and designated routes in approximately 9 to 22 percent of riparian management areas; the remaining acres would be closed to motorized travel (BLM GIS 2023).

The acres and percent of riparian management areas contained within livestock grazing allotments that would be available and unavailable under the alternatives are summarized in **Table D-21**, Riparian Management Areas in Grazing Allotments by Alternative.

Discontinuing management of the 6,800-acre Red Mountain ACEC, and managing this area as wilderness, would mean that the relevant and important values, including botanical resources on serpentine soils (McDonald's rockcress, Red Mountain buckwheat, Red Mountain catchfly, and Red Mountain stonecrop), would no longer be managed under the ACEC activity-level plan. Instead, management would be carried out pursuant to the Wilderness Act. Restrictions on allowable management activities (that is, mechanical vegetation treatments) may reduce the opportunities for active management to maintain extent and function of special status plant populations. On the other hand, as these populations are associated with serpentine soils, they are likely more resilient to disturbances like wildfire and invasive, nonnative plant

Table D-21
Riparian Management Areas in Grazing Allotments by Action Alternative

Allocation	Alternative B (acres and percent)	Alternative C (acres and percent)	Alternative D (acres and percent)
Available for Livestock Grazing	41,900 (11%)	29,200 (8%)	51,600 (14%)
Unavailable for Livestock Grazing	26,900 (7%)	11,800 (3%)	51,900 (14%)

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100. For Alternative B and Alternative C, riparian management areas are not spatially defined but are calculated based on the buffer widths for each alternative in **Table 2-2**. To arrive at the Alternative B and Alternative C calculations in this table, the BLM first calculated the percentage of the decision area that would be in riparian management areas under Alternative B and Alternative C, then multiplied this percentage by the acres in each grazing allotment under these alternatives. Riparian management areas are spatially defined under Alternative D, and these calculations were derived using GIS.

invasion than surrounding areas. As a result, reduced active management opportunities may have only a minimal effect on the extent and function of rare plant occurrences.

The BLM would manage ACECs under all action alternatives, but the number of ACECs and the acres of the ACECs would vary across alternatives. As a result, the acres of riparian management areas contained within the ACECs would also vary, as summarized in **Table D-22**, Riparian Management Areas in ACECs by Action Alternative.

Table D-22
Riparian Management Areas in ACECs by Action Alternative (acres and percent)

Riparian Management Areas	Alternative B	Alternative C	Alternative D
ACECs	16,600 (4%)	4,600 (1%)	24,800 (6%)

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100. For Alternative B and Alternative C, riparian management areas are not spatially defined but are calculated based on the buffer widths for each alternative in **Table 2-2**. To arrive at the Alternative B and Alternative C calculations in this table, the BLM first calculated the percentage of the decision area that would be in riparian management areas under Alternative B and Alternative C, then multiplied this percentage by the acres in each ACEC under these alternatives. Riparian management areas are spatially defined under Alternative D, and these calculations were derived using GIS.

Generally, the action alternatives would include a number of climate management actions that would help ensure that the extent of vegetation communities (including in riparian management areas, rare plant habitat, and vulnerable communities) are maintained, and that condition and function of these areas is maintained or improved in the face of anticipated climatic conditions. Differences in the actions that each alternative would emphasize would likely result in differences in the magnitude and speed at which vegetation communities would move toward desired conditions. For instance, alternatives that emphasize both connectivity and improved resilience of vegetation communities would likely result in vegetation conditions that are best able to persist and function under anticipated future climate conditions. Alternatives that emphasize establishing climate refugia and connectivity corridors would allow rare plant populations and vulnerable communities to move in response to climate change, and likely maintain the greatest number of rare plant species and acres of suitable habitat over the long-term.

Interagency and Tribal coordination would facilitate management to maximize climate resiliency in climate-vulnerable vegetation communities, especially where community's cross administrative boundaries in the planning area. This would improve the BLM's ability to respond to changing climate conditions with adaptive management policies. Increased resiliency would minimize the acres of vulnerable vegetation community loss or degradation from climate-driven disturbances.

Considering climatic shifts when planning revegetation projects would improve the chances of successful revegetation. This would come about because vegetative material used in revegetation would be more likely to survive under anticipated climate conditions. Ultimately, where revegetation projects were carried out, these areas would exhibit improved climate resilience, helping to maintain or improve vegetation community condition and function.

Acquiring lands to manage for coastal resiliency would help maintain the extent and condition of climate-vulnerable vegetation communities, including coastal dunes. This would come about because allowing these communities to expand into acquired lands would minimize the loss of other portions of the communities as sea levels increase. Similarly, allowing riparian floodplains to reestablish onto historical floodplain areas behind at-risk levees on river systems would increase resiliency from climate-driven flood disturbance, helping to maintain the extent and function of these communities.

Riparian management areas are shown on **Map 2-1** and **Map 2-2** in **Appendix A**. Watershed restoration projects in riparian management areas would promote long-term ecological integrity and improve resilience to future climate-related disturbance. Defining the inner and outer riparian reserve zone widths and allowable management in the zones based on the type and hydroperiod of the riparian feature, would improve riparian condition and function. This is because vegetation management in these zones would be solely focused on protecting riparian function. While zone widths would be defined, they could be modified based on site-specific conditions to provide for the most effective protection and stabilization of soils and riparian vegetation.

Managing for ecological integrity and resilience of these areas would help maintain and improve the vegetation cover types that overlap riparian management areas. The acres of vegetation cover types that would be managed in riparian management areas under the action alternatives are summarized in **Table D-23**, Vegetation Cover Types in Riparian Management Areas.

Table D-23
Vegetation Cover Types in Riparian Management Areas by Action Alternative

Vegetation Cover Type	Alternative B (acres and percent)	Alternative C (acres and percent)	Alternative D (acres and percent)
Chaparral Shrubland	13,100 (3%)	7,800 (2%)	21,900 (6%)
Coastal Forests	<100 (<1%)	<100 (<1%)	<100 (<1%)
Coastal Prairies	100 (<1%)	100 (<1%)	200 (<1%)
Douglas-fir- and Tanoak-dominated Forest	10,700 (3%)	6,400 (2%)	14,000 (4%)
Dunes	100 (<1%)	<100 (<1%)	200 (<1%)
Fallow Fields and Croplands	100 (<1%)	100 (<1%)	100 (<1%)
Foothill Pine and Oak Woodland	16,400 (5%)	9,800 (3%)	25,000 (7%)
Grasslands, Vernal Pools, and Wetlands	4,000 (1%)	2,400 (1%)	6,900 (2%)

Vegetation Cover Type	Alternative B (acres and percent)	Alternative C (acres and percent)	Alternative D (acres and percent)
Juniper and Sage	1,400 (<1%)	800 (<1%)	900 (<1%)
Late Successional Forest	100 (<1%)	100 (<1%)	100 (<1%)
Mixed Conifer	18,700 (6%)	11,100 (3%)	25,700 (7%)
Oak Savannas and Open Woodlands	3,200 (1%)	1,900 (<1%)	5,400 (1%)
Other	800 (<1%)	500 (<1%)	2,500 (1%)
Valley Foothill Riparian	100 (<1%)	100 (<1%)	400 (<1%)
Total	69,800 (18%)	41,100 (11%)	103,400 (27%)

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100. For Alternative B and Alternative C, riparian management areas are not spatially defined but are calculated based on the buffer widths for each alternative in **Table 2-2**. To arrive at the Alternative B and Alternative C calculations in this table, the BLM first calculated the percentage of the decision area that would be in riparian management areas under Alternative B and Alternative C, then multiplied this percentage by the acres of each vegetation cover type. Riparian management areas are spatially defined under Alternative D, and these calculations were derived using GIS.

The acres of special status plant species' occurrences and vulnerable vegetation communities tracked by the CDFW contained within the riparian management areas are summarized in **Table D-24**, Rare Plants and Vulnerable Communities in Riparian Management Areas. Managing for ecological integrity and resilience of these areas would help maintain and improve habitat for riparian and wetland-associated rare plant species and vulnerable communities. Vulnerable vegetation communities contained within riparian management areas under each action alternative include Great Valley oak riparian forest, northern coastal salt marsh, and northern interior cypress forest.

Table D-24
Rare Plants and Vulnerable Communities in Riparian Management Areas
by Action Alternative

Rare Plants and Vulnerable Communities	Alternative B	Alternative C	Alternative D
Rare plant occurrences (acres and percent)	7,400 (2%)	4,400 (1%)	11,900 (3%)
Vulnerable communities (acres and percent)	500 (<1%)	300 (<1%)	700 (<1%)

Source: BLM GIS 2023

¹ Acres are rounded to the nearest 100. For Alternative B and Alternative C, riparian management areas are not spatially defined but are calculated based on the buffer widths for each alternative in **Table 2-2**. To arrive at the Alternative B and Alternative C calculations in this table, the BLM first calculated the percentage of the decision area that would be in riparian management areas under Alternative B and Alternative C, then multiplied this percentage by the acres of each rare plant occurrence and vulnerable community. Riparian management areas are spatially defined under Alternative D, and these calculations were derived using GIS.

Retaining 52 miles of existing designated WSR river segments would affect the type of vegetation management that may be carried out in the managed corridors. Undertaking habitat enhancement and vegetation management projects where compatible with river values, would improve the condition and function of vegetation where projects were carried out. With limited options for vegetation management, vegetation community shifts may be slower and incremental depending on alternative methods utilized and timing of treatments.

There would be no effects common to all action alternatives from wildlife (including special status species and invasive, nonnative species) and wilderness and WSA management.

Alternative B

Managing approximately 21,970 acres to protecting wilderness characteristics over other resource uses, would increase protections on vegetation, and thus reduce direct and indirect effects from resource uses to a greater extent than Alternative A (none of these areas are managed under Alternative A). Managing the Red Mountain (320 acres) and Sacramento River Bend (6,640 acres) areas would provide protection for rare plants and vulnerable communities on serpentine soils and vernal pool-grassland landscapes.

Commercial timber harvests would generally not be allowed in LSRs, with limited exceptions. Mechanical thinning would be allowed for non-commercial habitat enhancement, including increasing stand heterogeneity. Where carried out, treatments would promote late seral stage forest conditions, however, prohibiting commercial use may restrict overall acres treated in the long-term.

Prohibiting apiaries on and near habitat for special status plants and threatened vegetation communities would help maintain the extent and ecological function of these communities. This would come about because the health of native pollinator populations would be more likely to be maintained in the absence of apiaries. In turn, resilience of these communities would also be maintained.

Motorized travel effects on rare plants and vulnerable habitats from trampling and invasive, nonnative plant introduction and spread would be reduced in key areas compared with Alternative A. For example, several additional ACECs managed for rare plants and vulnerable communities would be closed to OHV, precluding effects in these areas. These ACECs include the: Ma-le'l Dunes ACEC, Corning Vernal Pools ACEC, North Table Mountain ACEC, Lacks Creek ACEC, and Upper Burney Dry Lake ACEC. As under Alternative A, the Hawes Corner and Sacramento Island ACEC would remain closed to OHV travel.

Livestock grazing would be available in more areas than under Alternative A, however, it would be unavailable in several areas with higher botanical value, including the: Upper Burney Dry Lake and Baker Cypress ACEC, Eden Valley ACEC, Hawes Corner ACEC, Ma-le'l Dunes ACEC, North Table Mountain ACEC, and other sensitive areas that may provide habitat for rare plants, including on decomposed granite soil areas. As a result, detrimental effects on rare plants and vulnerable communities may be reduced compared with Alternative A.

The BLM would manage nine additional ACECs and approximately 34,220 additional acres in ACECs compared with Alternative A; the acres of vegetation cover types, riparian management areas, number of rare plant occurrences, and acres of vulnerable communities are summarized in the tables in Effects Common to All Alternatives. In general, management under Alternative B would help move more acres of vegetation cover types toward desired conditions, as more acres would be subject to specific management direction and under protective restrictions. Similarly, there would be more rare plant occurrences and acres of vulnerable communities in ACECs than under Alternative A, helping to maintain the extent and condition of these areas to a greater degree.

Continuing to manage and expand the Baker Cypress ACEC would provide increased protections to the rare cypress vegetation cover type, as well as mountain vernal pool habitat. This would come about from an increase in the ACEC's size (from 141 to 183 acres) due to inclusion of the proposed Upper Burney Dry Lake area, to form the Upper Burney Dry Lake and Baker Cypress ACEC. Carrying out vegetation treatments to enhance serotinous conifer function and condition, acquiring adjacent lands to preserve the hydrological regime, and prohibiting livestock grazing and other disturbing resource uses would help

maintain or improve the extent of rare cypress woodlands, and improve the function of these areas, increasing resiliency in the long-term.

Similarly, continuing to manage, and in cases expanding, existing ACECs for late-successional forests and riparian areas, would help maintain the extent and condition of these areas by expanding protective restrictions on disturbing activities in these areas. This includes the Gilham Butte ACEC, Laqua Butte ACEC, and Lacks Creek ACEC (for late-successional forest), and the Sacramento Island ACEC and Shasta and Klamath River Canyon ACEC (for riparian areas).

Continuing to manage the Hawes Corner ACEC and expand the Sacramento River Bend ACEC and Ma-le'l Dunes ACEC (this area is called the Manila Dunes ACEC under Alternative A) would allow the BLM to continue to manage for the botanical relevant and important values in these ACECs. The values include special status plant populations and habitat for slender Orcutt grass and other vernal pool flora in the Hawes Corner and Sacramento River Bend ACECs, and coastal dune habitats in the Ma-le'l Dunes ACEC. These areas are also considered vulnerable vegetation communities by the California Natural Diversity Database (CNDDDB). Managing for the relevant and important values would include increasing the resistance and resilience of these areas to climate-driven disturbance. This would help maintain the extent of suitable dune and vernal pool habitat for these species and improve the condition and function of managed vulnerable habitats.

Alternative B also includes several proposed ACECs that would be managed to protect unique vegetative resources. Protection would primarily come about through increased protection from potentially disturbing uses including ROWs, OHV use, and minerals leasing and development. These ACECs, and the vegetative resources that would be protected, include the following:

- 1,110-acre Black Mountain ACEC (coniferous forest habitat with late-successional characteristics)
- 460-acre Upper Matole ACEC (riparian vegetation)
- 10,810-acre Eden Valley ACEC (rare and endemic plants and plant communities)
- 4,380-acre Beegum Creek Gorge ACEC (rare and endemic serpentine plant species)
- 3,180-acre Willis Ridge ACEC (rare and endemic plant species and forests with late-successional characteristics)
- 630-acre South Spit ACEC (sensitive plant and wetland habitat)
- 170-acre Corning Vernal Pools ACEC (rare critical habitat that supports threatened and endangered species)
- 50-acre North Table Mountain ACEC (Butte County golden clover)

Managing six Section 202 WSAs under a non-impairment standard consistent with BLM Manual 6330 would indirectly provide protection to the 12,090 acres of vegetation cover types within the areas, as described under *Impacts Common to All Alternatives*. In these areas, it is likely that the pace and scale of vegetation treatments would be limited compared with non-wilderness areas, slowing progress toward desired conditions and ecological resilience.

There would be no effects under Alternative B from air and atmospheric values, soils, water resources, vegetation, wildlife, fish, coastal resources, wildland fire, energy and minerals, and WSR management.

Alternative C

Managing approximately 5,840 acres to protect wilderness characteristics over other resource uses would increase protections on vegetation and reduce direct and indirect effects from resource uses to a greater extent than Alternative A (none of these areas are managed under Alternative A).

Effects on LSRs would be similar to those described for Alternative B. However, allowing commercial timber harvests to promote late seral stage forest conditions may increase overall acres treated in the long-term.

Motorized travel effects on rare plants and vulnerable habitats from trampling and invasive, nonnative plant introduction and spread would likely be increased in key areas compared with Alternative A. For example, the only botanical ACEC that would be closed to OHV travel would be the Ma-le'l Dunes ACEC (all other ACECs would have OHV travel limited to existing designated routes). This would likely increase trampling effects and invasive, nonnative plant production and spread in rare plant habitats, potentially reducing habitat suitability.

While 271,800 acres would be available for livestock grazing under Alternative C, only 64,500 acres would continue to be managed as grazing allotments, which would be an increase from Alternative A. Impacts on vegetation would be limited to those areas where livestock grazing allotments are active. Livestock grazing would be unavailable in a few areas with higher botanical value, including the Ma-le'l Dunes ACEC, and other sensitive areas that may provide habitat for rare plants, including on decomposed granite soil areas. As a result, detrimental effects on rare plants and vulnerable communities may be somewhat reduced compared with Alternative A.

The BLM would manage nine fewer ACECs and about 12,170 fewer acres in ACECs compared with Alternative A; the acres of vegetation cover types, riparian management areas, number of rare plant occurrences, and acres of vulnerable communities are summarized in the tables in Effects Common to All Alternatives. Fewer acres of unique vegetation cover types, riparian areas, and rare plant habitats would be specifically managed for these resources, and as a result, movement toward desired conditions may be slower, and more areas would be subject to effects from resources' uses like OHV use and livestock grazing.

The Baker Cypress ACEC, Hawes Corner ACEC, Sacramento Island ACEC, and Shasta and Klamath River Canyon ACEC would not be retained, which would potentially remove some protections and targeted management for the rare cypress vegetation cover type, mountain vernal pool habitat, slender Orcutt grass and its habitat, and riparian areas. However, compliance with existing regulations and guidance for sensitive species (for example, Manual 6840 and the ESA) and aquatic resources management (for example, protections under the Clean Water Act) would still provide protections for these resources, helping to maintain, but not necessarily improving, the extent, condition, and resilience of these areas.

Reducing the size of (Gilham Butte ACEC) or not retaining (Laqua Butte and Lacks Creek ACECs) ACECs for late-successional forests may similarly reduce some protections and targeted management for this vegetation type. However, most of these areas would be managed as LSRs, and as a result, there would still be management to enhance and protect late-successional conditions in most of these areas, including vegetation, forest health, and fuels treatments to enhance resilience.

Continuing to manage the Ma-le'l Dunes ACEC and Sacramento River Bend ACEC with additional protections compared with Alternative A, would protect coastal dune habitats, protect vernal pool habitat for slender Orcutt grass, and enhance the resilience of these areas. Management of these areas and resulting effects would be very similar to that described under Alternative B.

Managing three river segments (totaling 11.2 miles) as suitable for inclusion in the NWSRS, and releasing the remaining segments, would result in fewer protections on vegetation resources. Undertaking habitat enhancement and vegetation management projects (see *Impacts Common to All Action Alternatives*), would still be done, but there would be fewer restrictions on the types of treatments that could be carried out. As a result, with more options for vegetation management, vegetation community shifts may be faster than Alternative A, depending on alternative methods utilized and timing of treatments.

There would be no effects under to Alternative C from air and atmospheric values, soil, water resources, vegetation, wildlife, fish, coastal resources, wildland fire, lands and realty, energy and mineral, and wilderness and WSA management.

Alternative D

Managing approximately 11,570 acres to protect wilderness characteristics over other resource uses, would increase protections on vegetation and reduce direct and indirect effects from resource uses to a greater extent than Alternative A (none of these areas are managed under Alternative A).

Effects from motorized travel on rare plants and vulnerable habitats from trampling and invasive, nonnative plant introduction and spread would be similar to those described for Alternative B. This is because the ACECs managed for rare plants and vulnerable habitats would have the same travel designations as under Alternative B.

Effects on vegetation cover types and rare plants and vulnerable communities from ACEC management would be the similar as described for Alternative B.

Managing 56 river segments (totaling 135.2 miles) as suitable for inclusion in the NWSRS, and releasing the remaining segments, would result in some protections for vegetation resources. Undertaking habitat enhancement and vegetation management projects (see *Impacts Common to All Action Alternatives*), would still be done. Habitat enhancement and vegetation management projects would be allowed where they have been determined to protect and enhance river values and to be compatible with the area's essentially primitive condition. As a result, with more options for vegetation management, vegetation community shifts may be faster than under Alternative A, depending on alternative methods utilized and timing of treatments.

Managing two Section 202 WSAs under a non-impairment standard consistent with BLM Manual 6330 would indirectly provide protection to the 540 acres of vegetation cover types within the areas. Managing the Red Mountain (320 acres) area would provide protection for rare plants and vulnerable communities on serpentine soils. In these areas, it is likely that the pace and scale of vegetation treatments would be limited and progress toward desired conditions and ecological resilience would be slower, as described under *Impacts Common to All Alternatives*.

There would be no effects under Alternative D from air and atmospheric values, soils, water resources, vegetation, wildlife, fish, coastal resources, wildland fire, lands and realty, and minerals management. Effects

livestock grazing management would be the same as described under Alternative B. Effects from LSRs would be the same as those described under Alternative C.

Cumulative Impacts

The cumulative effects analysis area is the planning area, regardless of landownership. Numerous federal, state, Tribal, county, and privately owned lands surround the BLM-administered lands in the planning area. Approximately 70 percent of the planning area is within the boundaries of the 1994 NWFP. The BLM and Forest Service management objectives are similar in respect to moving vegetation toward desired conditions, which includes increasing acres of prescribed wildfire and mechanical thinning for resource benefit. Generally, other federal land management carried out in the planning area by the Service and NPS; CAL FIRE regulations and management; Tribal resource management plans; and county comprehensive and general plans contain management direction and actions that would align with the BLM management to improve vegetation condition in the planning area. Maintaining connections to lands in the planning area that lie outside of the decision area is integral for an all-lands approach to land management into the future and to generate changes that benefit ecosystems over greater areas.

Effects on vegetation, including general vegetation communities, riparian and wetland areas, rare plant habitats and vulnerable communities that would occur from similar or complimentary management outside the decision area on Tribal, state, and other federal lands, would beneficially affect the condition of vegetation in the decision area. This would increase regional resiliency to climate-driven disturbances and reduce the potential for uncharacteristic large and severe wildfires.

The cumulative effects that past activities have had on vegetation in the decision area are discussed as part of the affected environment and establish a baseline condition for management. Specific past and present activities that have contributed to cumulative effects on vegetation in the planning area are listed in **Table C.3.2, Past, Present, and Reasonably Foreseeable Future Actions**, in **Appendix C**. Throughout the broader landscape, past management practices have resulted in conditions that depart from reference conditions, creating a risk of not achieving desired conditions in the future. Trees are smaller, younger, and denser overall than they would have been historically, and fuels are built up and more continuous, putting vegetation communities and rare plant habitats at risk of uncharacteristically large and severe wildfire. Oak woodland understories and native perennial grasslands are encroached on by invasive annual grasses. Riparian areas are disconnected from river floodplains and from other riparian areas in the same river system.

Broad regional stressors that may intensify in the future include rising population levels and participation in outdoor recreation with resulting increased demand for and pressures on public lands including increasing water demands that can exacerbate streamflow issues (that is, decreasing summer low flows). Summer low flows have decreased in Northern California coastal streams and this trend is expected to continue. Higher temperatures, more frequent drought, and altered precipitation amounts and timing will likely lead to increased wildfire frequency and intensity and increased demand for higher-elevation and river-related recreation opportunities to escape the heat of lower elevations, especially on the Redding FO.

Climate change will also be a broad stressor and result in potentially dramatic effects on vegetation distribution and plant-wildlife relationships in the planning area. Butz and Safford (2010, 2011) anticipate a decline in evergreen conifer forests (those dominated by Douglas-fir, Sitka spruce, grand fir) and

replacement by higher proportions of mixed conifer-hardwood forest, and a large expansion of inland grasslands due to increased wildfire frequency in inland shrublands and forests. Furthermore, increased wildfire frequency and/or intensity in mixed conifer forests could alter forest species composition and reduce the size and extent of late-successional refugia. Thus, if wildfire becomes more active under future climates, there may be major repercussions for late-successional forest and late-successional-dependent biota.

It is assumed that proposed management in the plan area that aligns with or compliments Tribal, federal, and state management to improve vegetation condition would cumulatively contribute to the movement of vegetation toward desired conditions. Such management includes forest health and fuels treatments to reduce hazardous fuels, improve wildlife habitat, and increase climate resilience. There are currently 20 vegetation projects proposed in the Redding FO boundary, another two in the Arcata FO boundary (see **Section D.3**, Cumulative Impacts, and the list of specific actions in **Table C.3.2**, in **Appendix C**), and numerous others on Forest Service lands in the planning area. These include, but are not limited to:

- Vegetation and habitat restoration projects, like the 500-acre Reading-Indian Creek Woodland Restoration and 300-acre Rancho Breisgau Oak Woodland Restoration, both on the BLM Redding FO, and the 140-acre Lacks Creek Prairie Pollinator Habitat Enhancement Project on the BLM Arcata FO
- Fuels reduction treatment projects, like the BLM's Hazard Removal and Vegetation Management Programmatic EA and Statewide WUI Fuels Treatment Programmatic EA, and others listed in **Table C.3.2**. Together, fuels reduction treatments in the plan area may reduce hazardous fuels and the potential for uncharacteristically severe wildfire on tens of thousands of acres.
- Forestry and forest health improvement project, including the Oregon Mountain Forest Health Thinning and Fuels Reduction Project and the Baker Cypress Restoration, totaling 300 acres on the BLM Redding FO, and the Butte Creek and Larabee Buttes Hazardous Fuels Reduction and Fire Resiliency Project and the Cahto Peak Oak Woodland Restoration, totaling 500 acres on the BLM Arcata FO.

Proposed natural resource management efforts using vegetation treatments to move vegetation cover types toward desired conditions and reduce hazardous fuel loads would contribute to landscape restoration on a large scale, with a focus on reestablishing the composition, structure, patterns, and processes necessary to facilitate healthy, resilient, sustainable ecosystems. This management would also lessen the impact of nonnative, invasive plants, improve wildlife habitat, and reduce the risk of uncharacteristic wildfire. Increasing health and ecosystem function would also increase the ability of ecosystems in the analysis area to adapt to climate change.

Defining and managing for desired conditions for each vegetation cover type, considering anticipated future climate conditions, would increase the resistance and resilience to disturbance in the face of climate change under all action alternatives to a greater extent than under Alternative A. Therefore, the action alternatives would cumulatively contribute to desired conditions more so than Alternative A. Action alternatives that would promote active vegetation management to enhance ecosystem resiliency to large disturbances (e.g. fire, drought, rain events) (Alternative C), may have greater contributions than other action alternatives (Alternatives B and D). Alternative C would have fewer restrictions placed on active vegetation management to move vegetation conditions toward desired conditions. Therefore, the pace and scale of active vegetation treatment would be greater under Alternative C than other action

alternatives. Desired conditions for the planning area include less fuel loading and less risk of uncharacteristic disturbance.

D.2.5 Wildlife

Issue Statements

- Given the broader development-related and climate-related habitat trends, how would the alternatives affect resiliency and recovery of special status species?
- Given changing land use patterns and climate, how would the alternatives affect habitat conditions or population levels?
- How would the alternatives affect activities in conservation areas for special status species?
- How would the alternatives affect the compatibility of wilderness goals and special status species protection and recovery goals?

Affected Environment

This section focuses on wildlife species and species groups for which management direction affects the recovery, maintenance, control, or improvement of wildlife populations and their habitats. These include special status species (SSS; ESA-listed and BLM sensitive species), invasive wildlife species, and other/general wildlife, including bats, migratory birds, game birds, waterfowl, big game, small game, reptiles, and amphibians. These species groups along with their general habitat types are discussed in more detail in the following sections.

General Wildlife

The large area and diverse ecosystems in the planning area provide habitat for a multitude of wildlife species, including numerous birds, bats, mammals, reptiles, amphibians, and insects. The CWHR System classifies wildlife habitat based on constituent stage classes and structures (Mayer and Laudenslayer 1988). The CWHR habitat classifications that occur in the planning area are listed in **Table D-25** and shown in **Map 3-4** in **Appendix A**.

Vegetation is one of the primary factors that influences species diversity and abundance and is one of the more obvious habitat components influenced by management, land use, and natural disturbance. Species' presence and absence in the planning area, in many cases, is directly tied to availability, current ecological condition, and key ecosystem characteristics of vegetation types. Therefore, associating particular vegetation types with species or species groups is useful for assessing future management needs. **Table D-25** presents a crosswalk between the major vegetation cover types, CWHR habitat classifications, and associated wildlife species. The acres of major vegetation cover types in the planning area are shown in **Table D-7** in **Section D.2.4**. For the purposes of this analysis, wildlife habitats are discussed in terms of these vegetation cover types.

Table D-25
Vegetation Cover Types, CWHR Habitat Classifications, Wildlife Species Crosswalk

Vegetation Cover Type	CWHR Habitat Classification	Associated Wildlife Groups and Considerations
Chaparral shrubland	Mixed and montane chaparral	Examples of wildlife species that are restricted to mixed chaparral include Bell's sparrow, black-chinned sparrow, mountain quail, wrentit, California thrasher, green-tailed Towhee, and fox sparrow. Many species are also found in other shrub-dominated types, including chamise-redshank chaparral (CRC), montane chaparral (MCP), coastal scrub (CSC), and sagebrush (SGB), or the shrubs beneath several woodland and forest types (England, year unknown). Numerous rodents inhabit chaparral. Deer and other herbivores often make extensive use of chaparral. Throughout the west slope of the Sierra and south through the Transverse Range, deer are strongly associated with chaparral communities. Montane chaparral provides critical summer range foraging areas, escape cover, and fawning habitat. In the Sierra, fawning areas are frequently found where the chaparral lies adjacent to or contains an interspersed of perennial grass or meadow-riparian habitat. Some small herbivores use chaparral species in fall and winter when grasses are not in abundance. Rabbits and hares eat twigs, evergreen leaves, and bark from chaparral. Shrubs are important to many mammals as shade during hot weather and moderate temperatures and from wind velocity in the winter. Many birds find a variety of habitat needs in the montane chaparral. It provides seeds, fruits, insects, protection from predators and climate, as well as singing, roosting, and nesting sites (CDFW 2021).
Coastal forests	Redwood	Redwood habitats provide food, cover, or special habitat elements (for at least one season) for 193 wildlife species, including 12 reptiles, 18 amphibians, 109 birds, and 54 mammals. Of these species, 18 are considered harvest species. Species such as the red-legged frog, ensatina, osprey, ringtail, fisher, and marbled murrelet show a relatively high preference for various redwood habitat phases and stages. Additionally, sensitive species such as the peregrine falcon, pileated woodpecker, spotted owl, and northern flying squirrel can be found. The bald eagle can also be found in the habitat (considering the special habitat element) but is usually not a common visitor (CDFW 2021).
Coastal prairies	Perennial grassland	Perennial grassland provides optimum habitat for many species, including the common garter snake, western terrestrial garter snake, northern harrier, barn owl, burrowing owl, western kingbird, Say's phoebe, barn swallow, western meadowlark, savannah sparrow, grasshopper sparrow, Townsend's mole, coast mole, Botta's pocket gopher, western harvest mouse, California vole, long-tailed vole, and Oregon vole. In addition, perennial grassland often serves as feeding habitat for the turkey vulture, red-tailed hawk, American kestrel, peregrine falcon, western bluebird, fringe-tailed bat, big brown bat, striped skunk, coyote, black-tailed jackrabbit, brush rabbit, Roosevelt elk, and black-tailed deer (CDFW 2021).

Vegetation Cover Type	CWHR Habitat Classification	Associated Wildlife Groups and Considerations
Douglas-fir- and tanoak-dominated forest	Douglas-fir	This habitat supports a high abundance of wildlife species. A study reported that northwest coastal coniferous forests supported a higher average bird density than any other forest type in North America. Bird species typical of this habitat include spotted owl, western flycatcher, chestnut-backed chickadee, golden-crowned kinglet, Hutton's vireo, Cassin's vireo, hermit warbler, and varied thrush. Among amphibians and reptiles, the distributions of northwestern salamander, Pacific giant salamander, Olympic salamander, Del Norte salamander, black salamander, clouded salamander, tailed frog, and northwestern garter snake are largely coincident with the distribution of Douglas-fir habitat. Although not restricted to this habitat, the ensatina is its most abundant amphibian. Typical mammals include fisher, deer mouse, dusky-footed woodrat, western redbacked vole, creeping vole, Douglas' squirrel, Trowbridge's shrew, and shrew-mole (CDFW 2021).
Dunes	None	High physical and structural diversity in coastal dune systems supports a diverse mix of wildlife species such as shorebirds, migratory birds, aquatic and terrestrial invertebrates, reptiles, and small mammals.
Foothill pine and oak woodland	Blue oak-foothill pine	Blue oak-foothill pine (BOP) woodlands provide breeding habitats for a large variety of wildlife species, although no species is totally dependent on them for breeding, feeding, or cover. In the western Sierra Nevada, for example, 29 species of amphibians and reptiles, 79 species of birds, and 22 species of mammals find mature stages of this type suitable or optimum for breeding (CDFW 2021).
Grasslands, vernal pools, and wetlands	Annual grassland	Many wildlife species use annual grasslands for foraging, but some require special habitat features such as cliffs, caves, ponds, or habitats with woody plants for breeding, resting, and escape cover. Characteristic reptiles that breed in annual grassland habitats include the western fence lizard, common garter snake, and western rattlesnake. Mammals typically found in this habitat include the black-tailed jackrabbit, California ground squirrel, Botta's pocket gopher, western harvest mouse, California vole, badger, and coyote. Common birds known to breed in annual grasslands include the burrowing owl, short-eared owl, horned lark, and western meadowlark. This habitat also provides important foraging habitat for the turkey vulture, northern harrier, American kestrel, white-shouldered kite, and prairie falcon (CDFW 2021).

Vegetation Cover Type	CWHR Habitat Classification	Associated Wildlife Groups and Considerations
Juniper and sage	Pinyon-juniper, sagebrush	Characteristic species of pinyon-juniper include pinyon mouse, bushy-tailed woodrat, pinyon jay, plain titmouse, and bushtit. Both pinyon nuts and juniper berries are important food sources, and many wildlife species serve as dispersal agents for these plants (CDFW 2021). Sagebrush is very important to wildlife because it serves as habitat for some of the more important game animals and occupies such a vast area. It is a major winter-range type for migratory mule deer, and many herds summer in sagebrush-ponderosa pine complexes at middle and high elevations. The sagebrush and its included low sagebrush and bunchgrass types are the principal habitats for pronghorns. It is also occupied by jackrabbits, cottontail rabbits, ground squirrels, least chipmunks, kangaroo rats, wood rats, pocket mice, deer mice, grasshopper mice, and sagebrush voles. Birds of the sagebrush type include the chukar, black-billed magpie, gray flycatcher, pinyon jay, sage thrasher, and several sparrows and hawks. Special status species found in the sagebrush type include the peregrine falcon, bald eagle, Lost River sucker, short-nosed sucker, Owens River pupfish, Owens tui chub, and Lahontan and Paiute cutthroat trout (CDFW 2021).
Knobcone	Closed-cone pine-cypress	Numerous game species, including tree squirrels and band-tailed pigeons, and nongame species make use of this type for feeding and cover. Few species make substantial use of this type as a breeding habitat, although the great horned owl and red-tailed hawk will nest in closed-cone pine forests (CDFW 2021).
Late successional forest	—	Species within this habitat type are characterized by their dependence on mature and late-seral forest stands for some portion of their life cycle. Late-seral forests supply unique habitat features, primarily cavities in large-diameter and decadent trees, snags, and logs, which these species use for nesting/denning, and resting. Home to late-successional and old growth-related species, including the northern spotted owl (NSO), marbled murrelet, fisher, marten, and other large and small mammals, birds, reptiles, amphibians, and invertebrates.
Mixed conifer	Sierran mixed conifer, Klamath mixed conifer	The mixed conifer forest supports some 355 species of animals. Special status species inhabiting mixed conifer include spotted owl, fisher, pine marten, bald eagle, and peregrine falcon. Variety in plant species composition provides diversity in food and cover. Black oak acorns, berries from a variety of shrubs (e.g., deerbrush), and a great number of grasses and forbs provide the forage resource essential for wildlife (CDFW 2021). Klamath mixed conifer covers a moderately large area in northwestern California. Extensive glaciation combined with complex geology has led to highly diverse vegetation, soils, and wildlife habitats. A wide array of nesting and feeding opportunities and thermal cover for wildlife has resulted. One study lists the wildlife species that use this habitat at various successional stages. Rare, threatened, or endangered wildlife in this habitat include the spotted owl, peregrine falcon, wolverine, and Siskiyou Mountains salamander (CDFW 2021).

Vegetation Cover Type	CWHR Habitat Classification	Associated Wildlife Groups and Considerations
Oak savannas and open woodlands	Valley oak woodland	These woodlands provide food and cover for many species of wildlife. Oaks have long been considered important to some birds and mammals as a food resource (i.e., acorns and browse). A study reported that 30 bird species known to use oak habitats in California include acorns in their diet. An average of 24 species of breeding birds were recorded on a study plot at Ancil Hoffman Park, near Carmichael, in Sacramento County from 1971 to 1973. The study plot was dominated by valley oaks but included some cottonwood in the canopy. Probably the most noteworthy breeding bird species recorded was the red-shouldered hawk. In decreasing order, the most common species were European starling, California quail, plain titmouse, scrub jay, rufous-sided towhee, Bewick's wren, bushtit, and acorn woodpecker. A study indicates that the ranges of about 80 species of mammals in California show substantial overlap with the distribution of valley oaks, and several, such as fox and western gray squirrels and mule deer, have been documented using valley oaks for food and shelter (CDFW 2021).
Rare cypress	Closed-cone pine-cypress	Numerous game species, including tree squirrels and band-tailed pigeons, and nongame species make use of this type for feeding and cover. Few species make substantial use of this type as a breeding habitat, although the great horned owl and red-tailed hawk will nest in closed-cone pine forests (CDFW 2021).
Valley foothill riparian	Valley foothill riparian	Valley-foothill riparian habitats provide food, water, migration and dispersal corridors, and escape, nesting, and thermal cover for an abundance of wildlife. At least 50 amphibians and reptiles occur in lowland riparian systems. Many are permanent residents; others are transient or temporal visitors. In one study conducted on the Sacramento River, 147 bird species were recorded as nesters or winter visitors. Additionally, 55 species of mammals are known to use California's Central Valley riparian communities (CDFW 2021). The following special status species are riparian obligates species: Western yellow-billed cuckoo, willow flycatcher, yellow warbler, yellow-breasted chat, the listed Least Bell's Vireo (historically).
Riparian management areas (perennial, intermittent, and ephemeral streams, lakes, ponds, reservoirs wetlands)	—	Riparian habitats provide food, water, migration and dispersal corridors, and escape, nesting, and thermal cover for an abundance of wildlife such as amphibians, aquatic reptiles, waterfowl, migratory birds, small and large mammals including bats; also, fish and aquatic invertebrates (see Section D.2.6 , Fish and Aquatic Species).

Each vegetation cover type provides key features that contribute to group and individual health and the ability to successfully reproduce at or above replacement level. Key habitat features for wildlife in the planning area include mature/old growth conifer and mixed hardwood forest stands; wetland, riparian areas, and springs; snowy plover nesting habitat; coastal and inland prairies; rock outcroppings supporting nesting raptors; and vernal pool habitat. Connectivity is another key feature for wildlife because many species rely on large, undisturbed blocks of land for daily movements and movement between seasonal habitats. The CDFW's Essential Connectivity Map depicts large, relatively natural habitat blocks that

support native biodiversity and areas essential for ecological connectivity between them. Based on the model, there are 5,446,600 acres of ECCs in the planning area habitats (**Map 2-3** in **Appendix A**). Of these, approximately 92,900 acres (2 percent of ECCs in the planning area) are on BLM-administered land. The BLM only has discretionary management over these acres.

Protected areas are important for wildlife because they are managed to protect and enhance wildlife populations and habitat. In the planning area, public lands protected for wildlife include the Mike Thompson Wildlife Area located on the South Spit Humboldt Bay, which is an important western snowy plover (*Charadrius nivosus nivosus*) breeding area. Additionally, ACECs in both FOs provide for the protection of unique plant communities, watersheds, and natural processes that benefit wildlife. The Paynes Creek Wetland Complex, within the Sacramento River Bend ACEC, provides habitat for waterfowl, shorebirds, wading birds, beaver, river otter, amphibians, reptiles, and aquatic invertebrates.

Migratory birds

The planning area provides habitat for a suite of migratory bird and raptor species associated with grasslands, shrublands, forest and woodlands, wetlands, riparian areas, and coastal areas. A list of migratory bird species with the potential to occur in the planning area is provided in the Information Planning and Consultation (IPaC) list (USFWS 2023). Many of these species are also special status species (**Table D-28**). Migratory birds are protected under the Migratory Bird Treaty Act of 1918, as amended (16 USC 703-712). Bald and golden eagles are protected by the Bald and Golden Eagle Protection Act and are also managed as BLM sensitive species. While every migratory bird species will not be analyzed individually, all the species listed in the IPaC and all other avian species in the decision areas are covered by the analysis below.

Bats

Bats are typically associated with cave and karst resources, which serve as hibernacula for many species during hibernation. These features are described and analyzed in detail in **Section D.2.12**, Cave and Karst Resources. When they are not hibernating, bats need access to food and water as well as suitable habitat throughout their annual life cycle. Roosting habitat may include forests and woodland, where some bat species roost underneath bark, in cavities, or in crevices of both live trees and snags. Riparian areas and wetlands generally provide foraging resources, such as insects. Other foraging, roosting, and traveling habitat types include shrublands, grasslands, rocky outcroppings, abandoned structures, and bridges.

White-nose syndrome (WNS) is a fungal disease associated with extensive mortality of bats in eastern North America and has recently been found in several populations in the West. The BLM is committed to implementing measures to prevent and reduce the impacts of WNS and may adjust its policy on WNS as more information becomes available through ongoing monitoring and research efforts. In 2010, the BLM issued Instruction Memorandum 2010-181 to give national direction on how to prepare for the anticipated occurrence of WNS (UDSI BLM 2010a).

Mammals

The planning area is home to numerous large and small mammals, such as squirrels, rabbits, foxes, deer, elk, and bears. Several mammalian species, such as Pacific martens, ringtails, and gray wolves, are special status species and are discussed below (**Table D-28**). Big game are discussed in the big game section below. Mammalian species generally require habitat characteristics that provide food, cover, and shelter. Individual species may use a range of habitats, including forests, woodlands, shrublands, and riparian areas.

Reptiles and amphibians

Numerous species of reptiles and amphibians occur in the planning area, including salamanders, frogs, toads, snakes, lizards, and turtles, many of which are amphibians and reptiles that are also special status species (**Table D-28**). Amphibians and aquatic reptiles rely on aquatic habitat for all or part of their life history, whereas terrestrial reptiles can be found in a variety of upland habitats. Range information for reptiles and amphibians in the planning area is available at Californiaherps.com.

Small game

The planning area supports a diverse array of small game species that are hunted for sport and food. Examples are gray squirrel, cottontail rabbit, wild turkey, California quail, mountain quail, ruffed grouse, and sooty grouse. Small game species are found in a variety of habitats, including wooded chaparral, grasslands, and sagebrush, and forested areas, that provide cover, food, breeding sites, and other resources necessary for their survival.

Invertebrates

The vegetation cover types listed in **Table D-7** provide nectar and host plants to native and nonnative pollinators, such as the monarch butterfly (*Danaus plexippus*) and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). In turn, the pollinators provide a vital service to sustaining vegetation itself and agricultural resources on or adjacent to public land. Direction for managing pollinators and their habitat is provided in the National Strategy to Promote the Health of Honeybees and Other Pollinators (White House 2015) and IM 2016-013, Managing for Pollinators on Public Lands. Immediate measures to support pollinators may include planting pollinator-friendly vegetation and increasing flower diversity in plantings, limiting mowing practices, and avoiding the use of pesticides in sensitive pollinator habitats through integrated vegetation and pest management practices (BLM 2021a).

Vernal pools are seasonal pools of water with no defined inlet or outlet. Due to their unique biogeochemistry, vernal pools in the planning area provide habitat for many endemic and rare species of flora and fauna. These include several special status crustaceans, such as vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*) (**Table D-25**). The locations of vernal pools in the planning area have been mapped and are shown in **Map 3-5** in **Appendix A**. The Corning Vernal Complex has a high density of vernal pools that support a high density of the federally listed vernal pool fairy shrimp as well as six sensitive plant species (**Table D-8** in **Section D.2.4, Vegetation**). Slender Orcutt grass (*Orcuttia tenuis*) is a federally listed plant species endemic to vernal pools in the planning area and discussed in **Section D.2.4, Vegetation**. Threats to vernal pool ecosystems include habitat loss and fragmentation due to urban development, loss of habitat due to agriculture conversion, altered hydrology, invasion by nonnative weeds, under- or overgrazing, and inadequate regulatory mechanisms. Sensitive fish and aquatic invertebrate species are described in further detail in **Section D.2.6, Fish and Aquatic Species**.

Waterfowl

The Paynes Creek Wetlands and other wetlands in the Sacramento River Bend ACEC serve as vital habitat for migrating waterfowl within the Pacific flyway. The complex is a mosaic of natural and man-made vernal pools and 93 acres of managed seasonal wetlands that serve as habitat for a variety of waterfowl as well as marsh birds and shorebirds. As a result, waterfowl hunting is a popular activity in the area. Among the most common waterfowl species in the region are mallards, American wigeons, green-winged teal,

northern pintails, and Canada geese. Additionally, waterfowl play an important ecological role in the region's wetland ecosystems.

Habitat Condition and Trends

Habitat conditions in the planning area have been influenced by past management practices, such as logging, which has removed many of the large conifer trees in the Coast Range's mixed hardwood stands. These stands are now dominated by hardwood species, primarily tanoak and Pacific madrone (*Arbutus menziesii*). Tanoak is an important food source for bear, deer, and elk. However, the lack of large Douglas-firs in logged areas is detrimental to the northern spotted owl (NSO), marbled murrelet, and Pacific fisher, which use that habitat for roosting, nesting, and foraging. Forestry practices that promote old-growth characteristics improve habitat quality of forested areas on public lands (except for early seral-adapted species).

Trends in habitat quality are highly variable, depending on which species is being considered and on the location of habitat improvement and restoration projects. Ecological factors such as drought and wildfire strongly influence habitat conditions. Recent wildfires have affected wildlife habitat in the Redding FO, where approximately 30 percent of the FO's land base burned between 2018 and 2020. The predicted increasing frequency of high-severity wildfires will continue to decrease habitat for old growth-dependent species, such as the NSO, marbled murrelet, fisher, and Pacific marten (BLM 2021a; also see **Section D.2.8, Wildland Fire Management**). Habitat recovery and species recolonization will depend on the burn size and severity, the season of burn, and individual species' ability to thrive in the altered, often simplified, structure of the post-fire environment (Smith 2000).

The health of wetlands, riparian areas, and springs remains an important objective for terrestrial and aquatic wildlife. Surface water is in poor condition in many areas due to pumping, storage, and, in some cases, chemicals (BLM 2021a). Multiple drought years have exacerbated the problem. Additionally, other factors are contributing to low flows and poor water quality that is detrimental to the health of animals that rely on surface water and may reduce the range of wildlife that requires access to surface water (**Section D.2.3, Water Resources**). However, restoration projects within the planning area are improving riparian habitat quality. See **Section D.2.6, Fish and Aquatic Species/Special Status Fish**, and **Section D.2.3, Water Resources**, for a detailed description of surface water and riparian conditions in the planning area.

Development has and continues to influence habitat conditions on adjacent public land due to increased use and related noise, trash, and public safety concerns. Private development has reduced the availability of oak grasslands of the foothills and reduced habitat for species including resident and migratory birds. Rare species richness increases east to west, with a distribution that generally follows the Trinity River Canyon, Coast Range, and western Klamath Mountains. Coastal properties continue to improve in direct response to dune restoration efforts. European beachgrass (*Ammophila arenaria*) has been mechanically removed, and native plants have successfully recolonized the treated area (BLM 2021a).

Big Game

Several big game species inhabit the planning area: black bear, elk, mule deer, and feral pigs. Pronghorn exist south of Red Bluff in Tehama and Glenn Counties, and they are occasionally found in Siskiyou County west of Highway 97. Although they are rarely found on the planning area, there is potential for them to occur. The Redding FO and CDFW continue to explore possibilities of reintroductions to reestablish

herds in their historic range within the planning area. Acres of big game habitats in the planning area are presented in **Table D-26**, and **Map 3-6**, Big Game Habitat, in **Appendix A**.

Big game species are known to browse shrubs, grasses, and forbs, and rely on various forested, grassland, and shrubland habitats for forage, cover, and breeding areas. The availability of habitat is related to species' preference, winter conditions, availability of forage, and population densities. Migration corridors are important for big game because they provide connected movement routes between seasonal habitats (**Map 2-3** in **Appendix A**).

Table D-26
Big Game Habitats

Habitat Type	NCIP Decision Area (acres)	NCIP Planning Area (acres)
Elk	264,100	10,355,200
Mule deer	382,000	14,084,800
Wild pigs	381,300	14,419,400
Black bear	328,800	11,978,900
Pronghorn	3,700	275,400

Source: BLM GIS 2023

Table D-27 summarizes population trends for big game species in the planning area.

Table D-27
Big Game Trends in the NCIP Planning Area

Common Name	Scientific Name	Population Trend	Habitat Trend
Elk	<i>Cervus canadensis</i>	Increasing	Increasing
Mule deer	<i>Odocoileus hemionus</i>	Stable to decreasing	Stable to increasing
Wild pigs	<i>Sus scrofa</i>	Increasing	Increasing (range expansion)
Black bear	<i>Ursus americana</i>	Increasing	Decreasing
Pronghorn	<i>Antilocapra americana</i>	Absent	Stable

Source: CDFW 2018a, 2018b, 2020b, 2020c

Three subspecies of elk occur in California: Roosevelt (*Cervus canadensis roosevelti*), Rocky Mountain (*C. c. nelsoni*), and tule (*C. c. nannodes*). In the planning area, Roosevelt elk are found near the coast in the Coast Range and Klamath Mountains ecoregions. Tule elk occur in the Coast Range foothill and Central Valley ecoregions. Rocky Mountain elk are present in the eastern portion of the Redding FO in the Eastern Cascades and Cascades ecoregions. All three elk subspecies populations and ranges appear to be expanding, with the statewide population estimated at approximately 12,900 individuals collectively for all three subspecies (CDFW 2018a).

There are six subspecies of mule deer (*Odocoileus hemionus*) in California: Columbian black-tailed deer (*Odocoileus h. columbianus*; Northern California and Pacific Northwest), California mule deer (*O. h. californicus*; west side of the Sierra Nevada down to the south coast), desert/burro mule deer (*O. h. eremicus*; southwest California, northwest Mexico, and Arizona), southern mule deer (*O. h. fuliginatus*; southernmost California and Baja California), Rocky Mountain mule deer (*O. h. hemionus*; northwest California, western and central North America), and Inyo mule deer (*O. h. inyoensis*; Sierra Nevada, California) (CDFW 2020a). Mule deer populations in California are considered stable to minimally declining from population peaks of

the 1960s (CDFW 2020b). However, populations in the planning area are still below desired levels due to factors such as habitat loss, road collisions, weather, predation, and disease outbreaks. Wildfires may have increased habitat in the planning area by creating access to improved forage within recently burned areas. The planning area contains 11 hunt zones managed by the CDFW. Populations in five of the 11 zones are below the 5-year average, populations in three of the zones are close to the 5-year average, and populations in three of the zones are above the 5-year average.

Wild pig populations are increasing, and range expansion is occurring throughout Northern California (CDFW 2016b; CDFW 2018b). Oak woodlands, grasslands, and brush areas are all suitable for pigs. Wild pigs are present in both FOs, and hunting is permitted; however, wild pig harvest within the Arcata and Redding FOs represents approximately 1.0 percent and 2.0 percent respectively, of statewide harvest for the 2016-2017 hunting season (CDFW 2018b).

Two subspecies of black bear are recognized in California: the northwestern black bear (*Ursus americana altifrontalis*) and the California black bear (*U. a. californiensis*). These subspecies are thought to be geographically distinguished by the crest of the Klamath Mountains. Differences in vegetation, water availability, and bear density allow biologists to differentiate three regional subpopulations of black bears in California—North Coast/Cascade, Sierra, and Central Western/Southwestern. The North Coast/Cascade subpopulation occurs north and west of the Sierra Nevada and comprises roughly half of the statewide black bear population.

Statewide, black bear populations appear to be increasing in recent years, with an estimated statewide population of 30,000 to 40,000 individuals (CDFW 2020c). The planning area contains numerous areas of high-density bear use, indicating good habitat conditions. However, recent wildfires have decreased the overall availability of bear habitat.

Special Status Species

BLM special status species include (1) species listed or proposed for listing under the ESA, and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as BLM sensitive species (BLM Manual 6840 – Special Status Species Management). All federal candidate species, proposed species, and species delisted for a minimum of 5 years are considered BLM sensitive species.

Special status species that have the potential occur in the planning area based on suitable habitat are listed in **Table D-28**. Some of these species are also listed as state threatened or endangered under the California Endangered Species Act (CESA) or are identified as State Species of Special Concern (SSC). For identified sensitive fish and aquatic invertebrate species, see **Section D.2.6**, Fish and Aquatic Species/Special Status Fish. For identified sensitive plant species, see **Section D.2.4** Vegetation.

Critical habitat for the following federally listed terrestrial wildlife species occurs in the planning area: marbled murrelet, NSO, Pacific marten, western snowy plover, and yellow-billed cuckoo (**Map 3-7**, Critical Habitat, in **Appendix A**; USFWS 2023).

Table D-28
Federal and State ESA-Listed Species and BLM Sensitive Species within the Planning Area

Category	Common Name	Scientific Name	Federal Status	State Status	BLM Status	Other Status	Habitat Occurs in Planning Area
Mammals	Fringed myotis	<i>Myotis thysanodes</i>	--	--	S	--	YES
Mammals	Gray wolf	<i>Canis lupus</i>	FE	SE	--	--	YES
Mammals	Long-eared myotis	<i>Myotis evotis</i>	--	--	S	--	YES
Mammals	Pacific fisher Northern California-southern Oregon (NCSO) DPS	<i>Pekania pennanti (pacifica)</i>	--	SC	S	SSC	YES
Mammals	Pacific marten, coastal DPS	<i>Martes caurina</i>	FT	--	--	--	YES
Mammals	Pacific marten, Critical habitat	<i>Martes caurina</i>	Proposed	--	--	--	YES
Mammals	Ringtail	<i>Bassariscus astutus</i>	--	CDFW fully protected	--	SF	YES
Mammals	Pallid bat	<i>Antrozous pallidus</i>	--	--	S	SSC	YES
Mammals	Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	--	--	S	SSC	YES
Mammals	Western mastiff-bat	<i>Eumops perotis californicus</i>	--	--	S	SSC	YES
Mammals	Yuma myotis	<i>Myotis yumanensis</i>	--	--	S	--	YES
Birds	Bald eagle	<i>Haliaeetus leucocephalus</i>	FD	SE	S	EA	YES
Birds	Bank swallow	<i>Riparia riparia</i>	--	ST	S	--	YES
Birds	Black brant	<i>Branta bernicula</i>	--	--	--	SSC	YES
Birds	Brown pelican	<i>Pelicanus occidentalis</i>	FD	SD	S	SF	YES
Birds	Burrowing owl	<i>Athene cunicularia</i>	--	--	S	SSC	YES
Birds	California spotted owl	<i>Strix occidentalis occidentalis</i>	PT	--	S	SSC	YES
Birds	Golden eagle	<i>Aquila chrysaetos</i>	--	--	S	EA, SF	YES
Birds	Greater sandhill crane	<i>Grus canadensis tabida</i>	--	ST	S	SF	YES
Birds	Marbled murrelet	<i>Brachyramphus marmoratus</i>	FT	SE	--	--	YES
Birds	Marbled murrelet, Critical habitat	<i>Brachyramphus marmoratus</i>	Final	--	--	--	YES
Birds	Northern goshawk	<i>Accipiter gentilis</i>	--	--	S	SSC	YES
Birds	Northern spotted owl	<i>Strix occidentalis caurina</i>	FT	ST	S	SSC	YES
Birds	Swainson's hawk	<i>Buteo swainsoni</i>	--	ST	S	--	YES
Birds	Tricolored blackbird	<i>Agelaius tricolor</i>	--	--	S	SSC	YES
Birds	Western snowy plover	<i>Charadrius nivosus ssp. nivosus</i>	FT	--	--	SSC	YES

Category	Common Name	Scientific Name	Federal Status	State Status	BLM Status	Other Status	Habitat Occurs in Planning Area
Birds	Western snowy plover, Critical habitat	<i>Charadrius nivosus</i> ssp. <i>nivosus</i>	Final	--	--	--	YES
Birds	White-tailed kite	<i>Elanus leucurus</i>	--	--	S	SF	YES
Birds	Willow flycatcher	<i>Empidonax traillii</i>	--	SE	--	--	YES
Birds	Yellow-billed cuckoo (western DPS)	<i>Coccyzus americanus</i>	FT	SE	--	--	YES
Birds	Yellow-billed cuckoo, Critical habitat	<i>Coccyzus americanus</i>	Final	--	--	--	YES
Reptiles	Mountain kingsnake	<i>Lampropeitis zonata</i>	--	--	S	SSC	YES
Reptiles	Southwestern pond turtle	<i>Emys marmorata pallida</i>	--	--	S	SSC	YES
Amphibians	California red-legged frog	<i>Rana draytonii</i>	FT	--	--	SSC	YES
Amphibians	Foothill yellow-legged frog	<i>Rana boylei</i>	PT	ST	S	SSC	YES
Amphibians	Shasta salamander	<i>Hydromantes shastae</i>	--	ST	S	--	YES
Amphibians	Western spadefoot	<i>Spea hammondi</i>	--	--	S	SSC	YES
Invertebrates	Hooded lancetooth	<i>Ancotrema voyanum</i>	--	--	S	--	YES
Invertebrates	Oregon shoulderband	<i>Helminthoglypta hertleini</i>	--	--	S	--	YES
Invertebrates	Franklin's bumble bee	<i>Bombus franklini</i>	FE	--	--	--	YES
Invertebrates	Behren's silverspot butterfly	<i>Speyeria zerene behrensii</i>	FE	--	--	--	YES
Invertebrates	Lotis blue butterfly	<i>Lycaeides argyrognomon lotis</i>	FE	--	--	--	YES
Invertebrates	Monarch butterfly	<i>Danaus plexippus</i>	FC	--	--	--	YES
Invertebrates	Siskiyou shoulderband	<i>Monadenia chaceana</i>	--	--	S	--	YES
Invertebrates	Tehama chaparral	<i>Trilobopsis tehamana</i>	--	--	S	--	YES
Invertebrates	Trinity shoulderband	<i>Helminthoglypta talmadgei</i>	--	--	S	--	YES
Invertebrates	Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT	--	--	--	YES

Source: USFWS 2023

FE=Federally Endangered, FT=Federally Threatened, FC=Federal Candidate, PT=Proposed Threatened, PE=Proposed Endangered, FD=Delisted due to recovery, ST=State Threatened, SC=State Candidate, SE=State Endangered, SD=Delisted from State ESA, S=BLM Sensitive Species, SSC=State Species of Special Concern, EA=Bald and Golden Eagle Protection Act, SF=Fully Protected

The current distribution of special status species in the planning area ranges widely. Some species, such as the NSO and marbled murrelet, are dependent on specific key habitat components (i.e., late-successional forest habitat), whereas, others, such as the Yuma myotis, are associated with several vegetation cover types (**Table D-25**). Special status species' trends also vary; some species are stable or increasing due to relatively low stressors and drivers (e.g., bald eagle, brown pelican). Other species of concern (NSO, marbled murrelet) have potentially high levels of risk and uncertainty.

Estimated populations trends for federally listed, state-listed, and BLM sensitive wildlife occurring in the NCIP are provided in **Table D-29**. Also see the Biological Assessment (BA) for a description of federally listed species' trends. Similar to general wildlife, special status species habitat conditions and trends are closely tied to vegetation conditions. However, special status species may be more dependent on key habitat features due to greater specificity, lower adaptability, endemism, and/or smaller range. For example, NSO, fisher, and marbled murrelet are highly dependent on late-successional forest habitat, while western snowy plovers nest and forage on sandy coastal beaches, such as in South Spit Humboldt Bay, as well as on riverine gravel bars.

Table D-29
Population and Habitat Trends for Federally Listed, State-Listed, and BLM Sensitive Wildlife Occurring in the NCIP

Category	Common Name	Ecoregions	Population Trend	Habitat Trend	Forecast
Mammals	Fringed myotis	CR, KM, FH, C, EC, SN	Declining	Declining	Declining
Mammals	Gray wolf	KM, EC, C, SN	Newly reestablished	Unknown	Stable
Mammals	Long-eared myotis	CR, KM, FH, C, EC, SN	Declining	Declining	Declining
Mammals	Ringtail	CR, KM, FH, C, EC, SN, CV	Unknown	Unknown	Unknown
Mammals	Pacific fisher NCSO DPS	CR, KM, C, EC, SN	Stable to declining	Declining	Declining
Mammals	Pacific marten coastal DPS	CR	Declining	Declining	Declining
Mammals	Pallid bat	CR, KM, FH, C, EC, SN, CV	Declining	Declining	Declining
Mammals	Townsend's big-eared bat	CR, KM, FH, C, EC, SN, CV	Declining	Declining	Declining
Mammals	Yuma myotis	CR, KM, FH, C, EC, SN, CV	Declining	Declining	Declining
Birds	Bald eagle	CR, KM, FH, C, EC, SN, CV	Federally delisted, increasing	Stable	Stable
Birds	Bank swallow	CR, KM, FH, C, EC, SN, CV	Unknown	Unknown	Unknown
Birds	Black brant	CR	Stable	Stable	Stable
Birds	Brown pelican	CR	Federally delisted, stable	Stable	Stable

D. Affected Environment and Environmental Consequences (Wildlife)

Category	Common Name	Ecoregions	Population Trend	Habitat Trend	Forecast
Birds	Burrowing owl	CR, KM, FH, C, EC, SN, CV	Unknown	Declining	Declining
Birds	California spotted owl	C, EC, SN	Declining	Declining	Declining
Birds	Golden eagle	CR, KM, FH, C, EC, SN, CV	Unknown	Stable	Unknown
Birds	Greater sandhill crane	CR, KM, FH, C, EC, SN, CV	Stable	Stable	Stable
Birds	Marbled murrelet	CR	Stable To Declining	Declining	Declining
Birds	Northern goshawk	CR, KM, FH, C, EC, SN, CV	Unknown	Unknown	Unknown
Birds	Northern spotted owl	CR, KM	Declining	Unknown - Declining	Declining
Birds	Swainson's hawk	CR, KM, FH, C, EC, SN, CV	Unknown	Unknown	Unknown
Birds	Tricolored blackbird	CV	Declining	Unknown	Declining
Birds	Western snowy plover	CR	Increasing in planning area	Stable	Stable
Birds	White-tailed kite	CR, KM, FH, C, EC, SN, CV	Unknown	Unknown	Unknown
Birds	Willow flycatcher	CR, KM, FH, C, EC, SN, CV	Unknown	Unknown	Unknown
Birds	Yellow-billed cuckoo	CV, FH	Unknown	Unknown	Unknown
Reptiles	Mountain king snake	CR, KM, FH, C, EC, SN, CV	Unknown	Unknown	Unknown
Reptiles	Northwestern pond turtle	None	Unknown	Unknown	Unknown
Amphibians	California red-legged frog	CR, FH, EC	Unknown	Unknown	Unknown
Amphibians	Foothill yellow-legged frog	CR, KM, FH, C, EC, SN	Stable	Stable	Unknown
Amphibians	Shasta salamander	KM	Unknown	Unknown	Unknown
Amphibians	Western spadefoot	CV, FH	Unknown	Unknown	Unknown
Invertebrates	Hooded lancetooth	KM	Unknown	Unknown	Unknown
Invertebrates	Oregon shoulderband	KM,	Unknown	Unknown	Unknown
Invertebrates	Siskiyou shoulderband	KM	Unknown	Unknown	Unknown
Invertebrates	Tehama chaparral	KM, FH	Unknown	Unknown	Unknown
Invertebrates	Trinity bristlesnail	KM	Unknown	Unknown	Unknown
Invertebrates	Trinity shoulderband	KM	Unknown	Unknown	Unknown
Invertebrates	Valley elderberry longhorn beetle	CV, FH	Unknown	Unknown	Unknown
Invertebrates	Shasta sideband	CR, KM, FH, C, EC, SN, CV	Unknown	Unknown	Unknown
Invertebrates	Wintu sideband	CR, KM, FH, C, EC, SN, CV	Unknown	Unknown	Unknown
Invertebrates	Shasta chaparral	CR, KM, FH, C, EC, SN, CV	Unknown	Unknown	Unknown

Category	Common Name	Ecoregions	Population Trend	Habitat Trend	Forecast
Invertebrates	Shasta hesperian	CR, KM, FH, C, EC, SN, CV	Unknown	Unknown	Unknown
Invertebrates	Vernal pool fairy shrimp	CV, FH	Stable	Stable on BLM-administered land	Stable on BLM-administered land
Invertebrates	Vernal pool tadpole shrimp	CV, FH	Stable	Stable on BLM-administered land	Stable on BLM-administered land

Source: BLM 2016a, 2021a

CR=Coast Range, C=Cascades, KM= Klamath Mountains, FH=Foothills, SN=Sierra Nevada Mountains, CV=Central Valley, EC=Eastern Cascades

Invasive, Nonnative Species

Terrestrial nonnative or introduced species, such as feral cats (*Felis catus*) and feral swine (*Sus scrofa*), and nonnative and invasive plants and aquatic species inhabit the planning area. These species can compete for resources, degrade vegetation communities, transfer diseases, or directly prey on native wildlife species; however, wildlife habitat degradation due to invasive weeds remains the greater threat to native wildlife. While common ravens (*Corvus corax*) and American crows (*Corvus brachyrhynchos*) are native to California, substantial population increases over the past few decades have led to predation by these species becoming a threat to several threatened and endangered species, including snowy plovers (Liebezeit and George 2002).

Forecast

The trend of terrestrial wildlife generally corresponds to trends of the vegetation communities that they are associated with (**Table D-25**). Climate change is likely to result in a less productive landscape and associated habitats. In general, less productive habitats will likely support less wildlife. The coverage of large conifer forests will likely decrease as the climate dries, particularly for the redwood and Douglas-fir areas. The EPA also predicts the range of some coniferous species will move northward and upslope (EPA 2016).

Species requiring cool wet areas are at the most risk, as those areas are likely to shrink; however, there are likely some species that will benefit from changing vegetation composition. Species using grasslands, brush, and oak woodlands may increase with the increases in those habitats. Habitat generalists such as black bears and black-tailed deer are able to exploit resources in multiple habitat types and are more adaptable to climate change than species requiring a narrow set of habitat characteristics.

Warmer and drier conditions due to climate change also influence wildlife habitat by increasing the frequency and severity of wildfires (CARB 2020). Wildlife habitat loss and alterations due to fire can be expected to continue in the future. Wildfire will likely continue to cause a loss of habitat features, such as mature and old-growth trees, abundant logs, and standing snags, used by species such as NSO, fishers, and marbled murrelet, particularly in habitat that is more severely burned.

Fuel treatments and restoration projects for burned areas, such as replanting, may help to improve habitat resilience to such disturbances as climate change and wildfire. However, restoration will need to incorporate the best available science on tools and methods, as guidelines may change with changing

climate conditions. An example of guidelines that may change is selecting which species to use for revegetation.

Environmental Consequences

Impacts Common to All Alternatives

Management actions under specific alternatives would influence wildlife and wildlife habitat by allowing or prohibiting different levels of land-use activities and by moving overall ecological conditions toward the desired state at different rates. Specific areas open to treatments, land uses, and activities would vary between alternatives; even so, actions under all alternatives would have common impacts on general wildlife and special status wildlife species. The actions with the greatest potential to influence wildlife and their habitat are associated with the following themes: wildlife management, vegetation and fire and fuels management, recreation and travel management, livestock grazing, minerals management, lands and realty, and designated areas. Impacts common to all alternatives from actions related to these themes are described below.

All alternatives include wildlife-specific management that complies with the ESA (16 U.S.C. §§1531-1544), species-specific recovery plans, and BLM sensitive species policies (USDI BLM Manual Section 6840) which all include guidance on how to limit impacts to and maintain or improve habitat for special status species. The Biological Assessment (BLM under development) includes additional analysis of the effects of the proposed RMP on federally listed species. Recovery plans for federally listed species can be found at <https://ecos.fws.gov/ecp/report/species-with-recovery-plans>.

All alternatives would include direction to enhance and protect wildlife habitat and avoid or mitigate impacts on wildlife, including special status species, from BLM activities. The desired conditions, goals, and objectives for all alternatives share common themes, such as identifying, protecting, and restoring key wildlife habitats and increasing wildlife habitat resiliency. Such measures would generally benefit wildlife species, though specific measures and actions would vary by alternative and are discussed under the alternative sections below. Alternatives would also implement BMPs designed to protect and reduce impacts on wildlife and special status species and their habitats (**Appendix F**).

All alternatives would incorporate natural resource management to varying degrees in upland and riparian vegetation types. Categories of treatments broadly include timber harvest, prescribed fire, manual, biological, chemical, and mechanical treatments, and riparian restoration. The alternatives do not specify the acres or miles of treatments; however, they include varying goals and objectives to move ecological conditions toward desired outcomes, which would ultimately lead to varying levels of impacts on wildlife and wildlife habitat. These are described under the environmental consequences for each alternative.

The general types of impacts from vegetation and fuels treatments on wildlife are similar across alternatives. The boundaries of mapped LSRs (78,600 acres) would remain the same under all alternatives, and these areas would be managed to protect and enhance LSR conditions and to remain resilient to disturbances. Achieving desired conditions for vegetation types would increase the resistance and resilience of vegetation to natural disturbances, such as wildfire. Disturbances such as wildfires cause reductions in habitat features used by some wildlife species. For example, old-growth wildlife species, such as NSO, avoid stand-replacement burn areas until forests recover (Smith 2000). It generally takes over 75 years for forests to reach the old-growth stage. This is characterized by heterogeneous canopy and stand structure, developed understory, large trees and snags, downed wood material, and canopy gaps (Fisher

and Wilkinson 2005). In contrast, small mammals and ungulates may increase in abundance following initial disturbance but may decrease as stands age (Fisher and Wilkinson 2005; Smith 2000).

Achieving desired conditions for vegetation types may also help to control nonnative, invasive wildlife species. This is because nonnative, invasive wildlife species tend to be habitat generalists that thrive on disturbed landscapes. Vegetation treatments that increase the quantity and quality of native species habitat can help manage invasive wildlife populations (Liebezeit and George 2002).

Removing trees and other vegetation and reducing fuels could affect special status species and other native wildlife through loss and degradation of habitat, disturbance and displacement, and potential for injury and death. All alternatives strive to maintain key ecological features, such as snags and large downed logs, and favor retention of late seral characteristics. These characteristics provide higher-quality wildlife habitat for old growth forest-dependent species, such as NSO, fisher, and marbled murrelet.

Changes in forest structure and seral stage due to treatments can modify wildlife habitat occupancy and use until desired conditions are achieved. Depending on the scale and timing of vegetation and fuels treatments, the intensity of impacts can range from minimal to moderate on wildlife species. In some cases, habitat modification would be permanent (i.e., habitat conversion) as many sites would need treatment every 5 years (e.g., shrub regrowth may take several years, and would likely be removed again just as they begin to provide habitat for nesting birds). As a result, many wildlife species that rely on vegetation types that are removed during fuels treatment (e.g., chaparral, shrublands, pinyon-juniper) would experience habitat loss, including approximately 65 percent of the bird species that nest in the Redding Field Office. All bird species that nest in chaparral areas would likely be impacted, and nesting habitat for many riparian bird species would likely be removed during fuels treatment.

Other species may benefit from habitat alterations that occur immediately after treatments, which may be the intent of the project. For example, big game would immediately benefit from treatments that create openings in large, dense timber stands. Loss or disturbance of nest trees for raptors and loss or disturbance to dens for marten could cause reduced reproduction success or direct mortality if timber harvest occurred during breeding seasons. However, limited operating periods would be applied to mitigate disturbance to nesting species. Additionally, all alternatives would include direction to protect and enhance old-growth forest characteristics and, therefore, related wildlife species, particularly the NSO. Protecting old-growth forest characteristics would ensure that old-growth habitat remains in sufficient quantity to support dependent species, even as treatments may alter some features in the vegetation community (e.g., a reduction in fuels loading may reduce understory density).

Large areas of vegetation removal would fragment surrounding habitats. Habitat fragmentation would interfere with wildlife species' movements and migration abilities and could limit gene flow. Removing woody debris for activities like firewood collection would reduce fine-scale habitats such as nesting and refuge sites. In all alternatives, it is assumed the acres of vegetation treated would be spread out across the planning area; over the life of the RMP; impacts also would be dispersed, which would limit their intensity.

Riparian restoration projects (such as in riparian management areas, see **Section D.2.4, Vegetation**) would benefit riparian-dependent wildlife species, such as migratory birds and amphibians, by improving hydrological function, water quality, and riparian vegetation. As a result, riparian areas would be better able to provide habitat characteristics for riparian species. These include clean water sources and riparian

vegetation characteristics that support nesting habitat (e.g., for yellow-billed cuckoo). For a detailed description of the effects of vegetation treatments on riparian vegetation communities and aquatic species, see **Section D.2.4**, Vegetation; **Section D.2.6**, Fish and Aquatic Species; and **Section D.2.3**, Water Resources.

Under all alternatives, herbicide and pesticide use would be consistent with programmatic guidance included in the *Final Programmatic EIS and ROD for Vegetation Treatments using Herbicides on BLM Lands in 17 Western States* (BLM 2007) and *Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (BLM 2016b) and applicable subsequent IMs (e.g., CA IM-2009-030) and/or applicable subsequent programmatic guidance. The BLM would adhere to design features in these documents, which include measures to reduce potential effects of herbicide use on wildlife.

The BLM would integrate pollinator-friendly native plant species (native plant species that provide pollen and nectar) into the restoration work taking place in post-fire rehabilitation and stabilization seedings, fuels treatments, or other projects that use seeding or seedlings. Immediate measures to support pollinators may include planting pollinator-friendly vegetation and increasing flower diversity in plantings, limiting mowing practices, and avoiding the use of pesticides in sensitive pollinator habitats through integrated vegetation and pest management practices (BLM 2021a). This would support pollinator species by increasing necessary habitat features such as native species used as host plants and nectar sources.

Each alternative would allow for some measure of recreation, with different management areas to support different recreation opportunities. Developed and dispersed recreation, as well as administrative functions to maintain motorized access and recreation opportunities, may result in effects on wildlife and special status species. The types of effects that are common across alternatives are described below. The magnitude of effects would generally correspond to the area of wildlife and species habitat within different recreation management areas and/or open to OHV use, as shown in **Table D-30** and **Table D-31**. These would vary by alternative and are described by alternative below.

Table D-30
Wildlife Habitats within Recreation Management Areas (acres)

Habitat Type	Total Habitat	Alternative A	Alternative B	Alternative C	Alternative D
Critical Habitat					
ERMA					
Marbled murrelet	45,800	0	4,000	4,000	4,000
Northern spotted owl	70,400	0	7,800	7,800	7,800
Western snowy plover	600	0	0	400	0
SRMA					
Marbled murrelet	45,800	0	0	0	0
Northern spotted owl	70,400	0	0	0	0
Western snowy plover	600	0	0	0	0
Big Game Habitat					
ERMA					
Black bear	328,800	0	19,300	26,100	25,000
Elk	264,100	0	10,200	40,000	39,800
Mule deer	382,000	0	21,800	46,500	45,400

Habitat Type	Total Habitat	Alternative A	Alternative B	Alternative C	Alternative D
Pronghorn	3,700	0	0	0	0
SRMA					
Black bear	328,800	40,200	23,800	39,800	39,800
Elk	264,100	33,100	23,200	31,600	31,600
Mule deer	382,000	40,200	23,800	42,300	42,300
Pronghorn	3,700	0	0	0	0

Source: BLM GIS 2023

Table D-31
Wildlife Habitats Open/Closed to OHVs (acres)

Habitat Type	Total Habitat	Alternative A	Alternative B	Alternative C	Alternative D
Critical Habitat					
OHV Closed					
Marbled murrelet	45,800	22,200	26,300	22,200	23,900
Northern spotted owl	70,400	1,600	9,700	1,600	3,700
Western snowy plover	600	0	0	0	0
OHV Limited					
Marbled murrelet	45,800	22,200	18,100	22,200	20,500
Northern spotted owl	70,400	68,700	60,600	68,700	66,600
Western snowy plover	600	400	400	400	400
Big Game Habitat					
OHV Closed					
Black bear	328,800	58,400	73,000	58,600	61,000
Elk	264,100	28,900	37,200	28,800	31,200
Mule deer	382,000	59,200	73,400	58,800	61,300
Pronghorn	3,700	0	0	0	0
OHV Limited					
Black bear	328,800	270,200	255,600	270,000	267,700
Elk	264,100	235,100	226,800	235,100	232,800
Mule deer	382,000	322,600	308,300	323,000	320,400
Pronghorn	3,700	3,700	3,700	3,700	3,700
OHV Open					
Black bear	328,800	200	200	200	200
Elk	264,100	100	100	100	100
Mule deer	382,000	200	200	200	200
Pronghorn	3,700	0	0	0	0

Source: BLM GIS 2023

There are differences in the amount and management of recreation by alternative, but the type of impacts from recreation on wildlife are similar for all alternatives. Hikers, campers, mountain bikers, OHV users, and horseback riders can disturb and displace wildlife (Leung and Marion 2000, Haylick 2002, English et al. 2014). Noise and human presence can cause behavioral changes, sound masking, startling and flight responses, and displacement or habitat avoidance (Slabbekoorn and Ripmeester 2008; Barber et al. 2009; Blickley and Patricelli 2010). These effects are more pronounced during sensitive times, such as breeding, hibernating, and raising young. Recreation use tends to be highest during spring and summer, which

correspond with wildlife breeding and raising young. Human disturbance, including that from various kinds of recreation, such as rock climbing, caving, road and trail use, and OHV use, is a known threat for several bat species, bald eagles, peregrine falcons, martens, NSOs, marbled murrelets, snowy plovers, and other wildlife species.

Building or maintaining new motorized and nonmotorized trails and developed recreation facilities, such as campgrounds associated with ERMA and SRMA, would degrade wildlife habitat in these areas by removing vegetation cover and facilitating the spread of nonnative plants. These effects could lead to the loss or modification of species' habitat or key habitat features (Leung and Marion 2000; Miller et al. 2020). However, by designating RMAs, effects would be concentrated to discrete areas, which would reduce effects to wildlife and habitats outside these areas.

Development and use of roads, trails, and recreational facilities may also cause habitat fragmentation for wildlife species such as big game. Habitat fragmentation may reduce habitat functionality by potentially impeding an individual's ability to make necessary daily, seasonal, or dispersal movements. Roads and trails near streams and stream crossings can also contribute to bank destabilization and alter hydrologic connectivity by causing road surface runoff and increased overland flow velocity (Kastridis 2020). This could lead to an increase in erosion, sedimentation, and turbidity, which may alter the water quality of a given watershed and alter habitat for riparian-dependent species such as amphibians.

Areas such as meadows, cliffs, riparian habitat, lakes and ponds, and rocky outcrops may experience greater impacts than other habitats from increased recreation. This is because these areas tend to receive more intense or frequent use. Additionally, wildlife habitats closer to urban centers are likely to experience greater magnitude of impacts from recreation due to increased use.

Under all alternatives, managing the Samoa Dunes RMA as open to OHV travel would result in habitat degradation for dune-associated species (**Table D-25**) from vegetation trampling, erosion, and increased potential for spread of invasive, nonnative vegetation. It would also continue to cause disturbance to wildlife due to noise and human presence. The BLM would administer the Samoa Dunes as either an SRMA (Alternatives A, C, and D) or ERMA (Alternative B), but the type and intensity of effects on wildlife would be similar across all alternatives.

Similarly, managing the Mike Thompson Wildlife Area as OHV limited under all alternatives would result in continued habitat degradation and disturbance for coastal species, however, effects would be limited to existing and designated routes that have already been impacted.

Managing all designated wilderness areas and Section 603 WSAs as closed to OHV travel would preclude habitat degradation effects from OHV use, as described above. However, nonmotorized uses, including hiking and camping, would likely still result in some disturbance and habitat degradation for wildlife in the area.

Under all alternatives, ROW exclusion areas would continue preventing wildlife impacts in certain areas by prohibiting ROW development. ROW avoidance areas would reduce the likelihood of impacts because, although the ROW would be developed, it would be sited away from sensitive resources such as sensitive wildlife habitats. The acres of wildlife habitats within ROW avoidance and exclusion areas would vary by alternative, as shown in **Table D-32** and **Table D-12**.

Table D-32
Wildlife Habitats Open/Closed to ROWs (acres)

Habitat Type	Total Habitat	Alternative A	Alternative B	Alternative C	Alternative D
ROW Exclusion					
Marbled murrelet	45,800	22,200	28,500	25,500	25,600
Northern spotted owl	70,400	1,600	22,900	10,300	10,500
Western snowy plover	600	0	400	0	0
Black bear	328,800	58,300	112,300	72,300	86,200
Elk	264,100	28,600	82,700	49,600	63,400
Mule deer	382,000	58,500	134,900	94,100	107,900
Pronghorn	3,700	0	0	0	0
ROW Avoidance					
Marbled murrelet	45,800	100	15,900	18,900	18,800
Northern spotted owl	70,400	100	47,400	60,000	59,800
Western snowy plover	600	0	0	400	400
Black bear	328,800	11,300	124,700	156,500	153,500
Elk	264,100	8,300	102,400	124,000	120,700
Mule deer	382,000	11,300	135,800	166,300	165,100
Pronghorn	3,700	0	2,000	2,000	2,000
Open					
Marbled murrelet	45,800	22,100	0	0	0
Northern spotted owl	70,400	68,500	0	0	0
Western snowy plover	600	400	0	0	0
Black bear	328,800	258,800	91,400	99,700	88,800
Elk	264,100	226,800	78,600	90,100	79,600
Mule deer	382,000	311,800	110,900	121,100	108,600
Pronghorn	3,700	3,700	1,700	1,700	1,700

Source: BLM GIS 2023

Where road and ROW construction occur, they could cause soil compaction and vegetation loss and reduce habitat quality. ROWs are often linear and may stretch for miles. Direct impacts could include an increased likelihood for injury or mortality; interference with acoustic signals, which could reduce the ability to hear and avoid predators, potentially leading to injury or mortality; and noise or visual disturbance that could lead to habitat avoidance. Habitat avoidance could prevent wildlife from successfully foraging, finding cover from predators, or reproducing. This could result in individuals being more susceptible to starvation or malnutrition, predation, or population declines.

Indirect effects could include habitat fragmentation or degradation, which could cause changes in wildlife movement patterns and prevent individuals from successfully foraging, finding cover from predators, or reproducing. Indirect effects might also include noxious weed and invasive, nonnative plant spread, which could lead to a reduction in native vegetation and fewer preferred native plants used for food and cover that native vegetation provides (Ouren et al. 2007; Parris and Schneider 2009). ROWs could increase predation by providing perches and nesting opportunities for predatory birds (DeGregorio et al. 2014). Impacts would be more likely to occur on smaller, less-mobile species that would be unable to flee the area quickly. Impacts would change over time. In the short term, construction activities would cause noise, surface disturbance, and human presence. Over the long term, the continued potential would remain for

collisions with vehicles or infrastructure, as well as road avoidance by wildlife and habitat fragmentation. Additionally, dirt roads increase the level of fugitive dust, which could result in impacts on pollinators.

Impacts on wildlife and habitat from grazing would generally correspond to the acres available to grazing, with an increase in acreage available for grazing correlating with potential increases in impacts on wildlife species. The acres available for livestock grazing would vary by alternative, as shown in **Table D-33**. Differences in livestock management would lead to differences in the magnitude of impacts, as described by alternative below. Impacts would also depend on the current year's conditions, habitat type relative to grazing season, grazing management across years (rest-rotation, deferred), stocking rate, and length of livestock grazing. Although the acres of wildlife habitat available for grazing would vary by alternative, the types or impacts would be the same and are described below. While the acres available to grazing varies by alternative, the BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

Table D-33
Wildlife Habitats Available/Unavailable for Livestock Grazing (acres)

Habitat Type	Total Habitat	Alternative A	Alternative B	Alternative C	Alternative D
Critical Habitat					
Unavailable					
Marbled murrelet	45,800	29,300	27,800	24,800	27,800
Northern spotted owl	70,400	40,200	34,600	16,700	42,300
Western snowy plover	600	400	400	400	400
Available					
Marbled murrelet	45,800	15,100	16,600	19,600	16,600
Northern spotted owl	70,400	30,100	35,700	53,600	28,000
Western snowy plover	600	0	0	0	0
Big Game Habitat					
Unavailable					
Black bear	328,800	191,100	143,700	109,300	187,700
Elk	264,100	151,000	103,900	81,600	140,000
Mule deer	382,000	195,300	149,400	110,600	193,600
Pronghorn	3,700	0	0	0	0
Available					
Black bear	328,800	137,700	185,100	219,500	141,100
Elk	264,100	113,100	160,200	182,500	124,100
Mule deer	382,000	186,700	232,600	271,400	188,400
Pronghorn	3,700	3,700	3,700	3,700	3,700

Source: BLM GIS 2023

Under all alternatives, the BLM's management of livestock grazing would ensure that leases comply with the *Rangeland Health Standards and Guidelines for California and Northwestern Nevada Final EIS* (April 1998), which includes Proposed Grazing Management Practices for Water Quality in California. This would reduce the level of effects to wildlife and habitat because standards for rangeland health and water quality, and, therefore, wildlife habitat conditions, would be maintained.

Livestock grazing would alter the quality of wildlife habitat by causing changes in the vegetation structure and cover. Effects include loss of vegetation cover, which may increase susceptibility to predation; the loss of forage and prey base, which may lead to starvation, malnutrition, or habitat displacement; and habitat degradation through the introduction of noxious weeds and invasive, nonnative plants, which may lead to a reduction in native vegetation (Gross 2013). This would reduce preferred native plants used for food and the cover that native vegetation provides. There is also the potential for increased competition with some wildlife species for forage, and potentially reduced cover and nesting habitat for other species. Further, wildlife may be displaced from their habitats, which could increase competition for resources in adjacent habitats, affecting survival or reproductive success for some individuals. Species adapted to open habitats may experience increased habitat availability from grazing that reduces vegetation cover, whereas species that require denser cover may see a decrease in habitat (Schieltz and Rubenstein 2016; Dettenmaier et al. 2017).

Wildlife species associated with riparian habitat types could be affected the most by livestock overgrazing because livestock disproportionately use these areas for forage, water, and shade. Excessive grazing can alter streambank stability, channel structure, and riparian composition, leading to reduced stream functionality, water quality, and habitat function (Belsky et al. 1999; Forest Service 2015). Additionally, grazing can cause injury or mortality of some aquatic-dependent species, such as amphibians, due to trampling individuals and eggs. Migratory birds would also experience habitat loss or degradation from livestock overgrazing in riparian areas, which many migrating birds use as stopovers on their migration routes. Reduced vegetation and its diversity, altered vegetation, and reduced habitat connectivity would limit the availability of nesting areas, forage, and cover for many bird species.

Livestock overgrazing can affect upland habitat if it reduces herbaceous plant cover and density, decreases plant litter, and alters the plant species composition and structure of riparian habitats. These changes would reduce forage or prey availability, cover, and breeding habitat for some species. Areas surrounded by livestock watering facilities would be devoid of vegetation and would not provide habitat for wildlife, while forage around livestock watering facilities would be reduced. Also of concern is direct competition between native ungulates and cattle for browse and forbs, particularly during droughts (Ockenfels et al. 1991). Deer may avoid sites with high cattle utilization (Collins and Urness 1983), and reproductive success may be lower in areas with high cattle stocking rates (Smith 1984).

Due to the lack of or minimal resource potential, fluid, coal, and mineral development is expected to be low within the planning area on BLM-administered lands or mineral estate in the next 20 years (see **Appendix C**, Reasonably Foreseeable Future Actions). Similarly, renewable energy development is not reasonably foreseeable. Therefore, impacts on wildlife from mineral and energy development are expected to be minimal under all alternatives (acreage differences are presented in **Table D-34**). Existing oil and gas fields in the planning area would remain under all alternatives. Though activities are expected to be minimal, they could impact wildlife, as described below.

Table D-34
Wildlife Habitats Open/Closed to Minerals Leasing (acres)

Habitat Type	Total Habitat	Alternative A	Alternative B	Alternative C	Alternative D
Critical Habitat					
Closed to Leasing					
Marbled murrelet	45,800	22,200	32,300	25,800	28,300
Northern spotted owl	70,400	1,600	42,900	19,700	40,200
Pacific marten, coastal DPS	6,100	0	0	0	0
Western snowy plover	600	0	400	0	400
Open to Leasing Subject to No Surface Occupancy					
Marbled murrelet	45,800	0	2,100	3,000	4,800
Northern spotted owl	70,400	0	4,000	8,300	9,300
Pacific marten, coastal DPS	6,100	0	0	0	300
Western snowy plover	600	0	0	400	0
Open to Leasing with Standard Lease Terms					
Marbled murrelet	45,800	23,500	11,400	17,000	12,700
Northern spotted owl	70,400	68,800	23,500	42,300	20,800
Pacific marten, coastal DPS	6,100	6,100	6,100	6,100	5,800
Western snowy plover	600	600	300	300	300
Big Game Habitat					
Closed to Leasing					
Black bear	509,000	61,600	151,000	93,800	140,200
Elk	448,800	29,600	107,600	70,100	104,300
Mule deer	676,500	61,800	178,800	114,900	166,800
Pronghorn	8,700	0	0	0	0
Open to Leasing Subject to No Surface Occupancy					
Black bear	509,000	100	45,500	54,400	88,400
Elk	448,800	15,800	40,800	41,700	71,900
Mule deer	676,500	19,600	45,500	57,400	102,600
Pronghorn	8,700	0	0	0	500
Open to Leasing with Standard Lease Terms					
Black bear	509,000	447,300	312,500	360,900	280,400
Elk	448,800	403,400	300,300	337,000	272,600
Mule deer	676,500	595,100	452,200	504,100	407,100
Pronghorn	8,700	8,700	8,700	8,700	8,200

Source: BLM GIS 2023

The types of impacts from fluid, coal, and mineral exploration and development activities, such as road construction and use, facility construction, well pad and pipeline construction, and excavation, include surface disturbance and could degrade, remove, or fragment wildlife habitat. Noise and human presence increase the potential for displacement of individuals to nearby habitats, causing increased competition for resources in those areas. Vehicles on site during construction and operation may cause injury to or mortality of individual wildlife species, causing localized population declines. Impacts would be greater in the short-term during construction due to the higher level of noise, surface disturbance, and human presence during this time. Impacts would also be greater during sensitive breeding or wintering periods.

However, over the long term, impacts would continue at a lower level during operation. This would be due to noise and human presence.

Under all alternatives, the same number of acres of wildlife habitat would be withdrawn from locatable mineral entry on both BLM-administered surface lands and subsurface mineral estate (split estate) (**Table D-35** and **Table D-19**). Habitat in these areas would be protected from impacts associated with development activities, such as disturbance and habitat degradation. The same acreage of wildlife habitat would be open to locatable entry; wildlife in these areas would be at risk of impacts, such as disturbance, potential for injury or mortality, and habitat degradation, as described above. The acres of wildlife habitat recommended for withdrawal from locatable mineral entry would vary by alternative and are discussed in the alternatives section below (**Table D-35**).

Table D-35
Wildlife Habitats Open/withdrawn/recommended for withdrawal to Locatable Minerals
(acres)

Habitat Type	Total Habitat	Alternative A	Alternative B	Alternative C	Alternative D
Critical Habitat					
Existing withdrawal					
Marbled murrelet	45,800	22,200	22,200	22,200	22,200
Northern spotted owl	70,400	300	300	300	300
Pacific marten, coastal DPS	6,100	0	0	0	0
Western snowy plover	600	0	0	0	0
Open for development					
Marbled murrelet	45,800	23,600	23,600	23,600	23,600
Northern spotted owl	70,400	70,100	70,100	70,100	70,100
Pacific marten, coastal DPS	6,100	6,100	6,100	6,100	6,100
Western snowy plover	600	400	400	400	400
Recommended withdrawal					
Marbled murrelet	45,800	0	11,900	10,400	9,100
Northern spotted owl	70,400	0	35,400	25,500	32,800
Pacific marten, coastal DPS	6,100	0	0	0	0
Western snowy plover	600	0	400	400	400
Big Game Habitat					
Existing withdrawal					
Black bear	509,000	59,700	59,700	59,700	59,700
Elk	448,800	29,500	29,500	29,500	29,500
Mule deer	676,500	60,500	60,500	60,500	60,500
Pronghorn	8,700	0	0	0	0
Open for development					
Black bear	509,000	449,300	449,300	449,300	449,300
Elk	448,800	419,300	419,300	419,300	419,300
Mule deer	676,500	616,100	616,100	616,100	616,100
Pronghorn	8,700	8,700	8,700	8,700	8,700

Habitat Type	Total Habitat	Alternative A	Alternative B	Alternative C	Alternative D
Recommended withdrawal					
Black bear	509,000	0	94,900	53,300	53,300
Elk	448,800	0	72,700	30,900	30,900
Mule deer	676,500	0	105,800	57,200	57,200
Pronghorn	8,700	0	0	0	0

Source: BLM GIS 2023

Table D-36
Wildlife Habitats Open/Closed to Mineral Materials (acres)

Habitat Type	Total Habitat	Alternative A	Alternative B	Alternative C	Alternative D
Critical Habitat					
Closed					
Marbled murrelet	45,800	22,200	34,100	28,700	30,200
Northern spotted owl	70,400	1,600	46,600	27,900	43,900
Pacific marten, coastal DPS	6,100	0	0	0	0
Western snowy plover	600	0	400	400	400
Open					
Marbled murrelet	45,800	23,600	11,600	17,000	15,600
Northern spotted owl	70,400	68,800	23,800	42,400	26,400
Pacific marten, coastal DPS	6,100	6,100	6,100	6,100	6,100
Western snowy plover	600	600	300	300	300
Big Game Habitat					
Closed					
Black bear	509,000	62,700	181,700	145,200	188,000
Elk	448,800	45,400	138,200	109,100	139,400
Mule deer	676,500	82,400	207,800	169,400	215,100
Pronghorn	8,700	0	0	0	0
Open					
Black bear	509,000	446,300	327,300	363,800	321,000
Elk	448,800	403,300	310,500	339,700	309,400
Mule deer	676,500	594,200	468,700	507,100	461,500
Pronghorn	8,700	8,700	8,700	8,700	8,700

Source: BLM GIS 2023

The BLM would manage ACECs under all alternatives, however, the number and acres of ACECs would vary across alternatives. As a result, the acres of wildlife habitat types contained within designated areas would also vary, as shown in **Table D-37**, Wildlife Habitats in ACECs by Alternative; **Table D-16**, Vegetation Cover Types in ACECs by Alternative; and **Table D-22**, Riparian Management Areas in ACECs by Alternative.

Table D-37
Wildlife Habitats within Special Designations (acres)

Habitat Type	Total Habitat	Alternative A	Alternative B	Alternative C	Alternative D
Critical Habitat					
ACEC					
Marbled murrelet	45,800	23,500	5,500	2,600	5,500
Northern spotted owl	70,400	12,700	35,300	15,100	35,300
Western snowy plover	600	0	400	0	400
Wilderness Area					
Marbled murrelet	45,800	22,200	22,200	22,200	22,200
Northern spotted owl	70,400	200	200	200	200
Western snowy plover	600	0	0		
WSA					
Marbled murrelet	45,800	0	2,300	0	0
Northern spotted owl	70,400	1,500	7,400	1,500	1,500
Western snowy plover	600	0	0	0	0
Big Game Habitat					
ACEC					
Black bear	328,800	34,800	64,500	23,300	63,500
Elk	264,100	42,400	57,000	29,500	57,000
Mule deer	382,000	54,600	88,600	42,400	87,700
Pronghorn	3,700	0	0	0	0
Wilderness Area					
Black bear	328,800	49,800	49,800	49,800	49,800
Elk	264,100	24,300	24,300	24,300	24,300
Mule deer	382,000	50,000	50,000	50,000	50,000
Pronghorn	3,700	0	0	0	0
WSA					
Black bear	328,800	8,500	20,600	8,500	9,000
Elk	264,100	4,300	10,600	4,300	4,800
Mule deer	382,000	8,500	20,600	8,500	9,000
Pronghorn	3,700	0	0	0	0

Source: BLM GIS 2023

In general, managing for relevant and important values of the ACECs would help maintain or improve the condition and function of wildlife habitats, particularly when the relevant and important values specifically relate to wildlife species or habitat types, such as late successional forests, coastal dunes, vernal pools, or riparian areas. Managing for ACECs would also reduce disturbance-type impacts on wildlife and their habitats. This would be due to reduced surface-disturbing activities, access, and recreation in these areas. In areas where ACECs overlap known bat hibernacula, bat species such as fringed myotis or long-eared myotis would benefit from reduced levels of recreation in caves, which could otherwise cause disturbance and potential for disease spread. The effects of management for designated areas on wildlife would generally correspond to the acres of general wildlife habitat (as indicated by vegetation types), riparian habitat types, and special status species habitat types that are within designated areas, as shown in **Table D-37**, Wildlife Habitats within Special Designations (acres); **Table D-16**, Vegetation Cover Types in ACECs by Alternative; and **Table D-22**, Riparian Management Areas in ACECs by Alternative.

Under all alternatives, the Arcata FO would continue to manage ACECs for the protection of late-successional Douglas-fir stands in the Lacks Creek Management Area, Larabee Valley, Gilham Butte, and Laqua Buttes. The Redding FO would continue to manage an ACEC for the protection of Baker cypress (*Hesperocyparis bakeri*). Wildlife species dependent on those types of habitats (**Table D-25**) benefit from the ACEC designation.

All alternatives would manage for the Sacramento River Bend ACEC, which includes the Paynes Creek Wetland Complex, consisting of 93 acres of managed wetlands and several natural and human-made vernal pools. This area provides habitat for waterfowl, shorebirds, wading birds, beaver, river otter, amphibians, reptiles, and aquatic invertebrates. Continuing to manage for this ACEC would help maintain wildlife habitat in the area by precluding increased use levels that could cause disturbance and habitat degradation.

In addition to managing for ACECs, all alternatives would manage other designated areas, including RNAs, WSRs, Section 603 WSAs, and designated wilderness areas. Impacts on wildlife for managing other designated areas would be similar as for managing ACECs, including reduced disturbance and habitat alterations resulting from lower use levels. However, ecosystem resilience could decline in designated areas over time due to the lack of habitat restoration and enhancement management (for example, a lack of mechanical vegetation management to minimize the possibility of beetle epidemics and large-scale, uncharacteristic wildfire).

All alternatives would manage three designated WSR segments (52 miles) and varying segments as eligible or suitable for inclusion in the NWSRS. The miles of wildlife habitat types contained within WSR corridors would vary, as shown in **Table D-38**, Wildlife Habitats in WSRs by Alternative. Management guidelines for designated, eligible, and suitable river segments would help protect river and stream habitats by preventing degradation of shorelines, the water quality, and the free-flowing nature of the eligible stream segments. Maintaining their eligibility for designation could have beneficial impacts by providing habitat connectivity for riparian-dependent wildlife species. WSR management could also improve conditions for aquatic reptiles and amphibians.

Table D-38
Wildlife Habitats within WSRs by Alternative (miles)

Habitat Type	Alternative A	Alternative B	Alternative C	Alternative D
Designated WSR				
Marbled murrelet critical habitat	10	10	10	10
Northern spotted owl critical habitat	0	0	0	0
Western snowy plover critical habitat	0	0	0	0
Black bear	50	50	50	50
Elk	30	30	30	30
Mule deer	50	50	50	50
Pronghorn	0	0	0	0
Eligible (Alternative A) or Suitable (Alternatives B-D) WSR				
Marbled murrelet critical habitat	40	40	0	0
Northern spotted owl critical habitat	40	40	10	10
Western snowy plover critical habitat	0	0	0	0
Black bear	130	130	10	80
Elk	120	120	10	90
Mule deer	180	180	10	130
Pronghorn	0	0	0	0

Source: BLM GIS 2023

Alternative A

Alternative A would continue current management direction and prevailing conditions derived from existing planning decisions. In the previous RMPs (1992 Arcata RMP and 1993 Redding RMP), the focus of wildlife management was to avoid jeopardizing the existence of any federally listed, state listed, or proposed species; to actively promote species recovery; and to improve the status of candidate and sensitive species. This would continue to benefit special status species, as described under *Impacts Common to All Alternatives*, and other wildlife species that use similar habitat types would also likely benefit from protections. Because current wildlife management does not focus on widespread protection and/or enhancement of all wildlife habitats and vegetation types, not all wildlife species may experience the same protection.

As described under Effects from Vegetation Management, below, vegetation and forest management, and, therefore, wildlife habitats, would be managed as Management Areas rather than by vegetation cover class. As a result, desired conditions for wildlife habitat could take longer to be realized, potentially resulting in more homogenous conditions that may support a lower diversity of wildlife species relative to the natural range of variation. Habitats could be less resilient to disturbances and stressors such as climate effects, uncharacteristic wildfire (increased intensity and frequency), and disease and insect outbreaks.

Because the BLM would not modify existing criteria or establish additional criteria to guide the identification of site-specific use levels for implementation activities, impacts on wildlife from land use activities may not be mitigated to the full potential.

Alternative A does not include specific management for cave and karst resources. As a result, habitat for bats would not be protected and bat species could be at risk of disturbance, habitat degradation, and spread of WNS. Likewise, lack of specific management for pollinator species may lead to habitat loss or degradation for pollinator species, such as monarch butterflies. Because management for essential connectivity corridors would not be specified, the BLM could miss opportunities to pursue land allocations and/or water rights to benefit wildlife habitat, including big game and riparian habitat.

Under Alternative A, the BLM would continue vegetation and forest management under the direction contained in the existing RMPs for each management area. Vegetation treatments would continue to be carried out, including prescribed fire, mechanical thinning, biological or chemical treatments, invasive, nonnative plant removal, and restoration of high-value areas. Alternative A would not manage vegetation resources by vegetation cover type. Because desired conditions for vegetation communities would not be defined or managed for, and the available vegetation treatment methods would be limited, movement toward desired conditions would be slow. As a result, wildlife habitats may not be maintained, restored, or enhanced in a timely manner. Where treatments were carried out, effects on wildlife would be as described under *Impacts Common to All Alternatives*.

Under Alternative A, 113,500 acres of wildlife habitat would be open within RMAs (**Table D-30**), and 923,400 acres would be open to OHV use (with restrictions) (**Table D-31**). Wildlife and habitat in these areas would experience impacts as described under *Impacts Common to All Alternatives*.

Under Alternative A, the Mike Thompson Wildlife Area and South Spit Humboldt Bay would not be managed as an ERMA. As a result, coastal species, such as snowy plovers, would continue to be protected from impacts described under *Impacts Common to All Alternatives*, such as disturbance and habitat alterations

from recreational activities. Recreational use would be allowed but not concentrated in this area. This would help support successful reproduction at snowy plover nesting sites and recovery of sensitive coastal species.

Managing the Deer Creek, Hawes Corner, and Sacramento Island ACECs as closed to OHV travel would also continue to protect wildlife in these areas from disturbance and habitat alterations, as described under *Effects Common to All Alternatives*. This would benefit numerous species associated with these areas, including waterfowl, migratory birds, and amphibians.

The acres of wildlife habitat that would be managed as ROW open, avoidance, and exclusion areas under Alternative A are shown in **Table D-32**. Impacts on wildlife from ROW management would be as described under *Impacts Common to All Alternatives*.

Wildlife and habitat in areas available for grazing would experience impacts as described under *Impacts Common to All Alternatives* (see **Table D-33**). Alternative A includes the most acres unavailable to grazing of all the alternatives and the fewest acres available for grazing, and, therefore, the extent of impacts on wildlife from grazing would be lowest. While 186,900 acres would be available for livestock grazing under Alternative A, only 62,600 acres would continue to be managed as grazing allotments under Alternative A. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP, so impacts on wildlife habitat would be limited to those areas where grazing allotments are active. Wildlife in areas unavailable for grazing may benefit from reduced potential for habitat alterations, and, in the case of big game, reduced competition for forage. Additionally, wildlife species associated with riparian habitats that are unavailable for grazing would benefit due to improved water quality, increased bank stability, and increased riparian vegetation.

The acres of wildlife habitat open and closed to leasable, locatable, and mineral materials development are shown in **Table D-34**, **Table D-35**, and **Table D-36**. Effects to wildlife from areas open/closed to mineral entry would occur as described under *Effects Common to All Alternatives*. Under Alternative A, there are no additional locations within the decision area that would be withdrawn from locatable mineral entry. Therefore, wildlife does not benefit from protections associated with closing areas to mineral entry (namely, decreased potential for disturbance and habitat modifications).

Under Alternative A, the existing special designations described in **Appendix B** would remain. These include 16 ACECs and RNAs that would continue to be managed to protect relevant and important values, three WSRs, four Section 603 WSAs, and five designated wilderness areas. The acres of wildlife habitats, including critical habitats and habitats corresponding to vegetation cover types contained within ACECs are shown in **Table D-37**, **Table D-17**, and **Table D-22**. Effects to wildlife from existing designated areas would occur as described under *Effects Common to All Alternatives*.

The Arcata FO would continue to manage ACECs for the protection of old-growth Douglas-fir stands in the Lacks Creek Management Area, Larabee Valley, Gilham Butte, and Iaqua Buttes. The Redding FO would continue to manage the Baker Cypress RNA/ACEC for the protection of Baker cypress (*Hesperocyparis bakeri*). Wildlife species dependent on those types of habitats (**Table D-25**) continue to benefit from the ACEC designation. This would be from continued protection of vegetation cover classes (e.g., old-growth forest) in the ACECs and would reduce surface disturbance.

Effects Common to all Action Alternatives

All action alternatives would set goals and objectives for wildlife, as listed in the Wildlife (including Special Status Species and Invasive, Nonnative Species) section of **Appendix B**. These goals and objectives focus on protecting and enhancing key wildlife habitat areas and corridors, including late-successional forest habitat (for NSO, fisher, and marbled murrelet), wetland habitat (waterfowl, shorebirds, herons, and egrets), forested and sagebrush steppe (big game, wolves), riparian (yellow-billed cuckoo, elderberry beetle), aquatics (salmonids), vernal pool (invertebrates), cave and karst (bats), and coastal dunes (western snowy plover). Specific management actions pertaining to the protection and recovery of these habitat types are described below.

The action alternatives would prioritize land allocations and pursue water rights to benefit wildlife habitat, including wetlands, riparian habitat, big game habitat, and essential connectivity corridors of high biological value (see Table 2-31 in AMS; BLM 2021a). There are several localities in the planning area where land acquisitions and/or transfers would consolidate ownership and provide long-term protection for wildlife and habitat in that area. Relatively minimal land acquisitions in the areas of Gilham Butte, Iaqua Buttes, Larabee Valley, and Red Mountain could create large parcels of public lands to protect habitat. Examples are Larabee Buttes and Butte Creek in Larabee Valley, adjacent plots that each total around 2,000 acres and contain the last old-growth Douglas-fir in that area; Red Mountain (South Fork Eel River Wilderness), which could be connected to the North Red Mountain parcels pending acquisition of private land; and several clustered parcels in the Iaqua Buttes, which could be connected and provided with public access with relatively small acquisitions.

The Redding FO has some tracts of checkerboard ownership that are potential wildlife corridors. The action alternatives would also implement habitat treatments to enhance, restore, and maintain habitat in essential connectivity corridors of high biological value. Such treatments combined with land acquisitions achieved under the action alternatives would benefit many wildlife species by increasing habitat connectivity, facilitating daily and seasonal migrations, and providing large blocks of undisturbed habitat. Additionally, Gilham Butte would be identified and protected as a critical wildlife corridor to ensure that usable habitat and migration pathways remain. Reduced disturbance in contiguous parcels of land could also contribute to the recovery of some threatened and endangered species. For example, the NSO is dependent on late-successional forest habitat with low levels of disturbance, and the western yellow-billed cuckoo requires large, continuous patches of riparian habitat.

The action alternatives include management actions that would increase protections for coastal dune habitats and associated species, compared with Alternative A. Management would protect and restore coastal dune habitat and increase resiliency to future sea level rise, helping to maintain the extent and condition of coastal habitat over the long term. Examples include increasing restrictions on OHV use and other surface-disturbing activities, implementing invasive, nonnative vegetation removal, and acquiring inland tracts to facilitate vegetation community retreat as sea level rises. These actions would help maintain wildlife habitat for native species and would contribute to the recovery of coastal species, particularly western snowy plovers, that nest on the coastal strip (BLM-administered lands 1000 yards from mean high tide). Establishment of flexible and responsive management actions for western snowy plovers in the coastal management zone would also aid in the recovery of this species by allowing the BLM to respond to on-the-ground conditions and control emerging threats as they are identified.

The action alternatives would implement guidance for protection of caves and mines that are used as roost sites for bats, as identified in **Appendix B**. Examples include monitoring for roosting bats, prohibiting timber within 250 feet of sites known to contain bats, implementing mitigation measures in project or activity plans to protect bat sites from destruction, vandalism, disturbance, or any other activity that could change cave or mine temperatures or drainage patterns, avoiding disturbance to known bat hibernacula to the extent practicable, implementing WNS decontamination protocol when working with bats, and limiting disturbing activities in and around cave and karst resources (see **Section D.2.13**, Cave and Karst Resources). Implementing these actions would help reduce threats to bats, such as disturbance, habitat degradation, and potential spread of disease. Overall, the action alternatives would protect bats and their habitats and promote the recovery of sensitive bat species (**Table D-28**) more than Alternative A, which does not include specific protections for bats or caves.

The action alternatives would implement specific management actions to maintain and enhance pollinator habitat, such as restoring previously farmed land or otherwise disturbed land to valley oak, elderberry, and sycamore wildlife habitat. This would have beneficial impacts on pollinators, such as the monarch butterfly and other wildlife species associated with these habitat types (**Table D-25**). This is because restored habitat would be better able to support species that rely on specific features of those habitats, such as native species for host plants and nectar sources.

The action alternatives include several other wildlife-specific management actions that would generally protect and reduce impacts on wildlife from other resource uses. For example, implementing guidelines regarding night sky resources, as described in the Visual Resources section for BLM-permitted activities, would reduce impacts to species, such as migratory birds, that can be adversely affected by light pollution. Monitoring wildlife and habitat to determine population and habitat trends would support the BLM's ability to make science-based decisions regarding resource uses. For example, migratory birds nesting surveys would be conducted prior to allowing activities, and activities would only proceed if surveys indicated no active nests in the area. Developing and implementing a management plan for the Paynes Creek Wetland Complex to manage habitat and recreation could increase the BLM's ability to manage habitat and recreation in a sustainable way that does not impact wildlife. Since this area provides habitat for numerous wildlife, including waterfowl, shorebirds, wading birds, beaver, river otter, amphibians, reptiles, and aquatic invertebrates, focusing management on this area may benefit numerous species by maintaining habitat and reducing disturbance.

The action alternatives would define and manage for desired conditions for each vegetation cover type in the decision area. These management actions would facilitate movement toward desired conditions, including increased resistance and resilience to disturbance factors in the face of climate change. Movement toward desired conditions for vegetation cover types would affect the extent and condition of wildlife habitat associated with these habitat types (**Table D-25**), including the structure and function of habitats. Effects to specific vegetation types are described in **Section D.2.4**, Vegetation. The type and intensity of effects would depend on management objectives and treatment methods, which vary with each action alternative and are described in more detail below. Where treatments are carried out, the types of effects on wildlife would be as described under *Impacts Common to All Alternatives*. All surface-disturbing BLM-permitted activities would adhere to design features and BMPs listed in **Appendix F**, which would limit or avoid impacts on wildlife and habitat, including special status species.

The action alternatives would also increase the range of available vegetation treatment methods to include more widespread use of low-intensity prescribed fire. Low and moderate wildland fire mosaics are an important ecological process to maintain and restore wildlife habitats. Due to a history of wildfire suppression, drought, widespread tree mortality, and climate change, high-intensity, stand-replacing wildfires have become one of the greatest threats for many wildlife special status species, such as NSO. Using fuels treatments to achieve desired conditions can directly affect wildlife species if it results in habitat loss or degradation, injury or death, and disturbance or displacement as described under *Impacts Common to All Alternatives*. Over the long term, promoting fire resiliency would improve wildlife habitat by reducing the risk of catastrophic wildfire, which is a threat to many wildlife species. Prioritizing treatments in and around ACECs and late-successional forest, and in cases to increase suitable NSO habitat, would make these areas more resilient to disturbances such as wildfire, insects, and disease. This would result in increased forest health, habitat availability, and habitat quality for late-successional and old growth-related species, such as NSO, fisher, marbled murrelet, and marten, particularly in areas such as Butte Creek ACEC and mapped LSRs.

The boundaries of mapped LSRs (78,600 acres) would remain the same; these areas would be managed to protect and enhance LSR conditions and to remain resilient to disturbances. This would help maintain the extent and condition of habitat for old growth-associated species, such as NSO, fish, and marten, over the long term, and reduce the risk of habitat loss or degradation to disturbances. Available treatments to maintain and protect LSR conditions would vary by alternative; as a result, the pace and scale of movement toward desired conditions may differ among the alternatives.

The action alternatives would manage forest habitats for habitat heterogeneity rather than focusing on late-successional forest and mature forest. They would provide for a variety of forest structural stages distributed both spatially and temporally, including complex early successional ecosystems. Providing heterogeneity in forest structure would increase wildlife habitat diversity and resilience and improve big game habitat (oak woodland and prairie, shrub management; oak woodlands, prairies, shrublands). Structural heterogeneity and diversity of forest habitats support aspects of habitat for multiple special status species (e.g., breeding habitat, prey species cover, forest openings). This would contribute to the maintenance and recovery of species over the long term, such as fisher and marten, which require heterogeneous habitat for cover and prey species, and high canopy cover.

When possible, the BLM would also implement woodland, shrubland, and grassland treatments to enhance critical deer range. This would increase or improve the quality of habitat for big game, particularly deer. However, all big game species would likely benefit, as they share similar habitat requirements such as open, grassy areas for foraging and woodlands to provide cover. Additionally, the BLM would implement projects to improve habitat for special status species, where feasible; this would also contribute to species recovery by improving habitat availability and quality. Maintaining component of large woody debris during forest health and fuels reduction projects would help protect wildlife habitat, even when treatments may temporarily reduce habitat features.

Carrying out management to maintain aquatic ecosystem health, including restoration of native riparian vegetation, would help maintain or improve the extent and condition of habitat for riparian-associated wildlife species, such as amphibians and waterfowl. This is because riparian vegetation provides habitat features such as cover and nesting sites; it also supports bank stabilization, water quality, and hydrological function.

Monitoring and managing for invasive, nonnative species and incorporating weed treatments would improve habitat for wildlife species by increasing the extent and quality of native vegetation cover that many wildlife species are associated with (**Table D-25**). Implementing vegetation treatments to maintain dune function and restore coastal areas would help maintain and improve wildlife habitat for coastal species, such as western snowy plover.

All action alternatives include various climate management actions to mitigate the impacts of climate change on wildlife populations and maintain or improve the condition of habitat in the face of changing climatic conditions. The action alternatives share goals and actions that generally aim to maintain or achieve landscapes that are resilient to wildfire, allow for vegetation community shifts, are hydrologically adaptive and resilient, and provide large, connected blocks of habitat for sensitive species. Achieving these desired conditions would help wildlife populations adapt to changing climate conditions. For example, providing large, contiguous areas of habitat would facilitate genetic adaptive capacity and species migration to more suitable habitats as climate changes. Increased landscape resiliency would minimize the extent of habitat loss or degradation from climate-driven disturbances.

Acquiring lands to manage for coastal resiliency would help maintain the extent and condition of climate-vulnerable habitats, including coastal dunes. Allowing these communities to expand into acquired lands would ensure that habitat for reliant species, such as snowy plovers, remains available, even as other portions of the communities are lost to sea-level rise. This could be crucial to the persistence of coastal species, which have specific habitat needs but already limited areas that meet these requirements.

The action alternatives would focus recreation use in designated RMAs, such as SRMAs and ERMAs. Concentrating recreational use to certain areas would also concentrate disturbances to wildlife. As a result, wildlife within or near the RMAs would experience higher levels of disturbance and habitat degradation, however, as the effects would be more localized, it may be easier for them to avoid disturbance by displacing from or avoiding these areas. The action alternatives would manage, promote, and develop recreation resources while maintaining areas for other resources (e.g., wildlife, fish). As a result, the BLM would consider and manage to avoid or mitigate impacts on wildlife when planning recreational resources.

Under the action alternatives, all federally listed critical habitats are ROW avoidance areas. As a result, development of ROWs would be unlikely and federally listed species that inhabit these areas would experience reduced effects from ROWs as described under *Impacts Common to All Alternatives*. Any development within the planning area would be required to comply with ESA and BLM habitat management goals, leading to protection of special status species.

The acres of wildlife habitat types available for livestock grazing would vary by action alternative, as shown in **Table D-33**. Wildlife and habitat in areas available for grazing could experience impacts as described under *Impacts Common to All Alternatives*, but the extent would vary by alternative, as described in the sections below. However, these impacts would likely be limited to those areas where grazing allotments are active. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

Under the action alternatives, livestock grazing would be managed to ensure consistency with management objectives for other resources, including wildlife. Complying with these standards and direction would maintain or improve ecosystem function, vegetation diversity, and soil stability, supporting healthy wildlife

habitats. Managing grazing to maintain riparian habitat and function would reduce impacts on wildlife compared with maintaining habitat for riparian-associated species.

The action alternatives would incorporate cooperative vegetation treatment efforts to promote native, herbaceous plant diversity and promote grassland conservation. This would generally benefit wildlife species, such as big game, that rely on herbaceous species for forage and other habitat functions.

The acres of wildlife habitat types open and closed to leasable, locatable, and mineral materials development are shown in **Table D-34**, **Table D-35**, and **Table D-36**. Wildlife and habitat in areas open/closed to mineral development could experience impacts as described under *Impacts Common to All Alternatives*, but the extent would vary by alternative, as described in the sections below.

The action alternatives would continue to manage the Sacramento River Bend ACEC, but the total acres would vary by alternative. They would include an additional management objective to enhance existing habitat conditions for waterfowl and other wetland-dependent species. The new plan proposes an ACEC that includes a vernal pool complex, which would benefit species associated with this habitat type, such as the vernal pool fairy shrimp (see **Section D.2.6**, Fish and Aquatic Species).

The action alternatives would manage the Schoendome (Sheep Rock area formation) as part of the Sheep Rock ACEC, which would be prioritized for surveys for archaeological, plants, bats, and federal threatened and endangered species. Managing for these resources would help reduce impacts on bats and federally listed species because information on their presence could help prioritize where to implement further restrictions, such as seasonal closures of bat roosting sites.

All action alternatives would discontinue management of the Elder Creek RNA/ACEC (3,060 acres), the Red Mountain ACEC (6,800 acres), and the South Fork Eel River Watershed ACEC (7,110 acres) and would instead manage these areas as designated wilderness under the Wilderness Act. As a result, the relevant and important values of these ACECs, which include botanical resources that could provide wildlife habitat, would no longer be managed under the ACEC activity-level plan. Instead, management would be carried out pursuant to the Wilderness Act. Restrictions on allowable management activities, such as mechanical vegetation treatments, may reduce the opportunities for active management to maintain the extent and function of wildlife habitat. On the other hand, the lack of mechanized activities may reduce disturbance to wildlife populations.

The action alternatives would use fuels management treatments to maintain ACECs' relevant and important values. This could lead to short-term adverse impacts on wildlife and habitat due to habitat loss or alteration, but long-term benefits from improved habitat function and resilience. The action alternatives would also prioritize acquisition of lands near ACECs to add to the protection of sensitive resources and to the overall significance of the area. This would benefit wildlife by potentially expanding the area of large, contiguous blocks of undisturbed habitat, increasing habitat connectivity that contributes to daily movements and migration.

Effects from designated wilderness areas, Section 603 WSAs, and WSRs would be described under *Effects Common to All Alternatives*, although the acres of each and magnitude of effects would vary by alternative, as described in the following sections.

Alternative B

Alternative B emphasizes habitat connectivity and resilience and is the most proactive in promoting conservation and recovery of threatened and endangered and other special status species. It would do this by prioritizing actions that promote and maintain corridors of relatively undeveloped areas to provide habitat connectivity and to serve as a resilient refuge to ongoing development and climate change.

Alternative B includes direction to survey for Shasta salamander and other sensitive amphibians and establish buffers for their protection when found. Establishing 100-foot disturbance buffers around limestone would protect sensitive amphibians by precluding impacts from surface-disturbing activities, such as trampling and habitat degradation from foot or vehicle traffic.

Under this alternative, the BLM would manage 89,322 acres of critical deer winter range (**Map 3-6, Big Game Habitat in Appendix A**) by pursuing opportunities for acquisition of land with wetland habitat and migration/essential connectivity corridors of high biological value. The BLM would not allow predator control to protect listed or otherwise sensitive species. As a result, species threatened by predation would continue to be at risk from this threat.

Alternative B prioritizes the promotion of late seral characteristic in forested areas (not LSRs) through actions such as increasing stand growth, heterogeneity, complexity, and resilience to disturbance. Treatments in LSRs would primarily focus on promoting late seral characteristics and wildlife habitat and increasing stand heterogeneity. Where carried out, effects from treatments would be as described under *Impacts Common to All Alternatives*. Old growth-related species, such as NSO, fisher, marbled murrelet, and marten, may benefit from increased availability of late-successional habitats. Many other wildlife species would benefit from increased heterogeneity and diversity of forest habitats due to increased availability and diversity of habitat characteristics (e.g., breeding habitat, prey species cover, forest openings). Prohibiting commercial timber harvests in LSRs, unless needed to maintain or protect wildlife habitat, would reduce disturbances to wildlife in these areas and help maintain old-growth characteristics used by many wildlife species. However, as a result, fewer acres may be treated to reach desired forest conditions, meaning the pace of achieving desired conditions would be reduced relative to other action alternatives. Effects on wildlife from forest management would be similar to those described for Alternative B. However, Alternative C would prioritize increased fire resiliency of stands in forested areas and LSRs while also promoting other characteristics, including late-successional characteristics, and increased stand productivity and heterogeneity. The focus on fire resiliency would decrease the risk of habitat loss and alterations from uncharacteristic wildfire. As a result, habitat availability for forest-dependent wildlife may increase over the long term. This may increase late-successional habitat used by species such as NSO and marbled murrelet over the long term.

Alternative B provides opportunities for recreation and improved access by designating one special recreation management area (SRMA) and five ERMA. The acres of wildlife habitats within these RMAs are shown in **Table D-30**. Wildlife and habitat in RMAs would experience impacts as described under *Impacts Common to All Alternatives*.

Under Alternative B, the BLM would not manage the Mike Thompson Wildlife Area, South Spit, Humboldt Bay as an ERMA. The area would be managed the same as Alternative A, however, Alternative B would impose more restrictions on the areas, including prohibiting unmanned aerial vehicles (UAVs) within 300 feet of snowy plover protection areas and restricting OHV wave slope access. Additionally, the rest of

the Coastal Strip not included in the Samoa Dunes designated riding area or Mike Thompson Wildlife Area as well as newly acquired lands within the Coastal Strip would be managed as OHV closed. These management actions would benefit coastal species, such as snowy plovers, to a greater extent than Alternative A. The effect would be a result of decreased levels of disturbance, such as noise and human presence, and reduced potential for habitat alterations. As a result, sensitive species that inhabit these areas, such as nesting snowy plovers, may experience increased reproductive success and survival. Additionally, under this alternative, the Sacramento River Bend, Trinity River, Ewing Area, and Weaverville Community Forest would not be designated as ERMA's. Wildlife associated with these areas, including waterfowl, migratory birds, and amphibians, would benefit from reduced disturbance and potential for habitat alterations.

Under Alternative B, 190 acres would be open to OHV travel. Wildlife and habitat in these areas would experience impacts as described under *Impacts Common to All Alternatives* (see **Table D-31**). The extent of impacts would be lower compared with Alternative A due to the higher number of acres closed to OHV use in wildlife habitats.

The acres of wildlife habitat that would be managed as ROW open, avoidance, and exclusion areas under Alternative B are shown in **Table D-32**. Impacts on wildlife from ROW management would be as described under *Impacts Common to All Alternatives*. Overall, the extent of impacts would be lower compared with Alternative A because fewer acres of wildlife habitat would be open to ROWs.

Under Alternative B, 232,800 acres would be available for livestock grazing. However, only 62,000 acres would continue to be managed as grazing allotments, which would be a reduction from Alternative A. Impacts on wildlife and habitat would be limited to those areas where livestock grazing allotments are active. Wildlife and habitat in these areas would experience impacts as described under *Impacts Common to All Alternatives* (see **Table D-33**).

Closing essential connectivity corridors to grazing on a case-by-case basis would benefit big game species due to increased forage levels. Other wildlife species would also benefit from increased habitat quality. Increased availability of habitat features, such as cover and forage, along essential connectivity corridors would facilitate successful migration movements.

The acres of wildlife habitat types open and closed to leasable, locatable, and mineral materials development are shown in **Table D-34**, **Table D-35**, and **Table D-36**. Wildlife and habitat in these areas would experience impacts as described under *Impacts Common to All Alternatives*. The extent of impacts would be lower compared with Alternative A due to the lower number of acres open to mineral entry in wildlife habitats. This alternative includes the fewest acres of wildlife habitats available for mineral leasing, and impacts on wildlife associated with mineral leasing and development would be lowest.

Closing the Ma-le'i Dunes ACEC and Mike Thompson Wildlife Area South Spit Humboldt Bay to mineral materials development would benefit wildlife species and habitat in these areas due to decreased levels of disturbance and reduced potential for habitat alterations. As a result, sensitive species that inhabit these areas, such as nesting snowy plovers, may experience increased reproductive success and survival.

Alternative B would designate 25 ACECs, totaling 88,820 acres. The acres of wildlife habitats, including critical habitats and habitats corresponding to vegetation cover types, contained within ACECs and WSRs, are shown in **Table D-37**, **Table D-17**, and **Table D-22**. Effects to wildlife from designated areas would

occur as described under *Effects Common to All Alternatives*. The extent of effects to wildlife from managing ACECs and other designated areas would occur over a larger extent relative to Alternative A due to the greater amount of wildlife habitats within designated areas.

Effects from continuing to manage the Sacramento River Bend ACEC (20,420 acres) would be the same as described for Alternative A, however, the size of the ACEC would be larger, meaning the extent of impacts (including habitat protections) would be greater. Additional management actions in this ACEC would reduce impacts from land use activities and promote riparian habitat health and connectivity. This would result in greater protection of habitat for riparian associated species such as waterfowl and migratory birds.

Alternative B would continue to manage the Hawes Corner ACEC and expand the Ma-le'l Dunes ACEC (i.e., the Manila Dunes ACEC under Alternative A). Effects would be similar to those described for Alternative A, however, increased protections (e.g., closed to mineral development and ROW exclusion or avoidance) would result in reduced disturbance and lower potential for habitat alterations for coastal dune-, wetland-, and vernal pool-associated wildlife species.

Continuing to manage and expand the Baker Cypress ACEC would provide increased protections to species associated with the rare cypress vegetation cover type and vernal pool habitat (**Table D-25**). Increased management actions, such as prohibitions on surface-disturbing resource uses, would help maintain or improve the extent of this habitat type and increase habitat suitability and reduce disturbances to wildlife. Similarly, continuing to manage, and in cases expanding, existing ACECs for late successional forests and riparian areas, would help maintain the extent and condition of habitats for species, such as NSO, marbled murrelet, and fisher, that utilize late-successional forest characteristics. In cases, increasing in protective management actions would restrict or limit disturbing activities, reducing wildlife disturbances and habitat alterations in these areas. This includes the Gilham Butte ACEC, Laqua Butte ACEC, and Lacks Creek ACEC (for old-growth forest), and the Sacramento Island ACEC, and Shasta and Klamath River Canyon ACEC (for riparian areas).

Alternative B would find 117 eligible WSRs suitable for designation. The miles of wildlife habitats, including critical habitats, contained within WSRs are shown in **Table D-38**. Management for WSRs would impact riparian-associated wildlife as described under *Effects Common to All Alternatives*. Protections of riparian species and habitat would be greater due to the larger number of eligible WSR segments.

Alternative C

Alternative C prioritizes management actions that promote ecosystem resiliency to large disturbances (e.g., fire, drought, rain events). This could lead to short-term adverse effects to wildlife as described under *Effects Common to All Alternatives* but long-term beneficial effects from reduced risk of habitat loss due to disturbance. Impacts from managing 89,322 acres of critical deer winter range (**Map 3-6**, Big Game Habitat in **Appendix A**) by pursuing land tenure adjustments to improve recreational access for deer hunting may potentially increase disturbance impacts to overwintering deer from recreational activities (such as, shed hunting, mountain biking). Disturbance that leads to displacement is a concern due to limited acreage of available habitat, and forage. Overall, the land tenure adjustments would increase habitat connectivity for big game species.

Alternative C does not identify amphibian buffers; as a result, sensitive amphibian species would be at risk from surface-disturbing activities. However, the BLM would manage predators to protect threatened and endangered species. Actions would include predator control to protect listed or otherwise sensitive species. These species would benefit due to reduced risk of predation, which could help promote species recovery for those species threatened by predation. Predator control measures may also help control overpopulated corvids, which are major predators of snowy plover nests and are a serious threat to plover chicks (Liebezeit and George 2002).

Effects on wildlife from forest management would be similar to those described for Alternative B. However, Alternative C would prioritize increased fire resiliency of stands in forested areas and LSRs while also promoting other characteristics, including late-successional characteristics, and increased stand productivity and heterogeneity. The focus on fire resiliency would decrease the risk of habitat loss and alterations from uncharacteristic wildfire. As a result, habitat availability for forest-dependent wildlife may increase over the long term. This may increase late-successional habitat used by species such as NSO and marbled murrelet over the long term.

Under this alternative, four SRMAs and nine ERMAs would be established to promote recreation opportunities. The acres of wildlife habitats within RMAs under Alternative C are shown in **Table D-30**. Wildlife and habitat in RMAs would experience impacts as described under *Effects Common to All Alternatives*.

Under Alternative C, 190 acres would be open to OHV use. Wildlife and habitat in these areas would experience impacts as described under *Effects Common to All Alternatives* (see **Table D-31**). The extent of impacts would be similar to Alternative A due to the same number of acres open to OHV use in wildlife habitats.

Under Alternative C, the BLM would manage the Mike Thompson Wildlife Area, South Spit, Humboldt Bay, Sacramento River Bend, Trinity River, Ewing Area, and Weaverville Community Forest as an ERMA. Effects to wildlife and habitat, such as disturbance and potential for habitat alterations, would increase compared with Alternative B. However, management actions would be identified to reduce impacts. For example, prohibiting UAVs within 300 feet of snowy plover protection areas and restricting OHV wave slope access would limit disturbances to sensitive coastal species. Managing the Mike Thompson Wildlife Area South Spit Humboldt Bay as OHV limited and the rest of the Coastal Strip not included in the Samoa Dunes designated riding area and Mike Thompson Wildlife Area South Spit Humboldt Bay as OHV limited would also reduce impacts on coastal species, though to a lesser extent than under Alternative B.

The acres of wildlife habitat that would be managed as ROW open, avoidance, and exclusion areas under Alternative C are shown in **Table D-32**. Impacts on wildlife from ROW management would be as described under *Impacts Common to All Alternatives*. Overall, the extent of impacts would be lower compared with Alternative A because fewer acres of wildlife habitat would be open to ROWs.

While 271,800 acres would be available for livestock grazing under Alternative C, only 64,500 acres would continue to be managed as grazing allotments, which would be an increase from Alternative A. Impacts on wildlife and habitat would be limited to those areas where livestock grazing allotments are active. Wildlife and habitat in these areas would experience impacts as described under *Impacts Common to All Alternatives* (see **Table D-33**). The extent of impacts would be higher compared with Alternative A due to the greater number of acres where grazing impacts could occur in wildlife habitats.

Opening essential connectivity corridors to livestock grazing on a case-by-case basis in suitable areas may increase impacts on wildlife, particularly big game, and their habitat due to decreased forage and increased potential for habitat alterations from grazing.

The acres of wildlife habitat types open and closed to leasable, locatable, and mineral materials development are shown in **Table D-34**, **Table D-35**, and **Table D-36**. Wildlife and habitat in these areas would experience impacts as described under *Impacts Common to All Alternatives*. The extent of impacts would be lower compared with Alternative A due to the lower number of acres open to mineral entry in wildlife habitats. This alternative makes the most acreage available for mineral leasing; however, a large portion of the acreage would have stipulations such as no surface occupancy, which would protect wildlife from surface-disturbing activities.

Impacts from closing the Ma-le'l Dunes ACEC and Mike Thompson Wildlife Area South Spit Humboldt Bay to mineral materials development would be the same as described under Alternative B.

Alternative C would designate seven ACECs and manage two river segments as suitable for inclusion in the NWSRS. The acres of wildlife habitats, including critical habitats and habitats corresponding to vegetation cover types, contained within ACECs are shown in **Table D-37**, **Table D-17**, and **Table D-22**. Effects to wildlife from managing designated areas would occur as described under *Effects Common to All Alternatives*. The extent of effects to wildlife from managing ACECs would occur over a smaller extent relative to Alternative A due to fewer designations.

Under Alternative C, the Baker Cypress, Hawes Corner, Sacramento Island, and Shasta and Klamath River Canyon ACECs would not be retained. As a result, protections and targeted management for wildlife species associated with the rare cypress vegetation cover type, mountain vernal pool habitat, and riparian areas (**Table D-25**) would not be retained. These species would be at increased risk of disturbance and habitat alterations. However, compliance with existing regulations and guidance for sensitive species (e.g., the ESA) would still provide protection for these resources, helping to maintain, but not necessarily improving, the extent, condition, and resilience of these areas.

Reducing the size of (Gilham Butte ACEC) or not retaining (Laqua Butte, Lacks Creek ACECs) ACECs for late successional forests may similarly reduce some protections and targeted management for wildlife species, such as NSO and marbled murrelet, which are dependent on late-successional forest habitat characteristics. However, most of these areas would be managed as LSRs, and as a result, there would still be management to enhance and protect late-successional habitats in most of these areas.

Effects from managing the Sacramento River Bend ACEC (18,600 acres) and the Ma-le'l Dunes ACEC with additional protections would be similar as described for Alternative B. However, smaller areas and fewer management restrictions (in the case of the Sacramento River Bend ACEC) would lead to a smaller extent of impacts and fewer protections to riparian and wetland associated species.

The miles of wildlife habitats, including critical habitats, contained within WSRs are shown in **Table D-38**. Management for WSRs would impact riparian-associated wildlife as described under *Effects Common to All Alternatives*. Protections of riparian species and habitat would be lower relative to Alternative B due to the smaller number of eligible WSR segments.

Alternative D

Impacts from managing 89,322 acres of critical deer winter range (**Map 3-6**, Big Game Habitat, in **Appendix A**) by pursuing opportunities for acquisition of land with wetland habitat and migration/essential connectivity corridors of high biological value would be as described for Alternative B. Effects from pursuing additional land tenure adjustments to improve recreational access for deer hunting would be as described for Alternative C. Effects from not including amphibian buffers would be the same as for Alternative C. Effects from predator management would be the same as for Alternative C.

Effects on wildlife from forest management would be similar to those described for Alternative B. However, Alternative D would prioritize both increased fire resiliency and promotion of late seral characteristics. This would help achieve a balance between maintaining existing old-growth habitat characteristics and reducing the risk of future habitat loss. Effects on wildlife from forest management would be similar to those described for Alternative B. However, Alternative C would prioritize increased fire resiliency of stands in forested areas and LSRs while also promoting other characteristics, including late-successional characteristics, and increased stand productivity and heterogeneity. The focus on fire resiliency would decrease the risk of habitat loss and alterations from uncharacteristic wildfire. As a result, habitat availability for forest-dependent wildlife may increase over the long term. This may increase late-successional habitat used by species such as NSO and marbled murrelet over the long term.

Alternative D provides similar opportunities for recreation and improved access to Alternative C by designating four SRMAs and eight ERMAs. The acres of wildlife habitats within RMAs under Alternative D are shown in **Table D-30**. Wildlife and habitat in RMAs would experience impacts as described under *Impacts Common to All Alternatives*

Under Alternative D, 190 acres would be open to OHV use. Wildlife and habitat in these areas would experience impacts as described under *Impacts Common to All Alternatives* (see **Table D-31**). The extent of impacts would be lower compared with Alternative A due to the higher number of acres closed to OHV use in wildlife habitats.

Impacts on wildlife from managing the Mike Thompson Wildlife Area, South Spit, Humboldt Bay, Sacramento River Bend, Trinity River, Ewing Area, and Weaverville Community Forest as an ERMA would be the same as described for Alternative C.

The acres of wildlife habitat that would be managed as ROW open, avoidance, and exclusion areas under Alternative D are shown in **Table D-31**. Impacts on wildlife from ROW management would be as described under *Impacts Common to All Alternatives*. Overall, the extent of impacts would be lower compared with Alternative A because fewer acres of wildlife habitat would be open to ROWs.

While 188,600 acres would be available for livestock grazing under Alternative D, only 59,000 acres would continue to be managed as grazing allotments, which would be a reduction from Alternative A. Impacts on wildlife and habitat would be limited to those areas where livestock grazing allotments are active. Wildlife and habitat in these areas would experience impacts as described under *Impacts Common to All Alternatives* (see **Table D-33**). The extent of impacts would be reduced compared with Alternative A due to the lower number of acres where impacts from grazing could occur in wildlife habitats.

Impacts on wildlife from opening essential connectivity corridors to livestock grazing on a case-by-case basis would be the same as described for Alternative C.

The acres of wildlife habitat types open and closed to leasable, locatable, and mineral materials development are shown in **Table D-34**, **Table D-35**, and **Table D-36**. Wildlife and habitat in these areas would experience impacts as described under *Impacts Common to All Alternatives*. The extent of impacts would be lower compared with Alternative A due to the lower number of acres open to mineral entry in wildlife habitats.

Impacts from closing the Ma-le'l Dunes ACEC and Mike Thompson Wildlife Area South Spit Humboldt Bay to mineral materials development would be the same as described under Alternative B.

Alternative D would designate 26 ACECs, however, the total acreage of ACECs under Alternative B is greater. The acres of wildlife habitats, including critical habitats and habitats corresponding to vegetation cover types, contained within ACECs are shown in **Table D-37**, **Table D-17**, and **Table D-22**. Effects to wildlife from managing designated areas would occur as described under *Effects Common to All Alternatives*. The extent of effects to wildlife from managing ACECs would occur over a greater extent relative to Alternative A due to more designations.

Effects from managing the Sacramento River Bend ACEC as 20,420 acres would be the same as described for Alternative B, however, considering width expansions to existing ROW areas on a case-by-case basis would lead to discrete areas of habitat loss relative to Alternative B. Because the habitat loss would be along existing ROWs, which already do not provide suitable wildlife habitat, the effect would be diminished.

Alternative D would identify six WSR river segments to be managed as suitable for inclusion in the NWSRS under Alternative D. The miles of wildlife habitats, including critical habitats, contained within WSRs are shown in **Table D-38**. Management for WSRs would impact riparian associated wildlife as described under *Effects Common to All Alternatives*. Protections of riparian species and habitat would be lower relative to Alternative B due to the smaller number of eligible WSR segments.

Cumulative Impacts

The cumulative analysis area for wildlife is the planning area. Factors that could cumulatively impact wildlife species or habitats they use include wildlife and vegetation management on non-BLM lands, increased population growth and recreation, pesticide use, disease, wildfire, and climate change.

Disturbance to wildlife is expected to increase as recreation use increases with human population growth and continued tree mortality reduces the amount of quality wildlife habitat available. This is more of a concern for those species' intolerant of disturbance and with specific habitat requirements, such as Townsend's big-eared bat, or when it occurs in higher value habitats, such as riparian ecosystems.

Several risk factors fall outside the authority of the BLM but have the potential to impact populations on a regional or global scale. These are acid deposition, pesticide blown in the air, climate change, disease, and ultraviolet radiation. The ecological consequences of climate change likely pose the most risk to aquatic species. This is because of their potential to change the quantity and seasonal pattern of water storage and flow through aquatic systems. However, restoration of meadows, which store water in watersheds with at-risk species, can buffer against changing climate.

Reduced snowpacks may result in less available surface water, which could affect species' breeding sites and may lead to less successful reproduction, especially in smaller headwater streams. Changes in seasonal

patterns of precipitation types and amounts, along with early snowmelt and warmer temperatures, may affect species behavior, the timing of reproduction, and other parts of their life cycle. This could result in lowering survivorship. Improving ecosystem integrity in meadows and uplands in critical habitat areas may lessen local risk factors. This would result from improving the resilience of watersheds to annual fluctuations in weather conditions and water flow through aquatic systems.

The ecological consequences of past, present, and future vegetation management and climate change on terrestrial federally listed species, such as the NSO, are more complex and uncertain. The combination of changes from past vegetation management and a legacy of wildfire suppression influence habitat conditions today. This is the result of forest densification and homogenization, which tend to temporarily create higher quality habitat for mature forest-dependent species. There has also been a reduction in the number and distribution of very large and old trees from intensive timber harvest. Another cause of this is the long-term losses of mature trees from contemporary large and high-severity wildfire. In addition, mature trees have been affected by periodic drought, which tends to reduce habitat quality for forest-dependent species, such as fishers.

Large areas affected by widespread tree mortality and high-severity wildfire also have areas that were homogeneous dense forest converted into homogeneous open forest or deforested areas. Such areas are greatly departed from the heterogeneous conditions expected from the natural range of variation shaped by frequent fire. Where wildfires burn with low and mixed severity, areas can be put into the natural range of variation. This would come about if the residual levels of heavy fuel loading were similar to what is expected with a frequent fire regime. If residual fuel loading remains too high, the potential for future high-severity wildfire effects remains high.

The present trends in mature forest habitat losses from large areas of high-severity wildfires are expected to continue or increase in all alternatives. However, the trend is expected to be tempered if the alternatives can reduce excessive fuels and restore vegetation heterogeneity.

Projections of changes in the amount and patterns of precipitation with warming temperatures are expected to result in longer periods of substantial wildfire activity. This could result in direct removal of habitat and the cumulative loss of mature forest habitats over time.

Based on the above potential threats to mature forests, if the rate of reforestation and successful survival of conifer trees to maturity remains less than the rate of loss of existing mature forests, there will continue to be a cumulative net loss of mature and old-forest habitat over time. The effects of climate change may increase the risks to old growth forests from increasing wildfire potential and increasing risks of tree mortality related to droughts. However, there may also be some potential benefits to fishers if there is an increase in habitat availability from the predicted reduction in snowpack. Nevertheless, this may not be realized if the extent of high-severity wildfire extends into these higher elevation forests.

D.2.6 Fish and Aquatic Species

Issue Statements

- Given the broader development-related and climate-related habitat trends, how would the alternatives affect resiliency and recovery of special status species?
- Given changing land use patterns and climate, how would the alternatives affect habitat conditions or population levels?
- How would the alternatives affect activities in conservation areas for special status species?

Affected Environment

Aquatic habitats within the planning area are diverse and consist of rivers, streams, springs, seeps (generally referred to as lotic or flowing systems) and lakes, reservoirs, and ponds (generally referred to as lentic or still water systems), which provide year-round (perennial) or seasonal (intermittent) habitat for fish, aquatic invertebrate, amphibian, and reptile species.

The wide dispersal and scattered parcel distribution of BLM-administered lands in the planning area result in aquatic habitat for specific streams and rivers crossing land owned by different entities, making it difficult to describe specific habitat conditions relative to single landownership. As a result, the current conditions of aquatic resources in the planning area are presented in terms of overall habitat conditions, type (lentic or lotic), and fish species distribution and diversity. On a regional scale, the BLM is a minor landowner compared with Forest Service-administered lands and private property, owning just 3 percent of the land.

The California Department of Fish and Wildlife's (CDFW) Areas of Conservation Emphasis Project (ACE) identifies aquatic irreplaceability as a measure of the uniqueness of habitat areas for aquatic species. It is one measurement used to describe the distribution of overall species biodiversity in California. **Table D-39** displays the aquatic habitat irreplaceability in the surface decision area.

Table D-39
Aquatic Irreplaceability

Aquatic Irreplaceability Measure	Acres
High	6,600
Medium-High	61,200
Medium	26,600
Medium-Low	162,100
Low	43,300

Source: BLM GIS 2023

Lotic Habitat

Approximately 778 miles of streams and 1,817 acres of floodplain habitat occur on BLM-administered lands within the planning area. Of this, 523 miles have been identified as perennial fish-bearing stream and river corridors. Major inland waterways within the Klamath, Sacramento-San Joaquin, and Coast Range systems include the Eel, Mattole, Smith, Mad, Sacramento, Klamath, Pit, Scott, Shasta, and Trinity Rivers, as well as Paynes, Clear, Mill, Deer, Battle, Butte, Cow, and Cottonwood Creeks. **Table D-40** identifies the lotic systems encompassed by the planning area and the diversity of fish species they support.

Map 3-8 in **Appendix A** shows mean August water temperatures (1993 to 2011) in the stream systems in the Redding and Arcata FOs, according to the Northwest Stream Temperature Database (Isaak et al. 2016). As shown, there are large areas of stream basins that have been historically warm; however, it is highly likely that fires that occurred between 2017 and 2020 burned bankside vegetation and exacerbated temperature issues. Thus, the extent of areas where temperatures exceed 57.2°F (14°C) is likely larger than that depicted in **Map 3-8** in **Appendix A**.

Table D-40
Lotic Systems and Fish Diversity Within the NCIP Planning Area

Basin	Lotic Systems Encompassed	Fish Species Diversity by Family (including Aquatic Invasive, Nonnative Species)
North Coast	Eel, Mattole, Smith, Mad Rivers and their associated Estuaries, and Redwood Creek	Petromyzontidae, Acipenseridae, Cyprinidae, Osmeridae, Catostomidae, Salmonidae, Cottidae, Embiotocidae, Gasterosteidae, Gobidae, Pleuronectidae, Clupidae, Atherinopsidae, Ictaluridae, Percidae
Sacramento-San Joaquin	Paynes, Sacramento, Pit, McCloud, Clear, Mill, Deer, Battle, Butte, Cow, and Cottonwood Creeks	Petromyzontidae, Acipenseridae, Cyprinidae, Osmeridae, Catostomidae, Salmonidae, Cottidae, Gasterosteidae, Ictaluridae, Poeciliidae, Moronidae, Centrarchidae
Klamath	Klamath, Trinity, Scott, and Shasta Rivers	Petromyzontidae, Cyprinidae, Catostomidae, Salmonidae, Cottidae, Ictaluridae

Of the streams in the planning area, 230 miles are impaired as defined by Section 303(d) of the Clean Water Act (more detailed in Table 2-63 [page 2-206] of the AMS [BLM 2021a]).

A number of ACECs occur in the planning area and were created in previous planning efforts to protect riparian and wetland habitats and associated aquatic organisms (see **Section D.4.1**).

Lentic Habitat

Lentic habitats in the planning area consist of human-made ponds and reservoirs, natural and modified wetlands, seeps and springs, bedrock basins, stock ponds, vernal pools, and floodplain habitat adjacent to riverine systems. In the planning area, these features range in size from the 30,000-acre Lake Shasta Reservoir to unnamed stock ponds or vernal pools less than 100 square feet in size.

In the planning area, 2,016 acres of BLM-administered lands are encompassed by recreational fishing reservoirs. Some of these lands fall within, and in many cases are subsurface to, existing reservoirs such as Oroville and Iron Gate Reservoirs. Within the planning area, the BLM manages, helps manage, or provides access to eight of these reservoirs (**Table D-41**). With the exception of Buckhorn (Grass Valley Creek) and Keswick Reservoirs, most of these are small reservoirs occurring entirely on BLM-administered land and stocked by the BLM and/or CDFW with a few species each, primarily largemouth bass (*Micropterus salmoides*), red-eared sunfish (*Lepomis microlophus*), and channel catfish (*Ictalurus punctatus*) or rainbow trout (*Oncorhynchus mykiss*). Buckhorn and Keswick Reservoirs are located on Bureau of Reclamation-managed land; however, the BLM manages the land around the reservoirs.

Table D-41
Reservoirs Managed by the BLM within the NCIP Planning Area

Reservoir	Manager/Ownership	Taxa Found	Acres
Buckhorn Reservoir/Grass Valley Creek Reservoir	Bureau of Reclamation	Rainbow trout, Golden shiner	37
Keswick Reservoir	Bureau of Reclamation	Nonnative game fish, Nonnative panfish, Nonnative catfish, Rainbow trout, Brown trout	513

Reservoir	Manager/Ownership	Taxa Found	Acres
Coyote Pond	BLM Redding	Nonnative game fish, Nonnative panfish, Nonnative catfish	3
Bass Pond	BLM Redding	Nonnative game fish, Nonnative panfish, Nonnative catfish	2
Union Hill Pond	BLM Redding	Nonnative game fish, Nonnative panfish,	12
Osprey Pond	BLM Redding	Nonnative game fish, Nonnative panfish, Nonnative catfish	6
Blue Pond	BLM Redding	Amphibians	2

In addition to these reservoirs and ponds, the BLM manages multiple seeps and springs, bedrock basins, stock ponds, modified and natural vernal pools, and wetland complexes, which provide habitat to a suite of aquatic-dependent biota such as beaver, waterfowl, multiple crustacean groups including fairy, tadpole, and clam shrimp, and crayfish, amphibians, spring snails, and others (**Table D-42**). These wetland features may be perennial or seasonal and range in size from smaller than 100 square feet to larger than 60 acres. Additionally, the BLM Redding FO manages the Paynes Creek Wetland Complex. It is made up of a complex of managed wetlands and fishing ponds, amounting to approximately 160 acres, and the Corning Vernal Pool Complex, totaling 40 acres. On BLM-administered lands within the planning area, there are more than 717 of these features, totaling more than 425 acres of upland lentic resources.

Table D-42
Notable Lentic Systems on BLM-Administered Lands within the NCIP Planning Area

Wetland	Species Found	Acres
Paynes Creek Wetland Complex	Fish, beaver, waterfowl, shorebirds, wading birds, crayfish, amphibians, reptiles, aquatic invertebrates	160
Tamarak Lake	Waterfowl, amphibians, aquatic invertebrates	37
Butte Valley	Amphibians, aquatic invertebrates	23
Honeybee Wetlands	Amphibians, aquatic invertebrates	2
Spring Branch Plains Vernal Pool Complex	Amphibians, aquatic invertebrates	43
Hog and Hoggett Lake	Waterfowl, amphibians, aquatic invertebrates	21
Lacks Creek Ponds	Amphibians, aquatic invertebrates	2
Corning Vernal Pool Complex	Vernal pool fairy shrimp	40

One of these vernal pools was impacted by fire in 2018 (**Map 3-9**, Vernal Pools and Fire History in **Appendix A**). If surrounding vegetation burned, water temperatures have likely increased and/or water quantities have decreased. Because of the sensitive nature of vernal pools, these new conditions may mean that the pools support less aquatic life, no longer support aquatic life, or no longer exist.

Aquatic Species

Of the approximately 66 native freshwater, estuarine, or anadromous fish species that occur in California (Moyle 2002), approximately 45 occur within the planning area. Thirty-one species of nonnative fish occur in the planning area, totaling approximately 76 fish species in the planning area (Table 2-12 in the AMS [BLM 2021a, page 2-42]).

Seven of these species have identified subspecies or possess distinct ranges reproductively isolated from the population or that are considered DPSs, or evolutionary significant units (ESUs). When these additional 24 subspecies, DPSs, or ESUs are taken into consideration, approximately 62 of California's 124 native inland fish (Moyle et al. 2015) occur within the planning area (Table 2-13 in the AMS [BLM 2021a, page 2-45]).

Special Status Species and Priority Habitats

Species identified as requiring special management considerations as nonnative aquatic invasive species, threatened and endangered (T&E) species, species of special management concern, or BLM sensitive species are analyzed in the EIS and summarized in Table 2-14 in the AMS (BLM 2021a, page 2-46). For identified sensitive aquatic amphibian and reptile species, see **Section D.2.5, Wildlife**.

Threatened and Endangered Species

There are 13 fish and 4 aquatic invertebrates listed as threatened or endangered under the ESA known to occur in the planning area; these are listed in Table 2-14 in the AMS (BLM 2021a, page 2-46).

Special Status Species and Priority Habitats

BLM sensitive species are species that require special management consideration to reduce the need for listing as well as all federal candidate species, proposed species, and delisted species in the 5 years following delisting. The BLM priority species or habitats are those recognized as significant for at least one factor such as density, diversity, size, public interest, remnant character, or age. There are 16 nonlisted species and two habitat types that are either priority species or habitat, or BLM sensitive species requiring special management consideration (Table 2-14 in the AMS [BLM 2021a, page 2-46]).

These species are not already listed under the federal ESA; are of high interest to the public, or are experiencing, or have formerly experienced, population declines or range retractions that, if continued, could qualify them for listing as threatened or endangered; and have naturally small populations exhibiting high susceptibility to risk from stressors that, if realized, could lead to declines that would qualify them for listing as a BLM sensitive species or as a federally threatened or endangered species.

Priority habitats (both lentic and lotic) that occur in the planning area are:

- 523 miles of anadromous habitat occur on BLM-administered lands (67 percent of stream miles on BLM-administered lands)
- 778 miles of riparian habitat occur on BLM-administered lands
- 1,817 acres of floodplain habitat occur on BLM-administered lands

The BLM conserves habitat for special status species that occur on BLM-administered lands (Table 2-14 in the AMS [BLM 2021a, page 2-46]), and may implement conservation strategies, such as those found in recovery plans, cooperative agreements, state wildlife action plans, and other strategies (e.g., Freshwater Mussels of the Pacific Northwest, Habitat Management Guidelines for Amphibians and Reptiles of the Northwestern United States and Western Canada) for BLM special status species.

Invasive, Nonnative Species

There are 44 nonnative aquatic fish and invertebrate species documented from the planning area or connected waterways; see Table 2-15 in the AMS (BLM 2021a, page 2-50). These species have and will

continue to affect aquatic ecosystems by disrupting ecological processes, competing with native species, reducing biological diversity, and contributing to the decline of native fish and invertebrate populations (Mack and D'Antonio 1998).

Trends

Stream temperature projections for 2040 and 2080 (Isaak et al. 2016) are shown on **Map 3-10**, Future 2040 Scenario Stream Temperatures, and **Map 3-11**, Future 2080 Scenario Stream Temperatures, in **Appendix A**. Estimated miles of coldwater refugia streams are shown in **Table D-43**. While some areas of higher temperatures are projected to increase, colder streams are projected to maintain those colder temperatures through the next 60 years. As described above, since projections were completed in 2016, fires occurred between 2017 and 2020 that burned bankside vegetation and will likely continue to exacerbate temperature issues in the future. Thus, the extent of areas where temperatures are projected to exceed 57.2°F (14°C) is likely now larger than what is shown on **Map 3-10** and **Map 3-11** in **Appendix A**. Also, the likelihood of fire impacts on vernal pools and pool complexes is likely to increase in the future.

Table D-43
Estimated Trends in Aquatic Habitat Condition in the Planning Area

Trend	Miles of Stream
Coldwater refugia in 2040	5,510
Coldwater refugia in 2080	3,290

Source: BLM GIS 2023

Water demands are expected to continue to increase with population growth and climate change. These increased demands will likely include additional agricultural and domestic water use by a growing population. Additionally, increasing temperatures and aridification may cause additional water strain through increased evaporation and decreased precipitation. These issues will continue to exacerbate streamflow issues (i.e., decreasing summer low flows) and reduce surface water quantity. Summer low flows have decreased in Northern California coastal streams and this trend is expected to continue.

Vegetation treatments have been used on BLM-administered land, other federal lands, and private lands in the planning area. These treatments include manual, mechanical, biological, and chemical treatments and prescribed fire to reduce hazardous fuels and prevent catastrophic wildfires that would reduce or eliminate riparian shade vegetation. These treatments, and maintenance of these vegetation treatments, will likely continue on BLM-administered land, other federal lands, and private lands, and will likely continue to exacerbate stream temperature issues.

It is expected that recreation use levels will increase in the planning area on BLM and non-BLM-administered lands. Unauthorized travel off designated or existing routes, as well as the creation of social trails, has occurred and will likely occur within the decision area. Requests for SRPs and recreational use permits (RUPs) associated with recreation opportunities are expected to increase within the planning area. These actions have and will continue to degrade aquatic habitat at stream crossings.

Environmental Consequences

Impacts Common to All Alternatives

Management under all alternatives would affect fish and aquatic species by 1) altering, removing, or adding habitat, and 2) increasing vectors for nonnative species introduction or spread.

Habitat Alteration, Loss, or Gain

Actions that could result in surface disturbance that would affect aquatic habitat include: mineral development, ROW development, timber harvest, and actions that increase or decrease riparian, stream, or tideland connectivity. Other non-surface-disturbing actions that could impact aquatic habitat include recreation management through increased SRPs in RMAs and management of SRMAs and ERMA; OHV use; grazing, especially in riparian areas; and water withdrawal for industrial/domestic purposes. All alternatives would result in altering, removing, or adding habitat, though the magnitude of the effects would differ by alternative and are described by alternative, below.

Surface disturbance, especially in riparian areas or near streams, can increase sediment runoff to aquatic habitats, remove riparian vegetation, contribute to increases in water temperature, decrease habitat complexity, and change nutrient inflow to streams. All of these degrade habitat quality. Actions that increase or decrease riparian, stream, or tideland connectivity would also change habitat quantity. Degradation of habitat could be minimized by design features and BMPs (**Appendix F**).

Non-surface-disturbing project actions could also affect aquatic habitats. Increasing SRPs would increase the likelihood of human waste being deposited in the planning area, increasing nutrient inputs to surrounding waterbodies. Similarly, SRMAs and ERMA are designated recreation areas that tend to attract visitors and recreators concentrate in these areas. Streams in these areas would have more use and more erosion of banks, altering riparian vegetation and the likelihood of human waste being deposited in the area.

OHV use can alter stream beds and riparian areas at OHV crossings. OHV use can also create turbidity at OHV crossings and contribute dust and sediment inputs to crossings. Both habitat alteration and sediment inputs degrade the quality of aquatic habitat.

Grazing can compact soils, remove vegetation, erode stream banks, and add nutrients (livestock manure) to water bodies. This would degrade habitat and degrade water quality for aquatic species by increasing water temperature through the reduction of riparian shade vegetation, increasing erosion and water turbidity, and potentially causing algae blooms and subsequent reduction in dissolved oxygen. Current BLM guidelines aim to minimize these impacts by, among several guidelines, restricting the time and seasonality of livestock grazing in riparian areas, and placing salt blocks and supplemental feed away from riparian areas. These impacts could be further reduced by requiring that livestock be excluded from streams and sensitive waterbodies and requiring a no-grazing buffer around these areas.

Water withdrawal for industrial/domestic purposes would reduce water quantity and potentially reduce aquatic habitat quantity. This, in turn, would impact water quality or degrade aquatic habitat quality.

Because many of the ACECs provide unique habitat, actions that degrade habitat quality or reduce habitat quantity in these areas would have a higher-magnitude impact.

Conservative management direction in riparian management areas would help reduce surface-disturbing activities and maintain riparian shade vegetation, thus reducing the potential for impacts on fish and aquatic species in these areas. Under all alternatives, the BLM would require that management actions, including those that could result in ground disturbance and vegetation removal, would not retard attainment of the Northwest Forest Plan (USDA and USDI 1994) Aquatic Conservation Strategy objectives. The objectives would help ensure protection of the aquatic systems by maintaining and restoring water quality, sediment regimes, and in-stream flows to support healthy riparian systems. Riparian management area widths would differ across the alternatives based on the type of aquatic feature and other factors, meaning that the size of the area that would be afforded incidental protections would also vary across the alternatives, as would the resulting potential for impacts on fish and aquatic species. Ultimately, there would not be an appreciable difference between the alternatives, in the BLM's ability to manage habitat for fish and aquatic species in riparian management areas while not retarding attainment of the Aquatic Conservation Strategy objectives.

Increased Vectors for Nonnative Species Introduction or Spread

Actions that would increase vectors for introduction or spread of nonnative species would impact aquatic species by changing community composition, adding competition for food resources, degrading food resources, or degrading aquatic habitat. These actions include ground-disturbing activities such as grazing, mineral development, timber harvest, as well as increased recreational use or OHV use.

The likelihood of this impact occurring would be decreased by implementing BMPs to require cleaning of machinery, tires (such as vehicles, bikes, and OHVs), and boots before entering BLM-administered lands and by requiring vehicles, bikes, and OHVs to stay on designated trails or roads. The likelihood would be further decreased by requiring that actions that result in ground disturbance (such as ROW development and timber harvest) draft and implement a revegetation plan that would rapidly revegetate with native species.

Alternative A

Alternative A would continue to have:

- the most miles of potential ROW, thus, the most miles of potential ground disturbance and development.
- the second-fewest acres closed to OHV use limited to existing and designated routes, thus protecting the remainder from disturbance or habitat degradation from OHVs less than Alternatives B and D.
- the second-highest acres available to grazing through active grazing allotments.
- the second-least acres of VRM Class I and II within the planning area, which would include limitations on vegetation manipulation that may harm fish species using that habitat.
- no acres managed for wilderness characteristics as a priority, meaning there would be no indirect benefit to aquatic species and habitat from potential measures protective of those characteristics.
- the second-fewest acres of ACECs and thus the second-fewest acres of lands that would include measures protective of potential habitat in ACECs.
- the most acres within designated, eligible, and suitable WSR corridors, which would generally be protective of potential aquatic species and habitat.

Based on the details above, Alternative A would have the second-highest overall impact on fish and aquatic habitat.

Table D-44
Effects to Fish and Lotic Aquatic Habitat

Action	Alternative A	Alternative B	Alternative C	Alternative D
Miles of stream available to grazing ¹	1,580	1,880	2,180	1,580
Miles of stream available for mineral leasing	4,510	3,480	4,060	3,690
Miles of stream available to mining	Locatable: 5,220 Mineral: 5,220	Locatable: 6,090 Mineral: 5,220	Locatable: 5,740 Mineral: 5,220	Locatable: 5,980 Mineral: 5,220
Miles of stream subject to potential concentrated recreation (SRMAs or ERMAs)	300	320	640	630
Miles of stream open to OHV crossings	2,460	2,380	2,470	2,450

Source: BLM GIS 2023

¹While these miles of stream acres located in areas available to livestock grazing, not all of these areas would fall into active grazing allotments. BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

Table D-45
Effects to Lentic Aquatic Habitat

Action	Alternative A	Alternative B	Alternative C	Alternative D
Acres of waterbodies recommended for withdrawal from locatable mineral entry	0	100	100	100
Acres of waterbodies available to grazing ¹	1,900	1,800	1,900	1,800
Acres of waterbodies open to OHV use	0	0	0	0
Acres of waterbodies available to OHV use limited to existing and designated routes	1,900	1,900	1,900	1,900

Source: BLM GIS 2023

¹While listed acres of waterbodies are located in areas available to livestock grazing, not all of these areas would fall into active grazing allotments. BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

Alternative B

Alternative B would have:

- the second-fewest miles of potential ROW, thus, the second-fewest miles of potential ground disturbance and development. This alternative would decrease the miles of potential ROW by 64 percent compared with Alternative A.
- the most acres closed to OHV use limited to existing and designated routes, increasing the acres available to this use from the existing management scenario. This would increase potential disturbance or habitat degradation from OHVs in the decision area compared with Alternative A.
- 232,800 acres would be available to livestock grazing; however, only 62,000 acres would fall within grazing allotments under Alternative B. Impacts on fish and aquatic species would be limited to

those areas within active allotments. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

- the most acres of VRM Class I and II within the decision area, which would include limitations on vegetation manipulation that may benefit fish species using that habitat.
- the most acres managed for wilderness characteristics as a priority, and a substantial increase from the existing condition, meaning there would be indirect benefits to aquatic species and habitat from potential measures protective of those characteristics.
- the most acres of ACECs and thus the most lands that would include measures protective of potential habitat in ACECs.
- the second-most overall acres within designated, eligible, and suitable WSR corridors, which would generally be protective of potential aquatic species and habitat. This alternative would decrease the overall acres within designated, eligible, and suitable WSR by less than one percent compared with Alternative A.

Based on the acreages of allocations and designations described above, Alternative B would have the fewest overall impacts on fish and aquatic habitat (tied with Alternative D).

Alternative C

Alternative C would have:

- the second-fewest miles of potential ROW, thus, the second-fewest miles of potential ground disturbance and development. This alternative would decrease the miles of potential ROW by 62 percent compared with Alternative A.
- the most acres available to OHV use limited to existing and designated routes (tied with Alternative D), increasing the acres available to this use from the existing management scenario. This would increase potential disturbance or habitat degradation from OHVs in the decision area.
- 271,800 acres would be available to livestock grazing; however, only 64,500 acres would fall within grazing allotments under Alternative C. Impacts on fish and aquatic species would be limited to those areas within active allotments. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.
- the fewest acres of VRM Class I and II within the planning area, which would include limitations on vegetation manipulation that may benefit fish species using that habitat. This alternative would decrease the acres of VRM Class I and II by 26 percent compared with Alternative A.
- the second-fewest acres managed for wilderness characteristics as a priority, though still an increase from the existing condition, meaning there would be indirect benefits to aquatic species and habitat from potential measures protective of those characteristics.
- the fewest acres of ACECs and, thus, the fewest lands that would include measures protective of potential habitat in ACECs.
- the fewest acres within designated, eligible, and suitable WSR corridors and thus, the fewest acres that would be generally protective of potential aquatic species and habitat.

Based on the acreages of allocations and designations described above, Alternative C would have the most overall impact on fish and aquatic habitat.

Alternative D

Alternative D would have:

- The fewest miles of potential ROW, thus, the fewest miles of potential ground disturbance and development. This alternative would decrease the miles of potential ROW by 65 percent compared with Alternative A.
- The second fewest acres available to OHV use limited to existing and designated routes, thus having the second fewest potential disturbance or habitat degradation impacts from OHVs in the decision area.
- 188,600 acres would be available to livestock grazing; however, only 59,000 acres would fall within grazing allotments under Alternative D. Impacts on fish and aquatic species would be limited to those areas within active allotments. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.
- The second-highest acres of VRM Class I and II within the planning area, which would include limitations on vegetation manipulation that may benefit fish species using that habitat. Alternative D would have 44 percent more acres of VRM Class I and II compared with Alternative A.
- The second-highest acres managed for wilderness characteristics as a priority, and a substantial increase from the existing condition, meaning there would be indirect benefits to aquatic species and habitat from potential measures protective of those characteristics.
- The second-highest acres of ACECs and, thus, the second-highest lands that would include measures protective of potential habitat in ACECs. This alternative would increase the acres of ACECs by 61 percent compared to Alternative A, and is one percent lower than Alternative B.
- The second-fewest acres within designated, eligible, and suitable WSR corridors and, thus, the second-fewest acres that would be generally protective of potential aquatic species and habitat. This would be a 31 percent reduction compared with Alternative A.

Based on the acreages of allocations and designations described above, Alternative D would have the fewest overall impacts on fish and aquatic habitat.

Cumulative Impacts

The alternatives, in combination with the trends and actions described in *Trends*, could exacerbate increasing water temperatures and the downward trend of native coldwater fish and invertebrates. These mechanisms include decreasing dissolved oxygen and increasing metabolic demands for native species, while potentially providing additional or improved habitat for non-native species. Improved connectivity will create a positive impact by increasing available food availability and refugia for fish and aquatic species as well as increasing gene flow between previously isolated populations.

Alternatives that provide the most protection of riparian areas, continue to maintain water flows (minimize diversions in summer), and the highest control of aquatic nonnative species would have the fewest impacts on fish and aquatic habitat.

As described in *Trends* above, stream temperatures are predominantly projected to increase for 2040 and 2080 (Isaak et al. 2016) as shown on **Map 3-10** and **Map 3-11** in **Appendix A**, respectively. However, some areas of colder streams are projected to maintain those colder temperatures through the next 60 years. All alternatives would provide the same level of protection for those areas (**Table D-46**).

Table D-46
Impacts in Projected Aquatic Thermal Refugia¹

Action	Alternative A	Alternative B	Alternative C	Alternative D
Miles of stream projected to be less than 10°C in 2040 open to mineral development (leasable, locatable, mineral materials) ²	0	0	0	0

¹ Areas available for grazing, open to OHV use, and mineral development (leasable, locatable, mineral materials) would not overlap with aquatic thermal refugia in 2080.

² Areas available for grazing and open to OHV use would not overlap with aquatic thermal refugia in 2040.

D.2.7 Coastal Resources and Management

Issue Statements

- How would the alternatives affect sea level rise and other coastal resources?

Affected Environment

Coastal resources, when present, are found within the coastal zone jurisdictional boundary of the California Coastal Commission delineated as part of the Coastal Zone Management Act of 1972. Under the California Coastal Commission, the coastal zone area generally extends inland up to 1,000 yards from the mean high tide line. In important coastal estuarine areas and areas with noteworthy coastal habitat or recreational areas it extends inland to the first major ridgeline paralleling the sea or five miles from the mean high tide line, whichever is less (Public Resources Code [PRC] Division 20 of the California Coastal Act, Section 30103). The NCIP coastal strip, while based on the California Coastal Commission coastal zone ecological parameters, does not include all of the California 'coastal zone' definition. In the NCIP planning area, the coastal strip is defined as "protected coastal habitats and resilient coastal systems of BLM-administered lands within 1,000 yards from the mean high tide line." It does not include the additional portion of the California Coastal Commission definition of land that extends inland to the first major ridgeline paralleling the seas or 5 miles from the mean high tide line, whichever is less.

The Northern California coast within the planning area extends from the Oregon border south to the City of Fort Bragg in Mendocino County. In general, the coast is rugged and remote, containing rocky headlands, sedimentary bluffs, and sandy shores. Embayments³ include Crescent City, Trinidad, Humboldt Bay, and Noyo Harbor. Humboldt Bay is an estuary that includes the mouths of six small watersheds and is the largest estuary in California north of San Francisco Bay. Communities along the NCIP coastal strip include Crescent City, Trinidad, Arcata, Eureka, Westport, and Fort Bragg. In general—and compared with most of the California coast—the coast within the planning area is sparsely populated and relatively undeveloped. The Humboldt Bay area is the most populated area of the NCIP coastal strip.

Although most of the lands along the California coast are private, the planning area contains an extensive network of public lands managed by federal, state, county, and city governments. These areas include Redwood National and State Parks, California State Parks (Pelican State Beach, Tolowa Dunes State Park, Del Norte Coast Redwoods State Park, Prairie Creek Redwoods State Park, Humboldt Lagoons State Park, Sue-meg State Park, Trinidad State Beach, and MacKerricher State Park), Eureka Dunes, Elk River Wildlife Sanctuary, Manila Community Services District, national wildlife refuges, as well as BLM-administered lands including the King Range NCA. BLM-administered coastal areas within the planning

³ An embayment is a recess in a coastline that forms a bay.

area provide popular recreational resources with a variety of uses. Hiking trails and broad vistas are present, while developed off-highway vehicle (OHV) use occurs at Samoa Dunes Recreation Area. Equestrian use occurs at Ma-le'i Dunes CMA and the Mike Thompson Wildlife Area, South Spit, Humboldt Bay. The Ma-le'i Dunes Cooperative Management Area (CMA) are a National Natural Landmark as of January 2021 and are managed cooperatively with USFWS staff at Humboldt Bay National Wildlife Refuge.

These coastal areas contain unique vegetation communities reflective of the dynamic coastal environment. With rising sea levels, these areas face unique threats including changes in coastal dunes and increased coastal bluff erosion. Along the north and south spits, the dune system separates Humboldt Bay and its surrounding agricultural lowlands from the Pacific Ocean. BLM-administered coastal resources on the Samoa Peninsula are potentially vulnerable to inundation from sea level rise associated with climate change. With 3 feet of sea level rise, 58 percent of the north and south jetties would be submerged. With 6 feet of sea level rise, 92 percent of the current artificial shoreline surrounding Humboldt Bay would be overtopped (Humboldt County 2018; Judge et al. 2017).

In an effort to preserve coastal resources and the communities and infrastructure they protect; BLM management actions strive to promote coastal resiliency to climate change and sea level rise. Resiliency is “the ability to prepare for, absorb, recover from, and successfully adapt to change,” where change can be physical, biological or ecological (NOAA Science Advisory Board 2022). Coastal resilience is the ability of the natural systems in the coastal environment to absorb, recover from, and successfully adapt to events including sea level rise, extreme weather events, and human impacts (Masselink and Lazarus 2019).

Coastal sand dunes are key dynamic natural structures which protect the coastal environment by absorbing energy from wind, tide and wave action. Evidence suggests that invasive European beach grass, in particular, restricts natural dune movement while coastal dunes dominated by native plants are better able to move inland in response to sea level rise while maintaining their integrity and protecting inland habitats and land uses (Hilgendorf et al. 2022; Friends of the Dunes 2023).

The western snowy plover (*Charadrius nivosus* ssp. *nivosus*) is a small shorebird that is federally listed as threatened under the Endangered Species Act (ESA). Western snowy plover Recovery Unit 2 stretches along the Del Norte, Humboldt, and Mendocino coastlines. The western snowy plover breeds primarily above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. In winter, western snowy plovers are found on many of the beaches used for nesting as well as on beaches where they do not nest. Habitat degradation caused by human disturbance, urban development, introduced beachgrass (*Ammophila* spp.), and expanding predator populations have resulted in a decline in active nesting areas and in the size of the breeding and wintering populations.

BLM-Administered Areas

Existing BLM-administered coastal resources include three areas on the Humboldt Bay North Spit and South Spit that are administered for recreation, protection and restoration of native dune habitat, protection of T&E species, and protection of prehistoric and historic cultural sites. These include Ma-le'i Dunes CMA, Samoa Dunes State Recreation Management Area (SRMA), and Mike Thompson Wildlife Area, South Spit, Humboldt Bay.

The BLM also administers the California Coastal National Monument, which includes approximately 1,000 acres of offshore rocks, reefs, and islands, and 7,924 onshore acres (BLM 2023a). Although the Monument is not administered under this RMP, future NCIP coastal strip land acquisitions, including some related to the Monument, could be added to this RMP. Potential future acquisitions of NCIP coastal strip resources could include dunes, headland, or other types of coastal habitats.

Ma-le'l Dunes Cooperative Management Area

The existing Ma-le'l Dunes CMA includes the former Manila Dunes area and is cooperatively managed with the USFWS. Ma-le'l Dunes North is administered by US Fish and Wildlife Service as part of the Humboldt Bay National Wildlife Refuge. The BLM-administered portion is approximately 150 acres in size and stretches along 1.5 miles of the Pacific Ocean coastline. The Ma-le'l Dunes CMA contains important cultural resources and a unique association of coastal dune, forest, wetland, and estuarine ecosystems that are bordered by a number of different land uses including a public shooting range and an inactive lumber mill. Visitor use at Ma-le'l Dunes CMA is lower than at Samoa Dunes or Mike Thompson Wildlife Area, South Spit, Humboldt Bay. Ma-le'l Dunes CMA offers hiking, beachcombing, and sightseeing along the waveslope; hiking and dogwalking trails, and equestrian use on the Lutguk Trail, waterline ROW and waveslope; and slough and shore fishing access. OHV use, firearms, hunting and gathering vegetation is prohibited (BLM 2023b).

Ma-le'l Dunes CMA is also managed for dune restoration, educational and research opportunities. Together with Lanphere Dunes to the north, they include some of the largest and best quality sand dune ecosystem representing coastal dunes in this area, and there has been extensive restoration of native dune mat habitat and western snowy plover habitat (California Coastal Conservancy 2008). Lanphere and Ma-le'l Dunes CMA were designated as a National Natural Landmark in 2021. The Manila Dunes Outstanding Natural Area and ACEC, which has been expanded through acquisition into the Ma-le'l Dunes CMA, includes unique coastal dune resources and provides opportunities for research and educational uses of unique dune ecosystems.

Mike Thompson Wildlife Area, South Spit, Humboldt Bay Cooperative Management Area

The existing South Spit CMA is approximately 800 acres in size.⁴ Within this area, there is a 630-acre area owned by CDFW and managed by BLM under a conservation easement (CDFW 2023b). Within the conservation easement, an approximately 51-acre Habitat Restoration Area is closed to all uses during snowy plover nesting season (March 1 through September 15). In addition, dune restoration areas are closed to vehicle use. South Spit CMA also includes cultural sites meaningful to the Wiyot people.

This area includes 4.5 miles of beach, dunes and marsh trails that are available for hiking. Limited OHV and horseback riding are allowed only on the west side of South Jetty Road on designated access corridors and waveslope. The majority of the area is open to waterfowl and upland game bird hunting.

Samoa Dunes SRMA

The existing Samoa Dunes SRMA is approximately 300 acres in size and is the primary area for OHV recreation on the Samoa Peninsula. Under current conditions, approximately 125 acres are open to OHV

⁴ Lands associated with South Spit ACEC are not currently owned by BLM. However, if acquisition by BLM were to occur the lands would be managed as an ACEC.

use. In addition to OHV use, recreation activities include fishing, hiking, sightseeing, beachcombing, wildlife viewing, nature study and picnicking.

Samoa Dunes includes a 40-acre Endangered Plant Protection Area that is closed to public use and a 140-acre Wetland Protection Area that is closed to motorized vehicles. Samoa Dunes includes cultural sites important to the Wiyot people, and also includes the remains of the historic Humboldt Harbor Lighthouse, and numerous World War 2-era ammunition bunkers.

Samoa Dunes Recreation Area includes a 40-acre area that has been set aside for the protection and research of native plants with an emphasis on the endangered Menzie's wallflower (*Erysimum menziesii*). Samoa Dunes also includes 295 acres open for OHV riding, hiking trails through the wetland protection area, and fishing access from the jetty.

Current Conditions

Current conditions characterize the status of physical processes operating in the coastal environment, characteristics of human use and special habitats found only in these coastal areas.

Sea Level Rise

Coastal resources are threatened by rising sea levels. This threat may vary along the coast within the planning area. For example, coastal lands surrounding Humboldt Bay are highly vulnerable to rising sea level. Conversely, steep, rocky coastal areas may be less impacted by rising sea levels (UC San Diego and Scripps Institute of Oceanography 2022). For Humboldt Bay, where much of the coastal resources planning area lands are situated, sea level rise is compounded by tectonic subsidence. Along the Northern California coastline, patterns of uplift and subsidence are complex and not well understood. Using tidal records from the North Spit, since 1977, Humboldt Bay is subsiding, and its average rate of relative sea level rise is 4.73 millimeters per year (18.6 inches per century). This is greater than anywhere else in California (Laird 2018). Adjacent landownership may also influence vulnerability by limiting options for the migration of species and natural coastal processes. The resilience of coastal areas is important for inland communities as landforms and vegetation communities may be able to buffer some of the impacts of ongoing sea level rise. For example, dune systems may be able to migrate and retain some level of separation between the dynamic beach environment and more developed inland areas. Sea level rise is ongoing along the coastal areas. Coastal erosion is prominent along the coastal bluffs, where weak rocks are vulnerable to wave erosion. Large landslides are frequent in the area.

Coastal dunes, particularly those surrounding the Humboldt Bay area, provide a buffer to rising sea levels. Sea level rise, increased storm severity, and associated storm surges and large waves are causing an increase in coastal erosion. Recent El Niño events, particularly during the winter of 2015/2016, produced extensive beach and dune erosion along the margins of Humboldt Bay. This erosion has encroached into the Samoa Dunes riding area, toppling boundary fences and making beach access difficult in places due to the steep scarping that occurred along the foredunes. The high tides from the 2015-2016 El Niño storms were over 1 foot above predicted levels. These combinations of higher-than-expected tides and large waves continue to change the beach and dune environments through a combination of erosion and deposition.

Coastal Habitat and Restoration

Healthy coastal habitats, primarily coastal salt marshes, mangrove swamps and seagrass beds, play an important role in reducing climate change by absorbing large quantities of greenhouse gas carbon dioxide from the atmosphere and storing it. This decreases the global warming effects of emissions from human petroleum use and wildfires (NOAA 2023). The carbon dioxide captured by the world's coastal and ocean ecosystems is termed "blue carbon." Coastal habitats, including sea grasses and salt marshes, sequester blue carbon at a rapid pace, taking it out of the air and storing it below ground which acts as a carbon sink. Coastal habitat conservation is important to protect these habitats and keep the stored carbon from being returned to the atmosphere (NOAA 2023).

Coastal sand dunes form protective barriers, protecting both natural resources and man-made infrastructure behind them. The dunes closest to the ocean are called foredunes. In the natural course of events, coastal habitats such as beaches and foredunes will migrate in response to wave, tidal and wind action. Beaches respond seasonally, often being built up by wave and wind action during the summer months and eroded during winter storms. Dunes respond to changes more slowly so that changes to dunes are frequently studied over years or decades (Crooks 2004; Rader 2017)

Foredunes are created by wind-driven movement of sand. The size and shape of foredunes will change with disturbances from human activities, recreation, changes in vegetation, and high energy storm events. The amount and type of vegetation makes a difference in the size and shape of the foredunes. Many of the coastal dunes in the vicinity of Humboldt Bay were historically planted with invasive European beachgrass (*Ammophila arenaria*) in an effort to stabilize them. European beachgrass forms dense vegetation on the dunes and has the effect of trapping sand at the toe and on the seaward side of the dune and allowing a minimal amount of sand to travel over the top. The result is that the foredune is locked in place and is not able to travel or react to changes in sea level (Zarnetske et al. 2012; McDonald 2015; Pickart 2020; Pickart et al. 2021; Friends of the Dunes 2023).

Restoration projects have replanted foredunes with native species including native dune grass (*Elymus mollis* Trin) and native dune mat vegetation. Subsequent studies evaluating the condition, shape and height of the dunes show that dunes planted with native vegetation are more resilient, being more able to maintain their integrity and protect inland habitat and land uses while maintaining an ability to move and shift in response to sea level rise (McDonald 2015; Judge et al. 2017; Pickart 2020; Denoncourt et al. 2021; Pickart et al. 2021; Hilgendorf et al 2022; Friends of the Dunes 2023).

In addition to showing more resiliency to sea level rise, native dune vegetation has been found to host a greater abundance, richness and diversity of insects compared with European beachgrass communities. Several studies have found that dunes restored with native vegetation had a greater abundance of species, including pollinators such as native bumblebees and a greater diversity of insect species compared with dunes with nonnative vegetation (Reading et al. 2022).

The numbers of nonnative species and the extent of areas affected by nonnative species in coastal dunes have been increasing over the past several decades. Locally, though, several cooperative efforts have increased the areal extent of the dune mat habitat. This trend towards restoration of the dunes is expected to continue in the short term, and various agencies manage lands to promote native species and ecosystems.

Invasive species—primarily European beach grass (*Ammophila arenaria*) along with English ivy, ice plant, and yellow bush lupine—are common in coastal dune areas within the planning area. These species—especially European beach grass—have invaded dune niches along the north and south spits of Humboldt Bay. These species displace at least six federally listed endangered plant populations on the California coastal dunes. The BLM actively manages invasive species in the planning area to maintain and restore coastal dune mat habitat.

Extensive restoration efforts have occurred along the Mike Thompson Wildlife Area, South Spit, Humboldt Bay, Samoa Dunes, and Ma-le'l Dunes CMA. These efforts have focused on the restoration of the native dune mat habitat and snowy plover habitat. Ma-le'l Dunes CMA contains extremely rare dune mat habitat. In some cases, these areas are subject to special management considerations or closures. Several protected areas are designated along the coast to protect native flora and fauna. These include:

Mike Thompson Wildlife Area, South Spit, Humboldt Bay. A 20-acre restoration area along the south spit is closed to all public use. Temporary closures may be implemented to protect nesting snowy plovers.

Samoa Dunes Recreation Area Vegetation Enclosure. Samoa Dunes has two areas that are closed to all recreation. The northeastern-most 40 acres of the Samoa Dunes recreation area has been set aside for the protection and research of native plants with an emphasis on the endangered Menzie's wallflower (*Erysimum menziesii*). In addition, Samoa Dunes SRMA includes a wetland area that is closed to OHV use but contains a hiking trail.

Ma-le'l Dunes CMA includes the Manila Dunes Outstanding Natural Area and ACEC. Hiking and equestrian use is allowed only on designated trails to protect vulnerable dune mat habitats,

Recreation

Coastal areas routinely receive high visitor use. Visitors use surveys for the majority of BLM-administered coastal areas reveal a diversity of users (Martin 2016). Hiking/walking, wildlife viewing, and dog walking were listed as the most common uses of the coastal areas. However, the areas also provide equestrian and OHV access and provide for additional activities such as fishing, surfing, and biking (see Recreation and Accessibility below and **Table B-1** in **Appendix B** for allowable uses in the current coastal access areas). Experiencing natural surroundings and enjoying the area's wildlife, scenery, views, and aesthetics were rated as the two most important reasons for people visiting the BLM coastal sites (Martin 2016).

Recreation is the dominant use across the coastal areas. The North and South jetties created the channel connecting Humboldt Bay to the ocean. These jetty areas provide access to anglers, hikers, and surfers. Along the Mike Thompson Wildlife Area, South Spit, Humboldt Bay, dispersed recreation occurs with limited vehicles and equestrian access to the waveslope via designated routes across the dunes. The Samoa Dunes Recreation Area is a popular OHV off-road riding area, particularly during the summer. The Ma-le'l Dunes CMA provides equestrian and hiker access (see **Table D-47**).

Visitor use and recreation are expected to increase along the coast with increasing population. Any effects of climate change that produce an increase in the number of days that inland areas experience extreme heat conditions would likely result in episodes of increased coastal recreation from people seeking temporary relief from extreme heat.

Table D-47
Existing Access and Recreational Uses at Coastal Access Sites in the NCIP Planning Area

Site	Hiking	Equestrian	OHV	Vehicle	Dogs	Mountain Biking	Camping	Hunting/Fishing
Mike Thompson Wildlife Area, South Spit, Humboldt Bay CMA	4.5 miles of beach, dunes, and marsh	Horses are allowed on the ocean side of South Jetty Road	None	Vehicles allowed on the waveslope only. Must enter through the designated access corridors and obey the 15 miles per hour speed limit. Waveslope adjacent to western snowy plover habitat restoration area (1 mile south of jetty) is closed from Mar 1 to Sept 5.	Must be leashed between March 1 and Sept 15 on the ocean side of South Jetty Road.	None	None	Waterfowl hunting (Oct–Jan): 9 access spurs along bay side of South Jetty Rd. Fishing is very popular and regulated by the CDFW (“free” from the jetty if surrounded by water on three sides).
Samoa Dunes	Hiking trail through wetland protection area	None	295 acres open for OHV riding (see regulations)	Allowed on roads and beach	Leashed in parking lot; voice control elsewhere	None	None	Fishing is very popular and regulated by the CDFW (“free” from the jetty if surrounded by water on three sides).
Ma-le’l Dunes CMA	Miles of trails	Allowed on Lutguk trail, waterline ROW and the waveslope	None	Allowed on South parking daily; North parking lot Friday-Monday	Allowed only in Ma-le’l South. Leashed in parking lot; voice control on trails	None	None	No hunting; fishing is regulated by the CDFW. Slough access from North parking lot; shore fishing is allowed outside of the Samoa State Marine Conservation Area.

Land Tenure – ROW Management

Under existing conditions, the Manila Dunes includes existing ROWs for water facilities and pipelines of Humboldt Bay Municipal Water District and Manila Community Services District (BLM 2022a). In addition, the USACE has a temporary and periodic ROW for maintenance of the North Jetty.

Land Acquisition

Development along the immediate coastline is not expected to increase in the near term. Observed and forecast sea level rise is expected to reduce development along low-lying coastal areas. The NCIP planning area contains approximately 1,000 acres of existing coastal terrain. Future purchases by BLM are likely to expand the range of coastal resources in the planning area.

Environmental Consequences

This section addresses impacts on coastal resources from management actions discussed in **Table B-1** in **Appendix B**, including all areas within the Coastal Commission boundary. The NCIP coastal strip is assumed to extend 1,000 feet from mean high tide.

Actions that disturb or degrade coastal resources or disrupt the habitat of flora or fauna that utilize coastal features such as dunes and beaches are considered adverse. Actions that avoid or prevent adverse impacts are considered beneficial. Actions that increase the amount of resilient dune habitat, such as dune restoration and purchasing property to assure continuity of habitat are considered beneficial. Risks to coastal resources would result from any activities associated with surface disturbance, particularly those within sensitive habitat, such as dune mat habitat and snowy plover nesting habitat. The largest risk of surface disturbance to coastal resources is from recreation, particularly OHV use.

Coastal areas provide unique opportunities and environments for a wide variety of recreation pursuits. Recreation can also have a damaging effect on coastal resources. Actions that enhance coastal recreation opportunities that are also consistent with management and restoration goals are considered beneficial.

Damage to coastal resources could also occur from climate change and sea level rise from high force wave events, inundation, erosion, and dune migration. Sea level rise causes ground disturbance and has the potential to inundate BLM-administered coastal beaches and dune resources in the planning area. Actions that decrease resiliency to climate change are considered adverse. Actions that increase resiliency of coastal resources to climate change are considered beneficial.

Impacts of Coastal Resources Actions on Coastal Resources

Coastal resource management would include allowing and managing recreational access, particularly OHV and equestrian use; dune research and restoration activities; wildlife protection activities, particularly snowy plover nesting and dune mat habitat; and management of other ground-disturbing activities such as ROW access, minerals development, and land tenure decisions. In general, ground-disturbing actions have the potential to negatively impact coastal habitats, particularly dune mat habitats, by removing or damaging native plants and introducing noxious weeds. Removal of native vegetation has the potential to destabilize dunes. Introduction of noxious weeds, in particular European beach grass, can negatively affect dune habitat and reduce the ability for dune migration in the event of sea level rise (Pickart 2020; Denoncourt et al. 2021; Pickart et al. 2021). Research and revegetation actions would have beneficial impacts on coastal resources by improving native habitat and resiliency to climate change.

Actions Related to Resilience to Climate Change and Sea Level Rise

Alternative A does not include specific actions to combat climate change and sea level rise. Current practices include collaboration with other organizations to conduct research, and cooperative management of the Manila Dunes (part of Ma-le'l Dunes CMA) to enhance natural values and facilitate research and education of dunes ecosystems. There is ongoing research to understand dune migration factors (Friends of the Dunes 2023).

Under Alternatives B through D, BLM would collaborate with partners to increase their understanding of the effects of sea level rise on coastal resources and implement management actions that are consistent with promoting resilient coastal systems in the face of rising sea levels and changing climate. (1) Collaborative efforts fall into two broad categories: those that would protect or restore coastal areas and (2) those actions that cause risk of disturbance to those resources.

Activities that would protect or restore coastal areas include: managing coastal dunes in a manner that provides resiliency to rising sea levels; managing natural dune formations to prevent degradation from unauthorized OHV use and alteration from nonnative and invasive species; maximizing opportunities for conservation and restoration of soft ecological barriers such as tidal wetlands where such habitats are the highest and best use relative to trends in sea level rise; monitoring physical and biological responses of dunes systems to sea level rise and climate change to better understand natural values and processes; monitoring cultural resources for change indicating potential loss; monitoring dune function and implementing vegetation treatments as necessary to maintain that function; implementing restoration of salt marsh and mud flats on acquired lands and acquiring lands at risk of sea level rise that have the potential to provide habitat; and revegetation activities to promote sediment movement through coastal systems. These actions would have overall beneficial effects on coastal resources by increasing resiliency of dune and coastal marsh ecosystems, preventing degradation of coastal dunes, improving dune function and allowing dune retreat in response to sea level rise, and increasing the carbon sequestration ability of salt marsh habitats. Land acquisitions under Alternative B would focus on lands for management of tidal wetlands and dune migration areas, as well as lands for sea level inundation and tracts behind at-risk sea levees. Therefore, Alternative B would be the most protective of coastal resources. Under Alternative C, acquisitions would focus on lands with low habitat value and therefore suitable for recreation. Therefore, Alternative C would be the least protective of coastal resources. Acquisitions under Alternative D would include both types of lands, therefore Alternative D would likely be more protective than Alternative A, but in between Alternatives B and C.

Activities that would cause risk of disturbance to coastal resources include relocating recreational facilities as needed in response to sea level rise; decommissioning roads as necessary for public safety; decommissioning recreational facilities if public access/recreation access/habitat restoration become unattainable due to sea level rise; and developing recreational facilities that are most appropriate to the future condition. These activities would result in damage to coastal resources from physical removal of existing infrastructure resulting in surface disturbance and erosion and runoff of sediment into coastal waters. In addition, development of new recreation facilities, as well as access roads and other new infrastructure, would have negative effects related to ground disturbance during construction, as well as ground disturbance related to recreation activities, particularly OHV use.

Actions Related to Recreation and OHV Travel

Under Alternative A, Samoa Dunes is currently operated as an SRMA and includes 200 acres open to OHV travel. Ma-le'i Dunes ACEC, which includes Manila Dunes ONA/ACEC, includes 100 acres open to limited OHV travel. Mike Thompson Wildlife Area, South Spit, Humboldt Bay (600 acres) is managed as OHV limited, with the exception of 20 acres of snowy plover nesting habitat which is closed to all recreation. Under Alternative B, the Samoa Dunes would be operated as an ERMA, with a designated riding area of 200 acres open to OHV travel. Ma-le'i Dunes ACEC (200 acres) would be closed to OHV travel. Mike Thompson Wildlife Area, South Spit, Humboldt Bay (600 acres) would be managed as OHV limited. Under Alternative C, the Samoa Dunes would be operated as an SRMA, with a riding area of 200 acres open to OHV travel. For Ma-le'i Dunes ACEC, all 200 acres would be closed to OHV travel. Mike Thompson Wildlife Area, South Spit, Humboldt Bay would be managed as OHV limited. Under Alternative D, Ma-le'i Dunes ACEC would be managed as OHV closed and Mike Thompson Wildlife Area, South Spit vehicle wave slope access may be restricted as necessary to protect nesting plovers and/or plover habitat. OHV management would be the same as Alternative C for the remaining BLM-administered lands. (see **Table D-48**).

Table D-48
Acres of Management of OHV Travel in Coastal Resources

OHV Use Level	Alternative A	Alternative B	Alternative C	Alternative D
Open	200	200	200	200
Closed	0	200	200	200
Limited	800	600	600	600
Totals	1,000	1,000	1,000	1,000

¹Acres are rounded to the nearest 100.

Impacts Common to All Alternatives

Most direct and indirect impacts on BLM-administered coastal resources in the planning area would result from surface disturbances and sea level rise. The majority of surface disturbances could occur from recreation including OHV travel, dog walking, hiking, fishing, hunting, surfing, and equestrian use; and clearing for land development, particularly ROWs. Surface disturbance from sea level rise and climate change could include inundation, damage to dune ecosystems, and beach erosion from increases in storm surge and wave force and increases in the height of high tides. The greater the amount of inundation and wave action, the greater the potential for impacts on coastal resource areas.

Management actions that increase the amount of restored native dune habitat within coastal resource areas would have both direct and indirect beneficial impacts on coastal resources. Restoration projects would increase the ability of dunes to move and shift in response to sea level rise which would protect inland habitat and land uses.

Recreational management decisions would have both beneficial and adverse impacts on coastal resources. The impacts associated with increased visitation to coastal areas would include degradation of unique and/or fragile dune mat habitat, predation on snowy plover nests by dogs, an increase in trash and litter, and damage to coastal dunes from erosion and compaction resulting from OHV use. **Table D-48** provides a comparison of the alternatives in terms of acreage of coastal zone managed as OHV open, closed, or limited. Public recreational access, including OHV access, would also result in a greater risk of trash left by visitors to the coastal strip with resulting pollution of dunes, beaches, wetlands, estuaries, and ocean

waters. Trash would also attract predators to snowy plover habitat. Introduction of invasive plants from OHV use could damage native habitats including dune mat habitat. This could indirectly reduce species diversity in the coastal strip. The closure of some areas that include sensitive habitat to recreation would minimize potential damage to dune mats, and snowy plover habitat.

OHV use would likely present the largest amount of surface disturbance to coastal resources. In general, as OHV use increases, adverse impacts on coastal habitats would potentially increase as well. OHV use would increase the potential for impacts on coastal vegetation and landforms, such as erosion of dunes, disturbance and crushing of native and nonnative plant communities, and the spread of noxious weeds and invasive plants. OHV limited areas (where OHV use is allowed but only on designated routes) would have fewer impacts on coastal habitats than OHV open areas related to land and vegetation disturbance but may still import noxious weeds and trash and create noise impacts for sensitive receptors in surrounding coastal areas.

Alternative A

Under Alternative A, the Arcata RMP 1992 seeks to expand cooperative research and management in the Manila Dunes, enhance natural values, and facilitate research and educational uses of unique dune ecosystems. Under existing recreation management, 0 acres in the coastal resources planning area are closed to OHV use, whereas 200 acres are open, and 800 acres are managed as OHV limited (see **Table D-48**). Samoa Dunes is operated as an SRMA, which puts a higher emphasis on protecting recreation over other resource considerations.

Alternative A does not include specific actions for coastal resilience to sea level rise or for decommissioning or relocation of facilities in response to sea level rise.

Alternatives B through D

Under Alternatives B, C and D, important resources in the coastal strip would be protected from motorized recreation or non-motorized visitation with fencing, signs, and vegetative barriers, including snowy plover nesting habitat, vulnerable areas for critically imperiled plant communities, wetland marsh, Waters of the U.S., and cultural resources. In addition, recreation development outside of existing RMAs would not occur where there is the potential to compromise of natural and cultural resources. Accordingly, these alternatives would be more protective than Alternative A and would reduce risks from disturbance related to recreation activities.

These directives also include actions to monitor and respond to climate change and sea level rise, both by hardening coastal habitats as feasible and decommissioning or moving roads and recreation resources as necessary. Improved habitat protection and research, restoration and revegetation activities would have beneficial effects on coastal resources compared with Alternative A in that they would provide for a more resilient coastline that would be better able to react to a changing climate.

Alternative B

Management prescriptions related to recreational development would be more protective of coastal resources than Alternative A. Under this alternative, recreational development within the coastal strip would not be allowed unless it promotes habitat resiliency. Management prescriptions related to OHV travel would also be more protective of coastal resources than Alternative A. Samoa Dunes would be operated as an ERMA, which would require managing the recreation area with a focus on resource

protection issues as well as visitor health and safety and user conflict issues. Ma-le'I Dunes ACEC would be closed to OHV use which would increase protection of sensitive habitat including dune mat habitat. In addition, newly acquired lands within the coastal strip would be managed as OHV closed. OHV use would be directed to and encouraged in areas where it is consistent with, or where it could assist with management and restoration goals. This would increase overall coastal resource protection, by removing 200 acres from OHV use and emphasizing resource protection in recreation use decisions. The emphasis on management and restoration goals would have a beneficial impact on newly acquired coastal resources. Overall, land disturbance would be reduced, and beneficial impacts would be improved compared with Alternative A. Accordingly, Alternative B would provide for the greatest potential for acquisition and restoration of coastal resources, which would protect sensitive habitat and provide for a more resilient coastline that would be better able to react to a changing climate.

Alternative C

Under Alternative C, acreages for OHV open, closed and limited travel would be the same as Alternative B (see **Table D-48**). Samoa Dunes would be operated as an SRMA and recreation impacts per acre there would be similar to Alternative A, and less protective than Alternative B. Recreational development outside of existing RMAs would be allowed in the coastal strip if they would not result in adverse impacts on natural and cultural resources.

In addition, newly acquired lands within the coastal strip would be managed as OHV limited. OHV use would be directed to and encouraged in areas where it is consistent with, or where it could assist with management and restoration goals. Alternative C has a greater focus on providing recreation and other human access, therefore it would have greater negative impacts related to ground disturbance, habitat disruption, and dune health than Alternatives A or B. It would be more protective than Alternative A for newly acquired lands, in that the decision for OHV use areas would be guided by management and restoration goals.

Alternative D

Under Alternative D, actions and impacts related to OHV use would be the same as Alternative C with the following exception. Ma-le'I Dunes ACEC would be managed as OHV closed. Acquisition of coastal areas would prioritize both lands to offset sea level rise and lands for recreation. This alternative would be more protective of coastal resources than Alternative C, but less protective than Alternatives A and B.

Cumulative Impacts

Reasonably foreseeable future actions and conditions within the planning area include vegetation changes and increased inundation, storm frequency and beach damage related to climate change; increase in visitation to recreation areas related to increasing population and climate change; and an increase in e-bike use on BLM-administered trails that may result in erosion and habitat damage that could affect coastal resources. Conversely, discovery and subsequent inventory of historic properties would protect coastal resources.

Outside the planning area, continued coordination with other entities in research and education related to climate change, sea level rise, coastal inundation, and coastal habitat would have beneficial effects for all coastal resources. Alternatives A, B, C, and D would contribute incrementally to the beneficial impacts through allowance of similar activities. Conversely, increased population and temperatures are likely to

result in increased pressure on recreation and land development in all coastal areas, which would increase disturbance to coastal areas and habitats. These impacts would be offset to an extent by requirements of the California Coastal Commission that preclude disturbance or damage to coastal resources. Alternatives A, B, C, and D would contribute incrementally to the impacts through allowance of similar activities, and impacts would be similarly offset by requirements for protective measures.

Impacts of Areas of Critical Environmental Concern (ACEC) Actions on Coastal Resources

Impacts Common to All Alternatives

Under all management alternatives, coastal area ACECs would be managed to protect the relevant and important values for which the ACEC is designated and would generally reduce long-term impacts on coastal resources that occur within their boundaries. Coastal ACECs with substantial acreage open to surface-disturbing activities, particularly OHV recreation, would be most susceptible to negative impacts upon coastal resources. ACEC designation would be beneficial to coastal resources as it would generally confer protection on the biological habitats and cultural resources located in the ACEC. This would have the effect of conferring protection on coastal resource lands, including dunes and beaches. Coastal areas proposed as ACECs and associated acreages vary among alternatives and are presented in **Table D-49**.

Table D-49
Acres of Coastal Resources Protected as ACECs

ACEC by Resource	Alternative A	Alternative B	Alternative C	Alternative D
Manila Dunes	100	0	0	0
Ma-le'I Dunes ACEC	0	200	200	200
Mike Thompson Wildlife Area, South Spit, Humboldt Bay	0	600	0	600
Totals	100	800	200	800

¹Acres are rounded to the nearest 100.

Alternative A

Under Alternative A, current ACEC designations would continue as outlined in the 1992 Arcata RMP (BLM 1992), the 1995 Environmental Assessment and Land Use Decision Amendment for the Samoa Peninsula Management Area (BLM 1995a) and the Ma-le'I Dunes Cooperative Management Area Public Access Plan (State Coastal Conservancy 2008). One existing coastal ACEC totaling 100 acres (see **Table D-49**) would continue to be managed under this alternative with no additional coastal ACECs designated. Under this alternative, the entire ACEC would be open to limited OHV use, closed to leasable mineral exploration and development, and saleable mineral development in order to protect T&E species. Adverse impacts on coastal resources, as described above, would be minimized within the ACEC.

Alternative B

Overall, Alternative B would be more protective of coastal resources than Alternative A. Under Alternative B, the Ma-le'I Dunes ACEC would be managed to protect sensitive plant and wetland habitat and cultural resources. Two coastal ACECs totaling 800 acres (see **Table D-49**) would be protected as ACEC lands, representing a large increase (700 acres or seven times the acreage) designated as a coastal ACEC compared with Alternative A. Under this alternative, allowable and proscribed activities would be better defined compared with Alternative A, offering more protection from ground-disturbing activities. Adverse impacts, such as erosion, dune and habitat disturbance and degradation, as well as vegetation removal, would be minimized within these ACECs. This alternative would prioritize the acquisition of

coastal lands nearby coastal ACECs to add protection of sensitive resources, which would serve to protect additional coastal resources resulting in a beneficial impact on coastal resources.

Under Alternatives B, C and D, regulation of ground-disturbing activities would be better defined than under Alternative A which would generally reduce surface-disturbing impacts on coastal resources within their boundaries and be beneficial. Regulations would include:

- use of heavy equipment would require approval of Authorized Officer,
- fire and fuels management would be conducted to maintain ACEC relevance and importance values,
- prioritize ACECs for access for scientific research
- ground-disturbing activities would be allowed only if consistent with ACEC relevance and importance would regulate and reduce the level of ground disturbance at ACEC sites
- surface disturbances, such as use of metal detectors, would not be allowed for ACECs with identified cultural values.

Alternative C

Under Alternative C, one coastal ACEC totaling 200 acres (see **Table D-49**) would be protected as ACEC land. This alternative represents a doubling of ACEC acreage over Alternative A. Coastal ACEC lands would receive the same protections as described above and in Alternatives B and D. Overall, Alternative C would be more protective of coastal resources than Alternative A, but less protective than Alternatives B and D.

Alternative D

Under Alternative D, two coastal areas totaling 800 acres (see **Table D-49**) would be managed as ACECs, a 700 acre increase in the areas managed to protect coastal resources from Alternative A. Under this alternative, allowable and proscribed activities would be better defined compared with Alternative A, offering more protection from ground-disturbing activities. Adverse impacts, such as erosion, dune and habitat disturbance and degradation, as well as vegetation removal, would be minimized within these ACECs. This alternative would prioritize the acquisition of coastal lands nearby coastal ACECs to add protection of sensitive resources, which would serve to protect additional coastal resources resulting in a beneficial impact on coastal resources.

Impacts of Climate Change Actions on Coastal Resources

Impacts Common to All Alternatives

BLM-administered coastal resources on the Samoa Peninsula are potentially vulnerable to inundation from sea level rise associated with climate change (Humboldt County 2018). Climate change actions which increase resilience of coastal habitats to sea level rise would have beneficial effects on coastal resources (Denoncourt et al. 2021). Proposed actions which favor coastal resources include managing coastal dunes in a manner that provides resiliency to rising sea levels; managing natural dune formations to prevent degradation from unauthorized OHV use and alteration from nonnative and invasive species; maximizing opportunities for conservation and restoration of soft ecological barriers; managing natural dune formations to prevent degradation from unauthorized OHV use, and alteration from nonnative and invasive species; and, where suitable, maximizing opportunities for conservation and restoration of soft

ecological barriers such as tidal wetlands where such habitats are the highest and best use relative to trends in sea level rise.

Alternative A

The Arcata RMP 1992 does not address management actions related to sea level rise or climate change. The BLM has instituted coastal dune restoration measures on approximately 150 acres of dune habitat. Dune restoration with native vegetation increases resilience of dune habitat and allows dunes to migrate with changes in sea level, which has a beneficial effect on coastal resources.

Alternative B

Alternatives B through D include proposed management actions to address climate change. These include: coordination with other agencies and Tribes to identify climate-vulnerable vegetation communities and to adaptively manage those communities to maximize climate resiliency; managing BLM lands to provide for carbon sequestration where appropriate; collaborating with academic researchers on research related to carbon dynamics on the landscape; considering climatic shifts in vegetation when planning restoration plantings; acquiring land as appropriate to manage for coastal resiliency, including lands that provide for expansion of tidal wetland areas and areas of dune migration, and tracts behind at-risk levees; monitoring habitat conditions and reassessing seasonal restrictions for wildlife, water quality, or other resource values based on climate change; and reevaluating existing seasonal closures based on adaptive management to reflect changing climatic conditions. Acquiring land for expansion of tidal wetlands could increase the available amount of carbon sequestration. These management actions increase the emphasis on managing habitat for climate change and sea level rise, and would therefore be more protective of coastal resources than Alternative A.

Management actions under Alternative B would prioritize actions that promote habitat connectivity. Coastal resources would be managed with consideration of rising sea levels, and with a priority on the protection for snowy plovers and other nesting birds and establishment of non-developed areas, with sufficient land and without vehicles, that allow for the gradual retreat of plant and animal communities as sea levels rise. Research and adaptive management of vegetation communities would improve the success of restoration activities and result coastal lands that are more resilient to climate change. BLM assumes that many coastal areas in the vicinity of Humboldt Bay will be inundated over time, and the proposed management activities would maximize the ability of coastal areas to move and adapt to the change in sea level. This alternative does not include consideration of recreational access, and therefore would be the most protective of coastal resources.

Alternative C

Management actions under Alternative C would prioritize actions that promote active vegetation management to promote ecosystem resiliency to large disturbances. Coastal resources would be managed with consideration of rising sea levels to provide for protection of snowy plovers and other species as well as recreational access to those coastal areas for either motorized or non-motorized recreation, as consistent with resource objectives. This alternative would prioritize acquisition of coastal areas or work with partners to acquire lands with dunes dominated by nonnative vegetation and low potential for restoration and make these areas available for recreational use. This would include equestrian and OHV use through implementation level travel planning. This alternative includes a priority for recreational access, including OHV access. Managing land for recreation would result in fewer acquisitions for coastal resiliency, less dune stability, and less of an ability for climactic shifts in vegetation. It would still include

coordination with other agencies and research into and application of adaptive management strategies for sensitive vegetation communities. Therefore, Alternative C would be more protective than Alternative A, but would be the least protective of Alternatives B through D.

Alternative D

Management actions under Alternative D would prioritize actions that promote habitat connectivity and active vegetation management to promote ecosystem resiliency to large disturbances. Coastal resources would be managed with consideration of (a) listed species such as snowy plovers and beach layia, b) the reformative and recolonization processes of listed animal habitat and plant communities along impacted shorelines, and c) accommodating recreational non-motorized or motorized access consistent with a and b, above. This alternative would prioritize acquisition of coastal areas including lands for management of tidal wetland areas; areas of dune migration; areas of sea level inundation; tracts behind at-risk levees; and lands with dunes dominated by nonnative vegetation and low potential for restoration and make these areas available for recreational use (including equestrian and OHV use) through future implementation-level planning.

This alternative includes a greater emphasis than Alternative B on restoration of coastal habitats while still accommodating recreational access, and therefore would be more protective than Alternatives A or C, but would be less protective than Alternative B.

Impacts of Travel and Transportation Management Actions on Coastal Resources

Impacts Common to All Alternatives

Under all alternatives, part of one coastal resource area (Samoa Dunes) would be open to OHV use. OHV travel has a detrimental effect on dune form and ecology and native habitat, causing soil erosion, degradation of dune structure, soil compaction, water quality degradation, and damage to native plants and animals. OHV limited use, where OHV use is allowed but limited to designated routes, is less detrimental to sensitive habitats. It is less likely to degrade dune structure, cause direct damage to ecology or native habitat, or cause soil erosion. It is still likely to introduce nonnative plants, trash, and noise to sensitive areas.

Direct impacts on coastal resources would be from OHVs that directly crush and destroy vegetation, and directly cause dune erosion. Indirect impacts from travel and recreation would primarily be physical impacts on soils, dune sands, and loss of existing plants. The presence of OHVs would create disturbance conditions that would favor dune erosion, and establishment and spread of invasive weeds. Damage from off-road e-bike use would be similar to OHV use of e-bikes are allowed on unpaved areas. Equestrian recreation activities have similar adverse impacts on coastal resources but would be largely limited to trail margins. Equestrian trails would cause adverse impacts on corridor vegetation from trampling and grazing and browsing. Indirect impacts from equestrian trails would include introduction of noxious weeds from contaminated feed or hay, and introduction of nutrients and noxious weeds from equestrian feces. Under all four alternatives, acres open to equestrian use would remain the same.

Under all alternatives, the number of recreation users of coastal areas is expected to increase as population increases and climate change causes inland temperatures to rise. An increase in overland travel would have a negative effect on coastal resources. A decrease in overland travel would have a beneficial effect on coastal resources.

Alternative A

Under Alternative A, 200 acres of existing coastal resources are open to OHV travel, and 800 acres of existing coastal resources are managed as OHV limited (see **Table D-48**). Samoa Dunes is operated as an SRMA, which puts a higher priority on recreation access over habitat and dune health. Under Alternative A, OHV travel would impact all 1,000 acres of coastal resources to some extent, therefore Alternative A is the least protective of coastal resources. Under all alternatives, negative effects of off-road travel are likely to increase commensurate with an increase in the number of recreation users due to population growth and climate change, and increased e-bike usage.

Alternative B

Under Alternative B, the number of acres open to OHV travel would remain the same, but the number of acres open to limited OHV travel would decrease by 200 acres or 25 percent, and 200 acres would be closed to OHV travel. Samoa Dunes would be operated as an ERMA, which would put a higher protection on resource protection than operation as an SRMA. Accordingly, the overall negative effects of off-road travel discussed above would decrease under Alternative B as a result of the decrease in acreage open to limited OHV travel.

Under Alternatives B, C, and D, rules for e-bikes would be established. Under these alternatives, e-bikes would be allowed in all areas open to OHVs and prohibited in all areas closed to OHV travel. E-bikes would not be allowed on natural unpaved surfaces unless approved on a case-by-case basis. Class I and Class II e-bikes would be allowed on paved non-motorized routes. BLM will monitor natural and cultural resource impacts of e-bikes and user interactions with e-bikes. If monitoring indicates that e-bikes are not compatible with other uses in a particular area, subsequent implementation level NEPA may be considered to limit e-bike uses on non-motorized trails. As e-bikes become more popular, e-bike use is expected to increase and would add to overall detrimental travel management effects on dunes discussed above. Rules for e-bikes would also apply to future BLM land purchases in the coastal strip.

Alternatives C and D

Under Alternatives C and D, OHV travel areas in coastal resources would remain the same compared with Alternative A. Samoa Dunes would continue to be managed as an SRMA, allowing for a similar intensity of OHV use compared with Alternative A. The same conditions discussed under Alternative B related to increased use of coastal recreation areas due to population growth, climate change, and increasing e-bike use apply to these alternatives. New e-bike regulations would be the same as in Alternative B. Therefore, negative impacts of OHV travel would be lower than Alternative A because OHV limited acreage would be reduced by 200 acres or 25 percent. Impacts of OHV travel under Alternatives C and D would not provide the level of preservation and restoration as Alternative B due to increased recreational OHV and e-bike use of the area.

Impacts of Recreation and Visitor Services Actions on Coastal Resources

Recreation opportunities in the coastal planning area are managed by a variety of entities. USFWS manages Humboldt Bay National Wildlife Refuge. North of the Samoa Peninsula, management of coastal areas is shared between California State Parks (Little River State Beach), Humboldt County Parks (Clam Beach, Mad River), and USFWS. On Samoa Peninsula, management of coastal resource areas is shared between USFWS (Lanphere Dunes, Ma-le'l Dunes North), Friends of the Dunes, Manila Community Services District (Manila Dunes Recreation Area), City of Eureka, BLM (Ma-le'l Dunes CMA, Samoa Dunes SRMA, Mike Thompson Wildlife Area, South Spit, Humboldt Bay) and several private entities. South of Humboldt

Bay coastal resources are managed by Humboldt County Parks (Table Bluff), Centerville Beach County Park), CDFW (Eel River Wildlife Area) and the Wildlands Conservancy (Eel River Estuary Preserve).

Public recreational uses in the planning area include OHV riding, equestrian use, beach access, surfing, beachcombing, fishing, hiking, dog walking, picnicking, birdwatching, cultural site visitation, vegetation gathering, and education. Target shooting and camping are prohibited at all locations, although waterfowl hunting, and upland game bird is allowed a South Spit.

Impacts Common to All Alternatives

The primary impact from recreation and visitor services decisions is from OHV and e-bike use. Lesser impacts are had from equestrian use and other human activity. The use of OHVs on areas designated as open to travel would potentially contribute to the spread of noxious weeds as native vegetation becomes more susceptible to trampling. Equestrian recreation and OHV limited activities have similar adverse impacts on vegetation but would be largely limited to trail margins. Other impacts on coastal resources could occur from both legal and illegal vegetation gathering, which could remove native vegetation and leave the land vulnerable to erosion and the spread of noxious weeds. Trash left by recreation users impacts surrounding habitat and can injure or kill wildlife.

Under SRMA management, all SRMAs would be classified as OHV limited with the exception of Samoa Dunes. Under ERMA management, all ERMAs would be classified as OHV limited except Samoa Dunes and BLM would collaborate with community partners and agencies to promote awareness of area sensitivity and cumulative impacts to be avoided. Recreation development outside of RMAs would not occur where there is the potential to compromise natural and cultural resources and would be limited as necessary to avoid conflicts with other resource values.

Direct impacts on upland vegetation would be from OHVs and e-bikes that directly crush and destroy vegetation, introduction of noxious weeds by vehicles and horses, browsing by horses, and vegetation-gathering that removes vegetation. Indirect impacts include erosion, changes to dune form and stability, and proliferation of noxious weeds where native vegetation has been removed. Alternatives that open more areas to recreation would have a greater degree of negative effects.

Alternative A

Under Alternative A (existing conditions), one coastal area totaling 200 acres would be managed as an SRMA (see **Table D-50**). Under the Arcata RMP Samoa Amendment 1995, Manila Dunes (part of Ma-le'l Dunes CMA) includes a directive to enhance natural values and dune ecosystems and provide opportunities for non-consumptive recreation (hiking, sightseeing, birdwatching, picnicking). Samoa Dunes includes a directive to provide opportunities for non-consumptive recreation that does not conflict with OHV use. Negative effects related to OHV use and other recreation activities as discussed above would be greatest in areas open to OHV use.

Alternative B

Under Alternative B, one coastal area totaling 200 acres would be managed as an ERMA (see **Table D-50**). No coastal resources areas would be managed as SRMAs. Under ERMA management, recreation activities would be likely to have fewer impacts on coastal resources, as BLM would collaborate with community partners and agencies to promote awareness of area sensitivity and cumulative impacts to be

Table D-50
Acres of Land in the Coastal Strip Designated as Recreation Management Areas

RMA	Alternative A	Alternative B	Alternative C	Alternative D
SRMA	200	0	200	200
ERMA	0	200	800	200
Totals	200	200	1,000	400

¹Acres are rounded to the nearest 100.

avoided. Under Alternative B, recreational development outside of RMAs would not be allowed unless it contributes to management of habitat connectivity corridors, promotes habitat resiliency, or the protection or interpretation of cultural resources. In addition, OHV waveslope access at Mike Thompson Wildlife Area, South Spit, Humboldt Bay may be restricted periodically to protect nesting snowy plovers. Therefore, although Alternative B would have the same acreage as Alternative A, it would be most protective of coastal resources from direct surface-disturbing impacts.

In addition, Alternatives B through D would disallow unauthorized trail construction including any user made mountain bike or OHV feature. Unauthorized features would be remediated as appropriate. Unauthorized trails could trample vegetation, damage habitat and dune structure, and impact snowy plover nesting success. The directive to remediate unauthorized trails would have a beneficial impact by decreasing and/or redressing impacts on habitat.

Alternative C

Under Alternative C, one coastal area of 200 acres would be managed as an SRMA and two coastal areas of 800 acres would be managed as ERMA (see **Table D-50**). This alternative increases the areas to be managed for recreation by a factor of 4 compared with Alternatives A and B. Under this alternative the negative impacts on coastal resources described above would occur over a wider range of acres. Recreational development would be allowed outside of RMAs if it would not result in adverse impacts on natural and cultural resources, so areas outside of RMAs would be also less protected than under Alternative B. In addition, Ma-le'l Dunes CMA would be designated as an ERMA and would be managed for recreation with the following additions. It would be still prioritize dune habitat restoration and protection of endangered plant species while providing recreation opportunities, be closed to mechanized vehicles and dispersed camping, and pedestrian and equestrian use would be limited to designated trails to protect sensitive plant and animal habitat. Under this alternative, OHV waveslope access at Mike Thompson Wildlife Area, South Spit Humboldt Bay may be restricted periodically to protect nesting snowy plovers, similar to Alternative B. Alternative C would be the least protective of coastal resources from direct surface-disturbing impacts of recreation.

Alternative D

Under Alternative D, one coastal area of 200 acres would be managed as an SRMA, and one coastal area of 200 acres would be managed as an ERMA (see **Table D-50**). Under this alternative, acreage managed for recreation would be approximately doubled compared with Alternatives A and B, therefore this alternative would be less protective compared with Alternatives A and B from direct surface-disturbing impacts of recreation. Alternative D includes 40 percent of coastal recreation acreage compared with Alternative C; therefore, it is more protective than Alternative C from direct surface-disturbing impacts of recreation.

Impacts of Leasable, Locatable, and Mineral Materials Actions on Coastal Resources

Minerals

Impacts Common to All Alternatives

Minerals management actions in general include solid leasable mineral potash; fluid leasable minerals oil and gas; locatable minerals precious and base metals, chromite, manganese, gemstones, diatomite, iron, barite, asbestos, tungsten, nickel, cobalt, and chemical-grade limestone; and mineral materials development which include common variety minerals such as sand, gravel, clays, fill material, broken rock, and building stone. Minerals actions would cause surface disturbance to coastal ecosystems including dunes and beaches that would directly and indirectly adversely affect coastal resources. Direct effects would include removing surface vegetation which would alter the existing vegetation community, opening the area to the invasion of noxious weeds, increasing the potential for dune and beach erosion, and destabilizing coastal dunes thereby decreasing coastal resistance to sea level rise. Indirect effects could include allowing contaminated runoff to enter the ocean and sensitive bays and estuaries. Minerals operations in the coastal zone would be challenged by sea level rise which could cause flooding of the mining operations and exacerbate damage and contamination of surrounding coastal ecosystems.

Under Alternative A, the entire Samoa Peninsula is closed to mineral materials development. Under Alternatives B, C, and D, Mike Thompson Wildlife Area, South Spit, Humboldt Bay and Ma-le'i Dunes CMA are closed to mineral materials development.

Under Alternatives B through D, ACEC's would be closed to all mineral leasing activities. SRMA's and ERMA's would be closed to leasing of non-energy solid minerals, but open to fluid minerals leasing with no surface occupancy. Ma-le'i Dunes CMA would be recommended for withdrawal from locatable mineral entry. All newly acquired lands on the coastal strip would be closed to mineral materials development.

Alternative A

Under Alternative A, due to the low economic mineral potential, and lack of interest in mineral development within the Resource Area, restrictions and stipulations for mineral development and sales, and locatable minerals would be determined on a case-by-case basis and be consistent with the Recreation and Conservation Office's (RCO's) prescriptions for each management area. Under Alternative A, Public lands on the Samoa Peninsula are not available for mineral materials development (see **Table D-51**). There are no existing mineral leases on the Samoa Peninsula. Accordingly, there is no existing disturbance of coastal resources from mineral development actions under Alternative A. There is a risk of disturbance on 1,000 acres of coastal resources, from locatable minerals and leasable fluid minerals, however the risk is low due to the low economic mineral potential, and lack of interest in mineral development within the coastal resource area.

Alternatives B through D

Under Alternatives B, C, and D, 1,000 acres of coastal resources would be open for locatable minerals and 0 to 200 acres of coastal resources would be opened for mineral materials development (see **Table D-51**). This represents no change in the total area open to locatable minerals, and a decrease of 80 to 100 percent of the total area open to mineral materials development.

Table D-51
Minerals Management Actions over Acres of Land in the Coastal Strip

Action	Alternative A	Alternative B	Alternative C	Alternative D
Locatable Minerals				
Open	1,000	1,000	1,000	1,000
Proposed for Withdrawal	0	1,000	1,000	1,000
Leasable Fluid Minerals				
Open with standard terms	1,000	200	200	200
Open with no surface occupancy	0	0	600	0
Closed	0	800	200	800
Mineral Materials				
Open	1,000	200	200	0
Closed	0	800	800	1,000

Acres open to mineral activities under Alternatives B through D would be largely reduced compared to Alternative A. Moreover, given the combination of the popularity of coastal recreation on the Samoa Peninsula and the interest in increasing coastal resilience to sea level rise, it is unlikely that minerals activities would be authorized in the future. If minerals activities were authorized, it would cause the detrimental impacts discussed above.

Under Alternatives B through D, future mineral operations would be required to comply with performance standards, including complying with state water quality standards, provision of Stormwater Sediment Prevention Plans, stockpiling topsoils and replanting with native species, and including measures to preserve historic and cultural sites. These measures would reduce impacts, but not eliminate them.

Alternatives B and D

Under Alternatives B and D, 200 acres of coastal resources would be open to leasable fluid minerals with standard terms, and 800 acres of coastal resources would be closed to leasable fluid minerals (see **Table D-51**). This represents a decrease of 800 acres, or 80 percent of the total area, that would be open to leasable fluid minerals. Accordingly, Alternatives B and D would have the fewest impacts related to minerals activities and would provide the greatest protection for coastal resources from mineral actions.

Alternative C

Under Alternative C, 200 acres of coastal resources would be open to leasable fluid minerals with standard terms, 600 acres of coastal resources would be open to leasing with no surface occupancy, and 200 acres of coastal resources would be closed to leasable fluid minerals (see **Table D-51**). Under Alternative C, 80 percent of the total acreage would be open to some form of fluid mineral leasing. This is 20 percent lower than Alternative A, but 60 percent higher than Alternatives B and D. Consequently, Alternative C would be more protective and have fewer impacts related to mineral leasing than Alternative A, but would be less protective than Alternatives B and C.

Impacts of Lands and Realty – Use Authorizations Actions on Coastal Resources

Land Use Authorizations

Land use authorizations generally include a number of activities and features, such as access roads, transmission lines and pipelines, and their ROWs that would result in surface disturbances and vehicle and equipment transportation, both of which could contribute to adverse impacts on coastal resources. Ma-

le'l Dunes CMA includes existing ROWs for water facilities and pipelines of Humboldt Bay Municipal Water District and Manila Community Services District (BLM 2022a). In addition, the USACE has a temporary ROW for periodic work on 40 acres of Samoa Dunes SRMA for jetty construction and maintenance.

Other potential land use authorizations include film permits and permits for apiaries. Filming in this region is typically short term (1–2 days) and conducted by small crews (less than 10 people); as such, it qualifies for a minimum impact permit, with minimal processing. Apiary uses include locating beehives.

Impacts Common to All Alternatives

Impacts on coastal resources would vary depending on areas under consideration and decisions made by land managers. Generally, the fewer the number of acres managed for ROWs, the less potential for adverse impacts on coastal resources and the coastal landforms and habitats. In addition, ROWs would be granted only after site-specific analysis and terms and conditions of ROW grants would depend on the sensitivity of the affected resources and applicable laws and regulations established to protect them.

Potential impacts would include direct loss of vegetation and topsoil, damage to dune form and ecology, soil compaction, reduced plant diversity, habitat fragmentation, increased erosion, and increased likelihood of noxious weed invasion. Additional impacts on dunes, soils and native vegetation would continue over time by maintenance activities for those features, although mitigation and BMPs in place would help alleviate adverse impacts. Potential impacts of buried infrastructure, such as pipelines, would primarily occur during construction. Excavation and grading for construction could result in damage to dune structure and an increase in erosion and sedimentation into coastal wetlands and waters. Construction materials and construction waste, such as old asphalt and other debris, could pollute coastal resources and coastal waters. Construction activities would require the presence of construction vehicles, heavy equipment and materials, and construction crews. In addition to stormwater runoff and potential resulting water quality and sedimentation impacts, there is the potential for hazardous materials, including petroleum products associated with diesel vehicle and equipment use and contaminants from paving materials, concrete mixing, pouring and washout, and sanitary facilities, to enter sensitive coastal resource areas and coastal wetlands and waters that can affect water quality. Damage to coastal resources could also occur from maintenance activities, or from pipeline rupture, which could flood coastal resources causing erosion and sedimentation of surrounding areas.

Film operations could impact coastal resources through surface disturbances and vehicle use, causing erosion and habitat fragmentation. Additional impacts could occur from trash, noise, and night lighting which could injure or harass wildlife species. Apiary uses have the potential to conflict with high-density recreation uses; as such, they may necessitate planning to designate avoidance areas for apiary uses. Apiaries could also have a beneficial impact on sensitive habitat by increasing pollination rates seed germination success for native species.

Alternative A

Under Alternative A, the Coastal strip (BLM-administered lands within 5 miles of the coast between Lost Coast headlands and the Mattole River) are open to ROWs (see **Table D-52**). ROW proposals are evaluated on a case-by-case basis. Alternative A presents a risk of disturbance on 1,000 acres of coastal habitat over the life of the plan if alternative ROW routes could not be located.

Table D-52
Acres of Coastal Resource Land under ROW Avoidance or Exclusion

Action	Alternative A	Alternative B	Alternative C	Alternative D
Open to ROW Authorization	1,000	0	0	0
ROW Avoidance	0	0	1,000	800
ROW Exclusion	0	1,000	0	200

Under Alternative A, public lands on the Samoa Peninsula Management Area are not available for disposal. There are no lands specifically identified for acquisition in coastal resource areas.

Alternative A does not address permits for film or apiary activities.

Alternative B

Under Alternative B, 0 acres of coastal resources would be managed as open to ROW authorization, 0 acres of coastal resources would be managed as ROW avoidance areas, and 1,000 acres of coastal resources would be managed as ROW exclusion areas (see **Table D-52**). In addition, any newly acquired land contiguous to the Ma-le'i Dunes CMA publicly owned properties would be managed as ROW exclusion areas except for existing ROWs and designated corridors. Under Alternatives B through D, construction requirements are more completely defined, which would reduce impacts from new construction and maintenance work compared with Alternative A. Under Alternative B, 100 percent of coastal resources would be ROW exclusion areas and 0 percent would be ROW avoidance areas. Therefore, Alternative B would be more protective of coastal resources than Alternative A.

Under Alternatives B through D, criteria for land acquisition include but are not limited to: addressing sea level rise, dune migration, or managing tidal wetland areas; enhancing recreation access or opportunities; lands within or nearby special designation areas that exhibit the pertinent qualities of the special designation areas; lands needed to improve efficiency for long-term resource management of other BLM-administered areas; lands that provide for scientific research opportunities. Additional criteria under Alternative B include acquiring lands that provide refugia, unique habitat value, or resiliency. These criteria increase the potential for land acquisition in the Coastal Strip, particularly adjacent to the Ma-le'i Dunes CMA. Land acquisition in this area would be beneficial to coastal resources as it would provide for improved and expanded habitat research and management. Improved habitat management would improve dune health and increase coastal resilience to sea level rise.

Under Alternative B, apiary activities may not be located on dunes. Therefore, apiary activities would have more coastal areas closed to them and would have fewer impacts compared with Alternative A.

Under Alternatives B through D, commercial filming activities would not be allowed to use heavy equipment, incendiary devices, explosives or special effects. Vehicles would be required to remain on existing roads or trails, and the project would not be allowed to remove vegetation or disturb the soil. Therefore, impacts related to commercial filming would likely be less under Alternatives B through D compared with Alternative A, as the film project would have more controls on environmental damage.

Alternative C

Alternative C does not include any ROW exclusion areas. Existing and acquired BLM lands in the Coastal strip would be managed as ROW avoidance areas (see **Table D-52**). Better defined construction

requirements would reduce impacts compared with Alternative A, but impacts would be greater than those under Alternative B.

Additional land acquisition criteria under Alternative C that could apply to coastal resources includes prioritizing acquisition of lands that provide open space in or around communities. The majority of the coastal resource land on the Samoa Peninsula is already in open space and managed by a number of different government agencies. Therefore, the impetus for BLM to acquire coastal resources land under Alternative C is likely less than under Alternative B.

Under Alternative C, apiary activities would not be permitted within OHV open areas, within 300 feet of designated trails and trailheads, or in recreation areas. This would severely limit the area available to apiary activities on the Samoa Peninsula Management Area.

Alternative D

Impacts under Alternative D related to ROWs would be similar to those under Alternative C, in that the majority of existing and acquired BLM lands in the Coastal strip would be managed as ROW avoidance areas (see **Table D-52**).

Additional criteria for land acquisition under Alternative D include the additional criteria under both Alternatives B and C. Therefore, the BLM would have the greatest impetus to purchase coastal resources land under Alternative D compared with all other alternatives.

Apiary use under Alternative D would be the same as under Alternative C.

Impacts of Livestock Grazing Actions on Coastal Resources

Impacts Common to All Alternatives

Livestock grazing is not allowed on the Samoa Peninsula (this includes Mike Thompson Wildlife Area, South Spit, Humboldt Bay; Samoa RMP; and Ma-le'i Dunes CMA) under any alternative, therefore grazing management decisions would not impact coastal resources on the Samoa Peninsula.

Impacts of Public Health and Safety/Hazardous Materials Actions on Coastal Resources

Alternative A

The current Arcata RMP 1992 does not contain specific management actions for public health and safety.

Alternatives B through D

Management actions for public health and safety that could impact coastal resources include land disturbance from the following actions: installation of tsunami warning sirens; improvement of roads to facilitate emergency access and egress; and coordination with local law enforcement to provide for more regular patrols of BLM lands with enforcement problems. Direct effects of installation of tsunami warning sirens and access road improvements would include surface disturbance during construction, such as removing surface vegetation. This would increase the risk of introducing noxious weeds and dune and beach erosion. However, these actions would be limited in size and scope and with the effective implementation of BMPs, would not have a long-term impact on coastal habitat resiliency or health. Increasing enforcement of BLM regulations would have a beneficial effect on coastal resources, particularly by reducing OHV use in unauthorized areas. Overall, the effects of additional public health and safety management actions would be beneficial for coastal resources.

Impacts of Renewable Energy Actions on Coastal Resources

No alternatives include proposed management related to designating leasing areas for solar, wind, biomass, or geothermal development in the coastal resource area. The Bureau of Ocean Energy and Management (BOEM) has jurisdiction for wave and offshore energy development and would be the responsible agency for issuance of renewable energy leases, easements, and rights-of-way pertaining to wave and offshore energy development projects. The BLM would collaborate and coordinate with the BOEM to ensure these actions are compatible with existing uses on BLM lands, management, and protections of coastal lands. Additionally, BLM would coordinate with BOEM to address actions with the potential to adversely impact natural and cultural resources, including actions with potential to impair or impede coastal access.

Wave and offshore wind development would require transmission facilities (transmission lines, and electrical substations) to onshore locations. These facilities would need to pass through coastal resource areas. The direct effects of these facilities would be primarily ground disturbance for construction and maintenance. If this development occurs, it would not be allowed in coastal areas that are designated as ROW Exclusion (See **Table D-52** above).

Impacts of Vegetation Management Actions and Vegetation Special Status Species Actions on Coastal Resources

Impacts Common to All Alternatives

Under Alternative A (existing conditions), coastal vegetation management goals are to monitor botanical and cultural resources, conduct dune restoration, and remove exotic plants. In addition, at Samoa Dunes vegetation management goals include protecting coastal wetlands and other natural values. At Ma-le'i Dunes CMA, vegetation management goals include enhancing natural values and dune ecosystems.

Under the Arcata RMP Samoa Amendment 1995, goals for the Samoa Peninsula include protection of sensitive species, monitoring of botanical resources conducting dune restoration and exotic plant removal, and continuing to work with other governments in the management of the entire peninsula. Special status plant species at Samoa Dunes and Ma-le'i Dunes CMA include Menzies' wallflower (*Erysimum menziesii*) and beach layia (*Layia carnosa*). Under the Arcata RMP Samoa Amendment 1995, The Manila Dunes RNA/ACEC (150 acres) is maintained for protection and interpretation of natural value, including enhancing natural values and dune ecosystems, and protecting specific populations of Menzie's wallflower and beach layia populations, and potential nesting sites for the western snowy plover. Goals for the Samoa Dunes include protecting specific populations of Menzie's wallflower, beach layia, coastal wetlands, and other natural values.

Under Alternatives B through D. Vegetation would be managed for conservation of federally listed and BLM Sensitive plant species; fire resistance and resilience in the face of catastrophic fire and low intensity fire, resistance and resilience to disease and harmful insect outbreaks; ability to shift structurally and compositionally in the face of climate change; and implementation of vegetation management actions that reduce the likelihood of catastrophic wildfire. Regulations would be added to permitted surface-disturbing activities. Restoration permittees would be required to use species native to the area, particularly locally sourced seeds when possible. Permittees removing vegetation may be required to salvage and store vegetative mat and topsoils.

The BLM would use landscape scale analysis to evaluate opportunities to collaborate on vegetation management projects occurring on lands adjacent to BLM. In areas where adjacent land uses do not meet BLM objectives, BLM will look for opportunities to offset or mitigate the effects of adjacent land uses.

BLM would use a combination of Assessment Inventory and Monitoring (AIM) methods, Rangeland Health Assessments (RHA), and legacy methods currently implemented by BLM for long term monitoring projects to evaluate potential changes in vegetation communities, and necessary management changes to best address the vegetation trends. These methods would also be used to address natural resource resiliency to climate change impacts.

BLM would continue to: manage coastal forests (Sitka spruce and beach pines) while maintaining recreational access; protect coastal grassland communities with targeted conifer removals, including converting forests in historic grassland areas to functioning prairies where appropriate; manage to maintain Sitka spruce and allow for natural processes to occur; and allow dunes and associated vegetation communities to migrate into coastal forests in response to sea level rise.

In coastal prairies, BLM would continue to implement woody vegetation removal projects to enhance and restore coastal grassland communities; use prescribed burning to promote native grassland species and restoration outcomes; plant native grassland vegetation including native forbs which support pollinator habitat; and where appropriate, promote below-ground carbon sequestration through both soil amendment and planting of native vegetation.

In dune habitat, BLM would: support restoration and maintenance of native plant vegetation and associated dune processes through nonnative and invasive plant management that is consistent with endangered species recovery recommendations and best available science relative to coastal resilience related to sea level rise; allow for dune migration; allow for heavy equipment use and emerging technology in coastal dune restoration activities and for snowy plover habitat creation and maintenance; and manage OHV and recreation impacts to reduce impacts on native plant communities.

Alternative A

Vegetation management under Alternative A would have an overall beneficial impact on coastal resources. Dune restoration, and exotic plant removal, particularly removal of European beach grass, would improve the health of coastal dunes and allow for dune retreat in response to sea level rise.

Alternatives B through D

The guidelines under Alternatives B through D provide more prescriptive regulations for vegetation removal and restoration projects, and would therefore be more protective of coastal resources than under Alternative A. Using native species and locally sourced seeds and salvaging vegetative mats and topsoil in restoration projects would result in higher seed germination and plant success rates for restoration projects which would be beneficial for coastal resources.

Impacts of Visual Resource Management Actions on Coastal Resources

Impacts Common to All Alternatives

VRM class designations have specific management objectives that, depending on the class designated, could beneficially impact coastal resources. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. The objective of VRM Class III objectives is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.

Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

VRM actions would not have direct effects on coastal resources, but they may have indirect effects by allowing or prohibiting surface disturbance and vegetation removal. Those impacts on coastal resources associated with recreation development, ROW construction and maintenance and other land use authorizations and road and trail construction would be minimized within areas with more stringent (VRM Class II) designations.

Alternative A

Under Alternative A, VRM classes for coastal resources are not designated (see **Table D-53**). Under this alternative, management activities for coastal resources are not required to consider visual resources objectives. Fewer restraints on construction or management activities could allow for more indirect impacts from development and more negative impacts on coastal resources, consequently, this alternative would be the least protective of coastal resources.

Table D-53
Acres of Coastal Resource Land under VRM Classes II and III

Class	Alternative A	Alternative B	Alternative C	Alternative D
VRM Class II	Not specified	200	200	800
VRM Class III	1,000	800	800	200

Alternatives B and C

Under Alternative B and C, 200 acres of coastal resources would remain at VRM Class II, and 800 acres of coastal resources would be designated VRM III (see **Table D-53**). Under these alternatives, 20 percent of the total acreage would be designated VRM Class II, and the remaining 80 percent would be designated VRM Class III which has fewer restrictions on development. Therefore, these alternatives would be the most protective of coastal resources as they would be less likely to allow indirect impacts from development.

Alternative D

Under Alternative D, 800 acres, or 80 percent, of coastal resources would be designated VRM Class II (see **Table D-53**). Therefore, this alternative would be least likely to allow indirect impacts from development and therefore most protective of coastal resources compared with Alternatives B and C. Regulations related to VRM Class II under Alternative D would place more restrictions on development than Alternative A, consequently Alternative D would be more protective of coastal resources than Alternative A.

Impacts of Wildland Fire Management Actions on Coastal Resources

The majority of management actions for wildfire are directed at areas in or adjacent to the Wildland Urban Interface (WUI). The Arcata RMP does not identify WUI acreage in coastal resource areas. Fifty acres of coastal resource areas are located in a WUI. These acres are primarily covered with Coastal Forest and Dune habitats.

Under Alternatives B through D, management actions for Coastal Forest includes selectively modifying/removing fuels to retain older trees and a smaller component of younger age classes. Vegetation treatments in Dunes are the same as directed in the Vegetation management section. Wildland fire management activities would be conducted in a manner that avoids damaging impacts on resources and other values including the introduction and spread of nonnative and invasive species, introduction of suppression chemicals into waterways, disturbance of erodible soils or ecologically sensitive systems. Where damage occurs, it will be repaired or mitigated to the extent possible.

Impacts Common to All Alternatives

Impacts related to wildfire management actions would improve the health and resiliency of Coastal Forests by selectively modifying/removing fuels and retaining healthy trees. Negative impacts would include surface disturbance from mechanical and hand operated equipment used to cut, clear, or prune herbaceous or woody vegetation. Impacts from vegetation treatments in Dunes would be the same as those in the vegetation management section. Refer to Vegetation Management Actions, above. The primary beneficial impact is a reduction in the risk of a catastrophic wildfire.

Alternative A

Alternative A does not include wildland fire management actions for the 50 acres of coastal resources in the WUI. This Alternative is the least protective of coastal resources as it exposes them to a greater risk of catastrophic wildfire.

Alternatives B through D

Alternatives B through D include wildfire management actions for 50 acres of coastal resources located in the WUI. These alternatives reduce the potential for catastrophic wildland fires; therefore, they are more protective of coastal resources than Alternative A.

Impacts of Wildlife Management Actions on Coastal Resources

Alternative A

Under Alternative A sensitive species are protected according to the BLM sensitive species policies (USDI BLM Manual Section 6840) and T&E species management will follow Section 7 consultation procedures in accordance with the ESA. The 600 acres of South Spit has existing protections for snowy plover nesting areas, including closure to the public during nesting season. Wildlife management actions do not have direct impacts on coastal resources but have beneficial indirect impacts when specific areas are protected from disturbance.

Alternatives B through D

Under Alternatives B, C, and D, coastal properties are to be managed to maintain wildlife habitat for native species, particularly western snowy plover, and dune systems are to be managed to allow active dune dynamics to continue to occur. These alternatives also contain measures to prohibit activities including UAV use near active snowy plover nests, monitor wildlife and habitat, and implement actions to promote recovery of T&E species. The increase in protections for sensitive T&E species would result in an indirect impact of greater protection of coastal resources than Alternative A.

Alternative B

Under Alternative B, BLM would not allow predator control to protect listed species. Management of the 600 acres of South Spit would include: managing for a 15-miles per hour (mph) speed limit; closing plover breeding area when breeding behavior is active; lifting closure 14 days after the last chick fledges or after the current breeding season; and requiring dogs on leash on the waveslope during the breeding season. This alternative would provide more protection to snowy plover habitat than Alternative A, and therefore be more protective of coastal resources.

Alternative C

Under Alternative C, BLM would manage predators to protect listed species and consult with USFWS and Tribes regarding potential predator management. South Spit management would include managing for 15-mph speed limit; allowing dogs off leash during breeding season outside of designated plover protection areas; allowing recreational access to northern section of the waveslope of the South Spit during active breeding; and managing for increased recreational access through both the north and south corridor. This alternative would increase access near plover habitat in South Spit, and therefore be less protective of coastal resources than Alternative B.

Alternative D

Alternative D includes the same predator-management actions as Alternative C. It includes the same South Spit management actions as Alternative A with the following additions: continue to allow for dispersed recreation opportunities such as fishing, hunting and clamming while protecting sensitive wildlife; aircraft and UAVs are prohibited without a special use permit for CDFW regulations; and waveslope access may be restricted on a case-by-case basis as necessary to protect plovers and plover habitat. Predator management actions would not affect coastal resources, either directly or indirectly. This alternative would increase access near plover habitat in South Spit compared to Alternative B, and add more protections compared to Alternatives A and C. Therefore, this alternative would be more protective than Alternatives A and C, and slightly less protective than Alternative B. Alternatives B and D would be the most protective of coastal resources.

D.2.8 Wildland Fire Management

Issue Statements

- How would the alternatives affect post-fire rehabilitation efforts in the planning area, with consideration to recreation, wilderness management, special status species, and climate-smart planning goals?
- How would the alternatives affect management response to fires while supporting goals and objectives for forestry, vegetation, wildlife, and providing for firefighter and public safety?
- How would the alternatives affect fuels reduction activities, given current and anticipated future conditions?

Affected Environment

The NCIP planning area consists of 14.4 million acres, consisting of fire adapted vegetation communities that range from Oak Savanna and Chaparral Shrubland to Coastal Forests and Late Successional Conifer

Forest. The fuels complex in the NCIP planning area consists of a wide variety of vegetation due to the area consisting of both inland and coastal vegetation types. Vegetation types include:

- Foothill Pine and Oak Woodland
- Mixed Conifer
- Douglas Fir and Tannoak-dominated Forest
- Knobcone
- Rare Cypress Forest
- Dunes
- Coastal Forests
- Valley Foothill Riparian
- Oak Savannas and Open Woodlands
- Late Successional Conifer Forest
- Juniper and Sage
- Chaparral Shrubland
- Grasslands, Vernal Pools, and Wetlands
- General Riparian
- Fallow Fields and Croplands

These vegetation types exhibit a range of fire regimes and fire return intervals, from frequent to infrequent. In the absence of disturbance, current vegetation composition is prone to type conversion such as conifer expansion into oak woodlands, and substantial build up in fuels increasing wildfire hazard. Nonnative species invasions also contribute to changes in fuel type and fire regime. Treating nonnative species and regular monitoring are key to maintaining healthy landscapes.

Fires within the planning area include prescribed fires used as a management tool. Native Americans have participated in cultural burning within the planning area for thousands of years. Due to western expansion by European settlers, suspension of these cultural burns during the last two centuries has led to increased fuel loading within the planning area. Vegetation type shifts to nonnative grasses, in some ecosystem types, have also increased wildfire intensity and frequency. Emphasis on returning this cultural/prescribed burning to the landscape is a priority for the BLM in future management decisions and planning. Prescribed fire planning is based on sound risk management, considering economic feasibility, the best available science, cooperation with other agencies and Tribes, and consideration for public health and environmental quality. Not all the land within the planning area is expected to be burned in a prescribed fire, as risk management, logistics, and resource values may make prescribed fire untenable. Specific burn units and acreages shall be determined after thorough analysis of fuel loads, seral stages, and affected resources. Prescribed fire plans will provide burn objectives, prescriptions, and contingency plans in case the prescription is exceeded, or suppression action is needed. Burning will only occur with authorization from the Air Quality Management District with jurisdictional authority.

Naturally occurring wildfires have been widely distributed in terms of frequency and severity. The vegetation condition class is a measure of vegetation departure and indicates the degree to which current vegetation is different from estimated historical vegetation reference conditions (LANDFIRE 2021, see

Map 3-12 in Appendix A). Condition Class refers to the current and desired resource conditions related to fire management. The classification system describes the extent to which vegetation departs from reference conditions (or how the current vegetation differs from a particular reference condition). Condition Class is categorized into three separate classes ranging from 1-3. Class 1 refers to fire regimes being within historical ranges, Class 2 being moderately altered from historical fire regimes, and Class 3 meaning significant alterations have happened to the historic fire regime. Two-thirds or more of the planning area is in Condition Class 2 or 3. This means fire regimes in the planning area have been moderately or significantly altered from their historic range, due to fire suppression. From 2000-2012, lightning accounted for about one-third of the ignitions within the planning area. Human caused ignitions made up the remaining two-thirds of ignitions. The main causes are equipment and incendiary. Increasing wildfire reoccurrence and severity of drought conditions have been predicted for this area due to climate change. This could, in turn, increase the occurrence and severity of wildfires on the BLM-administered land. The increased spread of forest insects and diseases will only aid in the increase of potential fuels for more intense wildfire behavior.

Wildland fire protection for these lands is provided under the California Master Cooperative Wildland Fire Management and Stafford Act Response Agreement. Under this agreement, the California Department of Forestry and Fire Protection (CAL FIRE), the Forest Service, and the National Park Service (NPS) have agreed to assume wildfire protection responsibility for BLM-administered lands in the NCIP planning area. While wildland fire protection is covered by these multiple agencies, an estimated 95 percent of that coverage is by CAL FIRE. Values at risk within the planning area include several communities, infrastructure, sites of historical or cultural significance, and special designated areas. Currently the population within the planning area is almost 800,000.

The BLM would have the ability to transfer direct protection areas from one agency to another, or remove lands from outside coverage to become BLM Direct Protection. From a resources and response capability standpoint, the BLM does not have the ability to respond to fires on public land without outside support. Any future direct protection area transfers will be done through the California Fire Management Agreement and would not be dictated by language within the NCIP.

Environmental Consequences

This section discusses impacts on wildland fire from proposed management actions of other resources and resource uses. Impacts on wildland fire management generally result from activities that affect fire intensity, frequency, and suppression efforts. Conditions and actions that may result in impacts on wildland fire management include the following:

- Alteration of vegetative cover (standing and non-standing) that results in a substantial upward shift in the fire regime condition classes of the planning area (away from average reference conditions).
- A substantial increase in the risk of wildfire ignitions in areas where it is not desired.
- Management actions that substantially inhibit a response to wildfire or appropriate treatments to prevent wildfire.

Impacts Common to All Alternatives

Under all alternatives, the BLM could use prescribed fire, manual treatments, mechanical treatments, biological treatments and or chemical treatments to manage fuel conditions. The BLM could use fire or fuels mitigation as a resource benefit and would partner with communities, other federal agencies, state

agencies and Tribal cooperators. Under all alternatives, fire management activities would comply with state and federal air quality standards; these standards may affect the timing of prescribed burns. Restrictions, such as a lack of resources for fuels management could affect the ability to efficiently manage fuels and could increase costs of vegetation management and suppression.

Minerals development in the decision area would continue to represent a low-level threat of increased ignition. Interest in developing locatable and nonenergy leasable minerals is likely to remain low under all alternatives for much of the decision area. Increased mineral development could lead to an increased response to wildfire suppression because of an increase in road development associated with development.

ROW development could also introduce ignition sources. Transmission lines along ROW are a concern for ignitions. Lines arching, due to high wind events, can cause sparks and has led to catastrophic fires in Northern California. Narrow ROW access width and lack of maintenance of vegetation leading to material hitting lines is a large concern especially in the timbered vegetation types. New roads or ROW could be used as strategic fire breaks and maintained for future wildfire response efforts.

Wildfire response would be approached differently within wilderness, ACECs, or other special designation areas. Special approval is needed for the use of certain suppression activities within these areas. Special designation areas, including ACECs and wilderness may restrict the BLM's ability to efficiently manage fuels and could increase costs of vegetation management and fire suppression.

Recreation activities, such as OHV) use and travel, are anticipated to increase in the decision area over the life of the plan. General recreation uses and vehicles parking over tall grass and other fuels at trailheads have been a source of ignitions in the past. Another potential ignition source can come from recreational target shooting. Under all alternatives, this activity would represent a potential for risk of human-caused ignition.

An increase of vegetation management activities proposed across alternatives would decrease potential fuel loading that contributes to wildfire intensity and reduce fuel continuity that contributes to wildfire spread. Increased surface disturbance resulting from vegetation management activities may elevate the introduction of nonnative species that can alter fire regimes and fire frequency. Management actions that influence vegetation, including habitat objectives, restoration, and livestock grazing, would affect existing fuel loads and related levels of wildfire hazard.

Post-fire activities such as burned area stabilization and rehabilitation are allowable under all alternatives.

Alternative A

All the above-listed resource uses would continue to have impacts on the wildland fire environment, under Alternative A. Access to future mineral leasing could lead to future potential ignitions. The number of surface acres closed to mineral materials development is 81,800.

Land that is designated wilderness or as an ACEC would be approached differently in wildfire suppression tactics and vegetation management. This can affect wildfire behavior because fire behavior can be increased in untreated areas. ACEC's are managed differently than wilderness as suppression tactics are based on the specific ACEC and often at the discretion of local fire leaders. There would be 54,600 acres of ACECs under Alternative A. Wilderness suppression tactics are bound by Federal policy and are much more

restrictive than allowed in ACEC's. 58,490 acres of wilderness and Section 603 WSAs would be present under alternative A.

Alternative B

Under Alternative B, construction and maintenance of shaded fuel breaks along with low-to-moderate intensity prescribed burns would be prioritized. This would lead to moderated wildfire behavior when compared with Alternative A. Restoration of suppression lines to the original contour and vegetation to minimize visual contrast is required under this alternative. Restoration of suppression lines would lead to reduced non-authorized recreation activity opportunities, such as OHV use. This in turn could lead to reduced potential for ignition sources.

Decreased non-authorized recreation opportunities also mean decreased risk of invasives species being introduced. Less opportunities for invasives to be introduced can benefit reduced wildfire due to reduced fuels connectivity and because many invasives have a higher ignition probability than native species. Treatments to remove nonnative species are prioritized under Alternative B. This would lead to moderated fire behavior and more successful post-fire restoration than Alternative A.

Where special designations and Interface Zones conflict, treatments will be prioritized to protect special designations within the decision area. Under Alternative B Special Designation areas, such as wilderness and lands with wilderness characteristics, have a higher priority over multiple other uses. This could limit the amount of fuels reduction and suppression tactics that could occur due to restrictive management policies that govern wilderness areas.

The number of surface acres closed to mineral materials development is 206,700; 153 percent greater than Alternative A.

Special designation areas would be managed to curtail hazardous fuel loading and catastrophic wildfire where appropriate and in accordance with laws and policies. These actions would not occur under Alternative A. The amount of ACECs under Alternative B would be 88,820 acres; 63 percent greater than under Alternative A. The amount of designated wilderness and Section 603 WSAs would be 58,490 acres, the same as Alternative A. However, Alternative B would also identify 12,090 acres of Section 202 WSAs.

Community engagement and partnership would be prioritized Under Alternative B. Community engagement includes helping plan CWPP's and community outreach. This would help communities prioritize fuels reduction treatments and teach fire safe principles such as defensible space and home hardening. These actions do not occur under Alternative A.

Agreements would also be prioritized along with giving priority to areas where projects can be implemented in a cooperative effort with adjacent landowners, non-profit organizations, and Tribal, state, and federal partners. Cooperation across property boundaries leads to stronger development and implementation of vegetation management. These actions do not occur under Alternative A.

The BLM would prioritize vegetation management and hazardous fuels reduction to mimic historic fire return intervals, where appropriate and applicable. Data collection and reporting with programs like National Fire Plan Operations and Reporting System, the Interagency Fuel Treatment Decision Support System, and Potential Operational Delineations would be incorporated more into the existing programs.

These programs will help fire managers make better decisions about wildfire response and prioritize vegetation treatment areas. These actions would not occur under Alternative A.

Multiple resource objectives under Alternative B would be met with fuels management activities, such as prescribed fire, mechanical treatment, and chemical treatment. These are effective tools to help prevent larger wildfires and keep ecosystems healthy.

No heavy equipment would be utilized for suppression without the BLM approval in burial grounds, cemeteries, important cultural sites, serpentine soils, ACECs, Wilderness, WSAs, land with wilderness characteristics managed as a priority, unless approved by the BLM Authorized Officer or State Director. Because these are areas of designated importance, wildfire suppression tactics and vegetation management would need to be approached differently. Because of this, wildfire behavior could increase due to an increase of fuel loading. This increase of fuel loading would be because of restrictions of vegetation management activities within these areas. These actions would not occur under Alternative A.

Alternative C

Under Alternative C, suppression lines would be maintained as appropriate as long-term strategic fire breaks. This would enhance suppression efforts for a longer duration than proposed in Alternative A and B. Where special designations and Interface Zones conflict, treatments will be prioritized to protect Interface Zones. This would prioritize protection of human life and property as opposed to special designation areas as proposed in Alternative B. Because suppression lines would be maintained under this alternative, the potential for increased non-authorized recreation activity, such as OHV use, is possible and may increase the potential for ignitions. This could lead to more potential ignitions than Alternative B. Increased recreation opportunities can also mean an increased risk of invasive species being introduced. This could increase fuels connectivity along treatments and fuel breaks. Many invasives also have a higher probability of ignition than native species.

The number of surface acres closed to mineral materials development is 167,800. This is 105 percent greater than Alternative A but 19 percent less than Alternative B.

There would be 42,430 acres of designated ACECs under Alternative C; 22 percent less than Alternative A and 52 percent less than B. There would be 58,490 acres of designated wilderness and Section 603 WSAs. This would be the same as under Alternative A.

The nature and type of actions described under Alternative B related to community engagement and heavy equipment restrictions would be the same under Alternative C.

Alternative D

Under Alternative D, Interface Zones, WUI, and non-WUI would be managed as described in management common to all even if it intersects with the Essential Connectivity Corridor. Treatments would be determined on a case-by-case basis in areas of overlap where WUI and special designations conflict.

Where Interface Zones and special designations overlap, projects would be designed to prioritize Interface Zone goals and objectives while avoiding special designation resources to the extent practicable. During implementation level planning, treatments would be modified case-by-case in WUI and non-WUI to meet resource objectives in Essential Connectivity Corridors of High Biological Value. Suppression lines, where appropriate, will be maintained as long-term strategic fire breaks. This is a more cohesive and holistic

strategy than proposed in Alternatives A, B, and C and considers many varied factors and resource objectives.

The amount of surface acres closed to mineral materials development is 209,600. This would be 156 percent greater than Alternative A, 1.5 percent greater than Alternative B and 25 percent greater than Alternative C. This Alternative would have least potential development of roads, therefore resulting in less access roads for fire personnel.

There would be 87,890 acres of ACECs designated under Alternative D. This would be 61 percent more than Alternatives A, 1 percent less than Alternative B and 107 percent greater than Alternative C.

There would be 58,490 acres of designated wilderness and WSAs, including Section 202 WSAs, which would be 540 acres more than Alternative A. This would limit suppression tactics on 540 acres more than Alternative A.

The nature and type of actions described under Alternative B related to community engagement and heavy equipment restrictions would be the same under Alternative D.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions and conditions in the cumulative effect analysis area that have affected, and would likely continue to affect, wildland fire management are as follows:

- Projects for vegetation and forest health management, which may affect fuel loading, VCC, and fire severity
- Projects that effect the ability to respond to wildfires, effecting cost and effectiveness of suppression activities
- Projects that would increase ROW authorizations and energy and mineral development, which effect the chance of human-caused ignitions
- Projects that would increase access to land and consequently increase the risk of human-caused ignitions
- Projects to improve and increase access for recreation activities and consequently increase the risk of human-caused ignitions

The cumulative impacts analysis area for fire is defined as the planning area. The factors influencing fires that have occurred in the past and are expected to continue include weather and climate (particularly drought) and population growth especially within the WUI. Wildfires are expected to increase due to recurring and increasingly severe droughts caused by climate variability. Drought may also affect forest health, which consequently makes forests more vulnerable to wildfire. Additionally, attacks by insects and disease may further damage forest health; this has been enabled by stress on forests caused by drought. This could affect wildfire management through increased personnel requirements for fire suppression activities and increased costs to the wildfire management program.

Permitting mineral development could lead to an increase in potential ignition sources. These sources include increased traffic, heavy equipment, and overall increased human presence. Similarly increased recreation and OHV use in newly created fuel breaks also presents a potential increase in ignition sources. Creation of fuel breaks could lead to an increase in invasive species within fuel breaks. Many invasive

species have a higher ignition potential than native species. Future infrastructure plans indicate that many power lines will be moved or built underground, and that above ground ROWs will be widened and treated along a larger corridor. Increased fuels management and forest thinning can lead to the increased potential of an ignition. This could be from heavy equipment, chainsaws, chippers, or a prescribed burn spot fire or an escaped prescribed burn.

D.2.9 Cultural Resources

Issue Statements

- How would the alternatives affect cultural resources?

Affected Environment

Cultural resources are places or objects that are formed and/or assigned value by humans (e.g., historical buildings, documents, roads, artifacts, villages, battlefields and other landscapes, hunting camps, mines, sites, or places that are tightly bundled up with a community's ongoing identity). According to BLM Manual 8100, the term cultural resource refers to archaeological, historic, or architectural sites, structures, or places with important public and scientific uses. This can also include Traditional Cultural Places and Sacred Areas, which are properties that derive their significance from traditional values associated with a particularly social or cultural group, such as an Indian Tribe or local community or enclave. Traditional Cultural Places has been expanded to include not only physical places and spaces, but objects and more intangible aspects of cultural practices, such as the practice of harvesting hazelnut by basketmakers in a particular basketmaking tradition. Traditional Cultural Places are identified by the Tribe or other socio-cultural group that is associated with the resource and able to assign the appropriate cultural value.

As a federal undertaking, the implementation of an integrated plan requires the BLM to comply with Section 106 of the National Historic Preservation Act (NHPA) (36 CFR 800; 54 USC 306108), which is a consultation process obligating all federal agencies to identify historic properties (i.e., those cultural resources that are listed in, or eligible for listing in, the NRHP) and consider the effects of its actions on those important cultural resources. Such actions (also known as federal undertakings) may include high-level programmatic assessments related to planning efforts or broad geographic use implications, or project-specific impacts and effects. Therefore, because the BLM must consider the effects of its decision whether to implement an integrated RMP, the analysis area for cultural resources coincides with the BLM-administered lands in the planning area where both above-surface and subsurface activities are permitted. This analysis area reflects the scale of effects anticipated to cultural resources and accounts for potential direct, indirect, as well as cumulative impacts that could result in adverse effects to historic properties (i.e., cultural resources that qualify for the NRHP), as defined under 36 CFR 800.5(a)(1) (Criteria of Adverse Effect). In addition to the NHPA, cultural resources on federal lands are protected under other legislation, including the Antiquities Act of 1906 (43 CFR 3; 54 USC 320301 et seq.), the Archaeological Resources Protection Act of 1979 (ARPA) (43 CFR 7; 16 USC 470 et seq.), American Indian Religious Freedom Act of 1978, the Native American Graves Protection and Repatriation Act (NAGPRA) (43 CFR 10; 25 USC 3001 et seq.), as well as the FLPMA, and other laws, regulations, executive orders, secretarial orders, and agency policies.

Overall, the resources in the analysis area reflect the dynamic conditions of human behavior and the ways humans have interacted and utilized the region and its resources. This correlation between landforms, hydrology, coastlines, vegetation, and animal populations and human use includes prehistoric interactions and resources extending at least 8,000 years ago to the present day. Most of this time coincides with the

inhabitation of North America by ancestors of Native Americans. However, it is only within the last 500 years where other cultures, namely those associated with European exploration, began interaction with the region, most of which was relegated to the Pacific Coast until inland explorations and settlements began in earnest approximately 200 years ago.

The types of cultural resources present on BLM-administered lands in the planning area reflect an expansive period of human interaction and transformative changes in settlement and use patterns. Pursuant to its obligation under Section 106 review, the BLM must make a “reasonable and good faith effort” to identify and inventory historic properties that may be affected by the implementation of its decisions. To date, about 15–20 percent of the BLM administered lands within the planning area (i.e., the analysis area) have been surveyed for cultural resources. Currently, only six properties in the analysis area are listed in the NRHP. All of these properties are categorized as districts, meaning they are a collection of multiple resources that come together to form a unified entity. Four of these districts contain archaeological resources; the other two consist of historical community development associated with the built environment.

Although only six properties in the analysis area are formally listed in the NRHP (**Table D-54**), many other cultural resources have been determined either eligible or potentially eligible for NRHP listing. Many additional cultural and archaeological resources have yet to be evaluated for the NRHP. The majority of these, more than 2,000 cultural resources, are archaeological resources. Because relatively little of the analysis area has been subject to survey, the BLM has developed GIS-based sensitivity models to assess cultural resource sensitivity in an effort to predict the location of such sites to assist with planning efforts. Despite the usefulness of predictive modeling for certain resource types, specifically sensitivities of pre-contact habitation sites, these models have limitations in identifying other resources, such as petroglyphs, pictographs, and rock shelters on more varied terrain, as well as certain types of historic-era resources. Therefore, the potential remains high for unknown, yet-to-be-identified cultural resources to be present throughout the unsurveyed portions of the analysis area and other regions within the broader planning area. It is these unknown cultural resources that are at particular risk of being adversely affected by continued natural- and human-occurring activities within the analysis area.

Table D-54
Properties Listed in the NRHP within the NCIP Planning Area

NRHP Name	Location	County	Resource Types	Field Office
Upper Klamath River Stateline Archaeological District	Upper Klamath River vicinity	Siskiyou	Archaeological District	Redding FO
Forks of Butte	Forks of Butte Recreation Area	Butte	Archaeological District	Redding FO
Swasey Discontinuous Archaeological District	Swasey Drive ACEC, near Redding, CA	Shasta	Archaeological District	Redding FO
French Gulch Historic District	French Gulch, CA	Shasta County	Historical District	Redding FO
Sulphur Creek Archaeological District	Near Deer Creek Canyon	Tehama County	Archaeological District	Redding FO
Helena Historic District	Helena, CA, near Shasta-Trinity National Forest	Trinity County	Historic District	Redding FO

Environmental Consequences

Impacts on cultural resources in the analysis area are discussed in terms of direct, indirect, and cumulative impacts from each alternative that could result in an adverse effect on historic properties. As defined under 36 CFR 800.5(a)(1) (Criteria of Adverse Effect), an adverse effect occurs when a federal undertaking directly or indirectly alters any characteristics of a historic property that qualifies it for the NRHP. An adverse effect on a historic property is not limited to physical destruction or damage (such as from ground surface/subsurface disturbance), but also includes relocation of the property, changes in the character of the setting of the property, and the introduction of visual, atmospheric, or audible intrusions to the environment. Additionally, adverse effects may also occur when cultural resources are transferred out of federal control without sufficient measures in place to ensure ongoing preservation and appropriate treatment. Impacts from a federal undertaking that result in an adverse effect on a historic property may also include reasonably foreseeable effects caused by the undertaking that may occur later in time (i.e., cumulative impacts). The BLM must determine whether the alteration of character-defining features of a historic property results in the diminishment of the aspects of integrity (i.e., location, design, setting, materials, workmanship, feeling, and association) to the extent that the degree of alteration would constitute an adverse effect under Section 106 of the NHPA.

Impacts Common to All Alternatives

Generally, under all alternatives, compliance with existing laws would prioritize the protection of culturally important resources and historic properties. In accordance with Section 110 of the NHPA (16 CFR 470 et seq.; 54 USC 306101(a) and 306102), the BLM is responsible for continued identification, evaluation, and protection of historic properties within its jurisdictions. Continued efforts to identify, evaluate, and inventory cultural resources would continue in accordance with Section 110, as well as other BLM policies. Additionally, because the Section 106 process would be initiated at the project-specific level, inventory would also continue to occur on a project-by-project basis, as required. Under Section 106, if historic properties are present, the BLM must implement efforts to avoid, minimize, or mitigate adverse effects. This would occur in tandem with further coordination by the BLM and other relevant federal agencies with the California State Historic Preservation Officer, Tribes, the Advisory Council on Historic Preservation, and other potential consulting parties such as local/regional governments, non-profits, organizations, and the general public. Similar reviews would be required under other federal legislation.

Common to all alternatives, the identification of cultural resources would continue under these regulatory processes. Potential effects to cultural resources associated with all projects, permits, and other federal undertakings related to resources and resource use on BLM-administered lands would be addressed during project design phases, primarily through the Section 106 review process in accordance with 36 CFR Part 800. Where mitigation is required, mitigation measures would be informed by the identification of historic properties, Tribal and public consultation, and an assessment of effects. This includes Post-Review discoveries of cultural resources, which can occur during project implementation, construction, and use. At the project level, monitoring protocols and Post-Review Discovery Plans are typically in place to avoid effects to previously unknown cultural resources, primarily by way of:

- Stoppage of all undertaken work and suspension of activities;
- Informing BLM cultural resources staff immediately; and

- Ascertaining the potential importance of the find and determining appropriate next steps in consultation with relevant parties and in adherence to other laws, including ARPA and NAGPRA, and other BLM policies, procedures, and directives.

However, despite these regulations, policies, and procedures, the potential for adverse effects related to cultural resources remains, particularly relative to presently unknown, yet-to-be-identified resources that may be impacted and affected by unanticipated events (e.g., wildfires, inclement weather, increased erosion potential), other natural processes, as well as a variety of human activities.

Some of the most pressing challenges related to cultural resource management on BLM-administered lands, as well as other jurisdictions within the broader planning area, are related to climate change. This is manifest through slow procedural changes related to changes in natural processes, as well as the compounding increase in damaging events such as intensive storms and increased frequency of wildfire. Under all alternatives, the increase in climate change-related challenges, which have the potential to adversely affect both documented and undocumented cultural resources, is constant. While certain alternatives have select management strategies to address and mitigate some of these climate-related issues, the trend of climate change will continue to present challenges for the protection and preservation of cultural resources throughout the decision area.

With several resource types, particularly those related to sensitive environments, ecologies, and populations, each alternative would include protective measures to stabilize, maintain, and enhance natural and other environmental qualities. While the scope, scale, and locations of these protective measures would vary depending on the alternative, the overall preservation management approaches would be the same under all alternatives. Summaries of these resource types and the implications for cultural resource management are as follows:

- **Fish:** The protection and promotion of healthy fish stocks, which are an integral regional resource, are largely associated with the maintenance and restoration of watersheds and habitats. While there is the chance that certain fish management approaches, including human-made fish migration tools (i.e., fish ladders), have the potential to impact physical aspects of cultural resources as well as overall settings, these issues would be addressed at the project design level and through Section 106 consultation. Generally, protection and promotion of habitat would ensure the preservation and improvement of existing conditions within these locations, reducing potential impacts to the setting of cultural resources in the vicinity.
- **Coastal Resources:** As part of changes to the coastline, particularly with sea level rise and other issues related to climate change, BLM will monitor cultural resources for a change in condition. If monitoring indicates that there may be a potential loss in resources, BLM will initiate Tribal consultation and an appropriate management response. While this approach does not account for any unknown cultural resources, it will offer additional protection of known resources across all alternatives.
- **Wilderness:** Wilderness areas and WSAs are afforded some of the strictest protections through the limiting of use and access. Where strict management of activities and monitoring of natural processes within wilderness characteristic areas occur, this would pose minimal effects to cultural resources, although the restrictive nature would also present challenges for conducting cultural resource surveys or responding to inadvertent discoveries.

- **Soils:** All soil preservation and protection measures would aim to provide erosion control measures related to natural processes, surface-disturbing activities, or high levels of access and use. Cultural resources, particularly shallow archaeological resources, are at risk of damage from erosion and exposure. Soil protection measures will protect the integrity of both known and unknown cultural resources.
- **Plants and Vegetation:** Efforts to manage vegetation (including nonnative/invasive species) would continue to aim to enhance existing conditions, which could result in protection for cultural resources through improved habitat. Where such measures involve vegetation removal and/or ground disturbance, these actions could physically impact cultural resources, however, such issues would be considered under the Section 106 review process at the project level, including monitoring of any important cultural resources where vegetation treatments would occur. Additionally, historic cultivars in original settings (e.g., apple, pear and fig trees; vinca, and ivy) can be preserved and protected where feasible and depending on the project.
- **Visual Resources:** These resources are associated with specific classes ranging from the most protective (VRM Class I), which requires the preservation of existing landscapes, to the least protective (VRM Class IV), which allows for major modifications. In areas designated as VRM Class I and Class II, cultural resources would be protected from direct, physical alterations, as well as visual encroachments that have the potential to affect the integrity of setting feeling, and the broader historical sense of place. VRM Class III provides some protections, although these effects would vary and require specific analysis through the Section 106 review process.

Under each of these resource programs above, the BLM would implement protective measures that would limit development and use, either by limitation, restriction, or complete closure and prohibition, which would protect cultural resources from increased developmental pressures, exposure, and infringement. This would reduce the potential for direct and indirect effects to cultural resources, maintaining higher levels of historical integrity.

Across all alternatives, forestry resources have the potential to result in ground-disturbing activities, both through increased access, disruption of historical settings, use of heavy machinery, and ground-disturbing activities that remove timber from the landscape. While management approaches would vary between each alternative, generally, forestry resources are carefully managed to avoid sensitive resource areas, including cultural resources, and provide buffer areas around watersheds, which can also have heightened sensitivity for cultural resources. Furthermore, planting and replenishing of timber can be beneficial for improving erosion conditions, which, in turn, can reduce the potential for damage to cultural resources.

Wildfire management under all alternatives are first and foremost geared toward the protection of sensitive habitats and ecosystems, as well as general public health, safety, and the preservation of property. Under all alternatives, the risk would continue of potential destruction and damage resulting from wildfire and wildfire suppression actions to both known and unknown cultural resources. Wildfire preventative measures, however, would be strategic in nature and would take into consideration the protection of cultural resources to the greatest extent possible during a wildfire incident. Similarly, steps in all measures would be taken to utilize existing fire breaks, where feasible, to limit further ground-disturbing activities and disruptions to historical settings. With respects to vegetation clearance outside of wildfire operations, those efforts would require cultural resource survey and investigative work prior to implementation under all alternatives through Section 106 review and other relevant federal regulations.

Travel through BLM-administered lands and the use of trails also has the potential to affect cultural resources. Generally, access and specific modes of transportation are limited to existing and designated roadways and trails, reducing the potential to impact cultural resources. However, under all alternatives, the potential would continue for increased user-created, unauthorized trails and points of access. In these instances, unauthorized visitation and vehicular traffic could affect cultural resources through physical disturbances as well as changes to historical setting through the introduction of increased noise levels and alterations to atmospheric qualities through increased human presence and the potential presence of motorized vehicles. Where new trails are proposed through recreation management, these actions would be subject to compliance with Section 106 review and other federal regulations. The specifics of travel plans are generally addressed within the context of travel management within specific areas, where characteristics of the area and the practical implementation of any new trail alignments for both nonmotorized and motorized travel, as well as other access issues, would be addressed through the regulatory process at the project level.

Under all alternatives, there is the potential for impacts to cultural resources in areas that are available to livestock grazing due to physical ground disturbance (i.e., trampling, trailing, wallowing). These impacts would be greatest where livestock congregate, such as around water sources, corrals, trailering areas, and trailing along fence lines. However, impacts would be limited to areas that are in active grazing allotments, which are anticipated to be fewer acres than the total available for grazing under each alternative. Under any of the alternatives, designating portions of the analysis area as unavailable to grazing would limit impacts associated with grazing on cultural resources within those areas. Additionally, any new range improvements as well as livestock grazing permit renewals would be subject to the Section 106 review process, again requiring the BLM to consider effects to historic properties. However, impacts on currently unknown, yet-to-be-identified cultural resources that are within permitted grazing allotments and active pastures would continue to be a risk under any of the alternatives.

All land tenure changes are subject to review and compliance under Section 106. Where land is changing from one federal agency to another (either a federal agency to the BLM or vice versa), these lands would be guaranteed the same cultural resource protections under Section 106 and similar legislation, policies, and guidelines. Where previously private land is acquired by the BLM, the potential effects on cultural resources would be reduced under all alternatives, as these lands would be subject to the same protection and compliance requirements under federal jurisdiction. Lastly, when land is proposed to be disposed of, this, too, must undergo review under Section 106, where cultural resources must be identified, and adverse effects assessed. While mitigation measures related to the transfer and sale of land outside of federal control may outline specific treatments, the loss of federal regulatory protections have the potential to affect cultural resources indirectly and adversely in the future under any of the alternatives.

Land use authorizations related to realty are subject to Section 106 review and other federal regulations, and therefore, consideration of cultural resources would continue on a project-by-project basis for these actions under all alternatives. ROWs and easements would require identification of cultural resources in addition to project-level findings of effect, including, but not limited to, authorizations/renewals for transmission lines and associated infrastructure, utility facilities, roads, and pipelines. Review would take into consider not only direct, physical effects to cultural resources through ground-disturbance activities during construction and operational use, but also visual and atmospheric impacts on a historic property's integrity of setting and feeling as well.

Mineral development is an invasive ground-disturbing activity that could affect cultural resources. While areas within the BLM lands administered by the Arcata FO and Redding FO are generally considered to have low economic mineral potential, public land continues to be open to mineral resource development. As with all federal undertakings, all alternatives would also require cultural resource surveys and identification efforts in order to assess potential effects to historic properties that may result from any mineral leases or explorations prior to issuance of any permit or approvals.

Across all alternatives, a topic of concern related to potential adverse effects to cultural resources is casual-use mining and prospecting. The relationship of the region's history, particularly to valuable minerals such as gold, has made casual-use prospecting and mining a common use on federal lands throughout Northern California, not just on BLM-administered lands. While these casual mining uses are open and permitted under all alternatives by law, the potential damage to cultural resources related to these activities is a management challenge. While gold panning can present challenges related to disturbance of potential archaeologically sensitive areas along waterways or changes to various landscape forms, metal detectors and other prospecting tools have the potential to affect cultural resources in a more direct capacity. The use of metal detectors can disturb sensitive soils and expose cultural materials and artifacts, resulting in their removal by prospectors. This would effectively remove potentially important cultural materials from their original setting, regardless of whether they are relocated, discarded, or collected. This can result in a loss of locational and contextual information if cultural materials are disturbed, negatively affecting the scientific and cultural values of the resource. Under all alternatives, casual-use mining and prospecting are accepted legal uses, although efforts to educate and promote cultural resource sensitivity are outlined, as are the use of specific designations where these activities may not occur. The latter is primarily within sensitive habitats, although areas of high cultural resource sensitivity are also outlined. Any future management decisions would be subject to the Section 106 review process, as well as other federal regulations, under all alternatives.

When recreational opportunities and uses are increased, this has a direct correlation with a rise in access and use, which, in turn, results in additional potential disturbance and alterations to cultural resources. This potential is increased when recreational use is increased in more sensitive areas, and when general user numbers and populations of surrounding regions continue to increase. The potential effects stemming from this include not only physical, effects related to use activities (soil disturbance, compaction, drainage issues, unauthorized trails, intrusion into sensitive areas, illegal collection of cultural materials, and vandalism), but alterations to a cultural resource's sense of place through increased users and a broader change to the audible and atmospheric qualities of historical settings. In all alternatives, efforts to limit expanded recreation use from sensitive areas are included in the management strategies. This is particularly true of OHV and motorized uses, which are restricted further to only specific, designated trails and user areas. Other potentially damaging forms of recreation to cultural resources can include firearms shooting, mountain biking, hunting, fishing, and dispersed camping. Under all alternatives, the BLM would continue to prioritize protection and enhancement of both natural and recreational values, along with sensitive resource areas, including cultural values, by outlining areas where these types of recreational activities should be available, restricted, or prohibited. Furthermore, all alternatives suggest recreational use monitoring to ensure that fluctuations in recreational uses do not result in impacts on cultural resources. In these instances, observed patterns of potential disturbance may result in closure of a particular sensitive area to further recreation use to protect the integrity of important cultural resources. Additionally, all alternatives call for specific identification of heritage areas that contain cultural resources, as well as targeted interpretive and education campaigns to raise awareness of cultural resources and

potential sensitivity, while not disclosing information that could lead to physical compromise through collection, vandalism, or other forms of disturbance. All alternatives also call for increased partnership with law enforcement related to illegal collection, illicit removal, and damage to resources, including cultural resources. Again, any management decisions made by the BLM for recreation would be subject to the Section 106 review process and other relevant federal regulations.

Renewable energy and promotion of various alternative energy sources beyond traditional fossil fuels is relatively new and post-dates many of the existing management protocols. Efforts specific to renewable energy that are consistent with all alternatives are primarily related to solar energy and geothermal energy development. All alternatives have strict limitations on solar development, particularly at the utility scale. This is due in large part to the environmental constraints of the area and the lack of ideal solar-capable lands. Geothermal opportunities, on the other hand, are allowed under the FLMPA, but specifically require identification of resources, assessment of effects, and various mitigation measures to be implemented, including construction monitoring. Although clearly outlined for geothermal resources, these steps are also integral parts of the Section 106 review process and would be utilized for all generation and renewable energy projects across all alternatives, reducing the potential for impacts on cultural resources. Wind generation applications would be considered on a case-by-case basis across all alternatives, although other restrictions and requirements are included in some alternatives.

Under all alternatives, lands with special designations receive additional protections and limitations on use. This is particularly true of ACECs, National Scenic Trails and Historic Trails, VSRs, wilderness areas, and other designations. Under all alternatives, added limitations and protections would limit the disruption to a number of resource sensitivities and habitats by limiting, restricting, and prohibiting certain uses and developments. For cultural resources, particularly those that are yet to be identified and are present in unsurveyed areas, additional protections through these designations would ultimately preserve the integrity of these resources from human-related impacts. While effects from natural processes may continue, these, too, would likely be managed through specific resource approaches to preserve and enhance habitats. The sensitivity to a specific resource type or use would, through the regulatory requirements under Section 106 review and other federal regulations, also extend to cultural resources, ensuring that protections and protocols would be in place either during the project design phases or in adherence to unanticipated discovery protocols. Specific to wilderness areas, the acreage of dedicated wilderness areas would remain consistent across all alternatives at 50,040 acres. There would be no change or fluctuation related to the size of the current WSAs or wilderness areas under any of the alternatives.

Riparian management areas would provide similar incidental protections for cultural resources to those discussed for special designation areas above. Under all alternatives, the BLM would require that management actions would not retard attainment of the Northwest Forest Plan (USDA and USDI 1994) Aquatic Conservation Strategy objectives. The objectives would help maintain and restore the physical integrity of the aquatic system, and thus would help preserve the integrity of cultural resources in these areas from human-related impacts. Riparian management area widths would differ across the alternatives based on the type of aquatic feature and other factors, meaning that the size of the area that would be afforded incidental protections would also vary across the alternatives. Ultimately, there would not be an appreciable difference between the alternatives, in the BLM's ability to preserve cultural resources in riparian management areas while not retarding attainment of the Aquatic Conservation Strategy objectives.

Consultation with Tribes is inherent to the management of cultural resources. While Tribal Interests are typically addressed within the context of cultural resources, due in large part to the overlapping and shared regulatory frameworks that often combine both cultural resources and areas of Tribal cultural importance, Tribal Interests are addressed in support of this effort as a standalone section (see **Section D.5.3**). With regards to cultural resources, all alternatives would require consultation with federally recognized Tribes as part of the Section 106 process. Compliance with ARPA, NAGPRA, other federal regulations and orders, and pertinent BLM policies addressing inadvertent discoveries of cultural resources (prehistoric and historical) and encountering human remains would continue in a consistent manner across all alternatives beyond Section 106 review in project consultation.

Under all alternatives, increased education and interpretation opportunities related to cultural resources and management would occur. While there are no management objectives related to education and interpretation outlined in the current RMPs, these tools are implemented to promote understanding and increase awareness related to the importance of the preservation and protection of cultural resources and their settings as a tool to reduce potential impacts on these resources. Interpretation and education efforts for specific resources are also common mitigation measures developed through project-specific Section 106 review, and conformance to other regulations, including ARPA. These general trends in the development of interpretive materials and educational opportunities would continue across all alternatives, reducing potential adverse effects to cultural resources.

Public health and safety measures that would be implemented across all alternatives, specifically those related to illegal dumping, would reduce the impacts on cultural resources. Illegal dumping can affect cultural resources through destructive physical action related to dumping itself, as well as to historical setting and the overall landscape. These impacts would occur on both known and unknown cultural resources. Furthermore, dumping of hazardous materials has the potential to physically affect cultural resources by introducing new elements or characteristics that could alter the physicality and condition of resources and further degrade them, particularly where sensitive resources may be present. In all alternatives, efforts to stop activities such as illegal dumping would result in the reduction of adverse effects to cultural resources, although the potential for impacts would likely remain where activities continue.

Alternative A

Alternative A would continue current protective measures, restrictions, and other policies related to the protection of fish habitat, wilderness characteristics, soils, watersheds, vegetation, wildlife, and special status species. These protections related to the preservation and enhancement of these resource types can provide indirect protection for cultural resources by limiting access and use to areas identified as culturally sensitive, reducing the potential for disturbance of cultural resources. Furthermore, current actions for BLM-administered resources would include ongoing efforts to restore and enhance natural qualities, which, in turn, create conditions that improve the overall scenic quality of an area, which would most likely be beneficial to the overall setting and similar aspects of historical integrity for cultural resources. General cultural resource protection and compliance would continue, and impacts described under the *Impacts Common to All Alternatives* discussion, outlined above, would be the same under Alternative A.

The resources where the BLM does not currently identify objectives, decisions, or actions in the approved RMPs include climate change, cave and karst, and socioeconomic and environmental justice. Under these

resource types and uses, effects to cultural resources are assessed at the focused planning or project level through the Section 106 process and other relevant laws and/or regulations as well as BLM policies. Other resources and uses where management protocols are limited to a project-level assessment scale or catered to specific geographic locations or management areas include coastal resources, renewable energy development and alternative energies, congressionally designated National Scenic and Historic Trails, public education and interpretation, and public health and safety.

Current measures and management protocols related to protection and both surface and subsurface disturbance restrictions would occur to protect sensitive resource types of fish, soils, plants and vegetation, water quality and watersheds, and wildlife under Alternative A. These measures would continue to provide indirect protections for cultural resources, particularly in identified ACECs and those areas likely to be identified as ACECs in the future. Under Alternative A, the acreage allocated for these designations would include 54,600 acres of the total 382,200 acres of the analysis area, providing indirect protection to cultural resources through other preservative measures in place to protect and enhance the conditions for these other resource types outlined above.

Specific to forestry, the conditions described under *Impacts Common to All Alternatives* would continue. Efforts to enhance old-growth forest characteristics, encourage planting of new trees to replenish forest characteristics and habitats, and reduce erosion would all continue in its current practice, providing indirect protection to cultural resources. Simultaneously, the impacts on cultural resources, particularly unknown cultural resources, through some timber harvesting practices may continue, although cultural controls related to areas of cultural sensitivities are in place and would continue to reduce the potential for such effects.

Under Alternative A, protection of visual resources would provide indirect protection to the setting and, to a degree, the integrity of feeling for cultural resources at the current levels. Specifically, VRM Class I and Class II designations would remain at 59,000 acres and 24,000 acres, respectively. This, too, would limit surface-disturbing activities in these areas, further managing to reduce potential effects to cultural resources. Under Alternative A, this total acreage of 83,600 acres would account for 21 percent of the total 382,200 acres of BLM-administered lands in the planning area. Much of the remaining area—297,000 acres of the total 382,200-acre land analysis area—would remain VRM Class III and would, thereby, partially retain the existing character of the landscape. While this would provide some protection, the potential effects on cultural resources would increase within this area. The remaining 1,600 acres would be VRM Class IV, where significant modifications to the landscape are allowable, although the nature of any large-scale projects and the limited available acreage under this class would be manageable in terms of the ability to identify and resolve adverse effects related to cultural resources. As such, the acreage within the VRM Class III lands, which covers 78 percent of the total BLM-administered acreage, presents the broadest challenge to the setting of cultural resources under this alternative.

OHV use would be closed across 59,200 acres under this alternative, which would afford protection to cultural resources that could otherwise be impacted by cross-country travel. OHV travel would be limited to existing and designated routes across 322,800 acres under Alternative A, with 190 acres open to OHV travel without restriction. It is within these acres that cultural resources are most at risk for damage from these types of activities, as restricting OHV use to existing and designated routes would at least provide indirect protections to cultural resources with the caveat that the risk for impacts from improper use would remain. Under Alternative A, current grazing allocations would result in 195,300 acres (51 percent

of the decision area) being unavailable for livestock grazing, while 186,900 acres (49 percent of the decision area) would be available for livestock grazing. Of the acres available for grazing, 62,000 acres are in grazing allotments. Impacts on cultural resources would be limited to those areas within active allotments. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP. The conditions described above under *Impacts Common to all Alternatives* would persist in areas that are associated active grazing allotments.

Land tenure changes would continue to be subject to review under Section 106 review and other federal regulations, with indirect impacts related to cultural resources increasing or decreasing, depending on whether lands are being acquired or disposed and transferred out of federal ownership. Under Alternative A, lands identified for retention include 281,400 acres, or 74 percent of the decision area. This would leave 26 percent, or 101,000 acres, open to disposal. While the specifics of those disposal activities—transfer to other federal agencies or private sale—are unknown, the increased rate of disposal under current management practices increases the potential for impacts on cultural resources. While the transfer of land is addressed through Section 106 review during which the potential effects to cultural resources would be addressed, cultural resource protections are not guaranteed on lands released from federal jurisdiction.

With regards to ROW development, these would continue to be addressed at the project design and review level, with potential effects related to cultural resources assessed through Section 106 review and other relevant federal regulations. Currently, only 400 acres are either existing ROW corridors or potential ROW corridors, accounting for less than 1 percent of the surface decision area. However, land open to ROW authorization under Alternative A is by far the highest, accounting for 82 percent of the surface decision area, or 312,000 acres. This would leave 58,500 acres excluded from ROW development (15 percent) and 11,300 acres in ROW avoidance areas (3 percent). While project-level review of ROWs would continue to provide protection, the overall openness of potential ROW development under current land management practices would have a heightened potential to affect cultural resources.

For mineral development, the current management practices would be consistent with the conditions described under the *Impacts Common to All Alternatives* section. There would continue to be 60,000 acres withdrawn from locatable minerals on BLM-administered surface lands, with 322,200 open to such entry under this alternative.; there are no recommendations for withdrawal from locatable mineral entry under Alternative A. On split estate (BLM mineral estate [split estate] only), there would continue to be 400 acres withdrawn from locatable mineral entry, with 294,700 open to such activities. Fluid and nonenergy leasing minerals on BLM-administered surface lands under this alternative would continue the closure of 61,300 acres to mineral leasing, with 19,300 acres open to mineral leasing, but subject to no surface occupancy, with 301,600 acres open to mineral leasing, subject only to standard terms and conditions. On split estate, 400 acres would be closed to mineral leasing under Alternative A, and 300 acres would be open (subject to no surface occupancy), with an additional 294,400 open to mineral leasing under standard terms and conditions. Relative to mineral materials on BLM-administered surface lands, 81,800 acres would remain closed to mineral materials development, 300,400 would remain open and on split estate (BLM mineral estate [split estate] only), 800 acres would be closed to mineral materials development, and 294,300 acres would be open under this alternative. The BLM would still adhere to its obligations under the Section 106 review process and inadvertent discovery protocols under Alternative A for new/renewed entry and leasing, which would reduce potential impacts on cultural resources.

Recreational development under Alternative A would largely occur within SRMAs, with 40,190 acres dedicated over three specific locations, including Forks of Butte Creek, which includes NRHP-listed historic properties. These areas, particularly where cultural resources are prevalent, would continue to be monitored related to these impacts. Recreational opportunities available would also continue to be appropriate to the sensitivities of the particular area. Under current management practices, no areas would be designated ERMA, where recreational opportunities are commensurate with the management of other resources, including cultural resources.

As outlined previously, ACECs would overlay 40,190 acres (11 percent) of the BLM decision area, providing cultural resources within those areas with indirect protection from various development pressures. This includes several ACECs with notable cultural resource sensitivities, including Forks of Butte Creek, Sacramento River Bend, and Swasey Drive. Under Alternative A, no national historic trails would be designated as or included in additional ACECs.

Alternative B

Under Alternative B, cultural resources would generally experience more tailored management approaches that would supplement continued BLM obligations under the Section 106 review process and other regulatory compliance applicable to cultural resources management. Summaries of increased cultural resource-specific management activities based on resource type and uses include the following:

- **Cave and Karst:** Caves with potential cultural resources would be prioritized in ACECs, including the assessment of cultural resources related to rock shelters and natural caves. Cave access with important resources would be limited following the discovery of cultural resources, and the areas surrounding such locations would also be protected.
- **Fish:** Key watersheds and habitats would continue to be protected, enhanced, and restored. This would emphasize continued practices outlined under the *Impacts Common to All Alternatives* section, with measures to reduce invasive uses and natural processes, namely erosion. Where fish management differs in relation to cultural resources under the action alternatives include increased consultation with Tribes to build cooperative relationships and identify future land acquisitions. Further discussion of fish within the context of Tribal Interests is outlined under **Section D.5.3.**
- **Coastal Resources:** Efforts to identify cultural resources would be focused where potential loss of coastal resources is greatest due to weathering and erosion, particularly in relation to increased climate change-impacted storms.
- **Soils:** The BLM's best management practices to reduce erosion would be implemented in targeted situations related to road management, wildfire burn areas, and other areas with high erosion potential.
- **Plants and Vegetation:** Vegetation management actions would be implemented to reduce the likelihood of catastrophic wildfire that would alter plant communities, as well as increase the potential for adverse effects through damage and destruction of cultural resources.
- **Wildlife:** Abandoned buildings, mines, structures, and other aspects of the built environment would be preserved where sensitive species are utilizing these as habitat space. While this has the potential to alter and damage resources, specifically historical built environment resources, the added level of protection and likely stabilization requirements may result in effects related to total loss of a resource, unless public safety concerns through hazardous conditions are present.

- **Wildfire:** Efforts to restrict fire suppression activities in cultural sites or landscapes would be undertaken to reduce and minimize resource damage, wherever feasible. Heavy equipment use for fire suppression would also be restricted around culturally important sites, including cemeteries, burial sites, and ACECs.
- **Land Tenure:** Lands with heritage areas and cultural resource sensitivities must be retained. This includes Tribal cultural properties, known cultural resources, cultural landscapes, and lands identified as having heightened cultural resource sensitivities. Similarly, potential acquisitions with high cultural resource sensitivities and known cultural resources should be prioritized.
- **ROW Authorizations:** Identified TCPs would be managed as ROW avoidance areas, and all future ROWs would continue to be subject to project-level review under Section 106.
- **Minerals:** Locatable mineral exploration would be allowed. Mineral exploration permits and leases would continue to comply with Section 106.
- **Recreation:** Unauthorized trails, camping sites, and other forms of invasive recreation would be remediated. Monitoring of recreational use may result in the closure of select recreation areas or facilities if uses are found to impact or infringe upon important cultural resources. Specific recreation and travel plans, including those related to motorized travel uses, would be planned and catered to the specific geographic location.
- **Renewable and Alternative Energy:** All alternative and renewable energy projects would be reviewed at the project level through Section 106 review to assess potential effects to cultural resources, as well as other relevant regulations, including the FLPMA. Additional protections would extend into designated areas where visual resources are managed, as well as ACECs. There are no designated leasing areas for wind development within the decision area, and wind development would not be allowed within ACECs with cultural values or areas of other special designation. Offshore wind development is not within the jurisdiction of BLM, but rather the Bureau of Ocean Energy and Management, although collaboration and coordination with BLM would ensure the compatibility with BLM management and protection practices, and to address actions with the potential to adversely impact cultural resources.
- **Riparian Management Areas:** Management of riparian areas would consider and implement measures to provide protection of cultural resources, wherever appropriate.
- **Socioeconomic:** The BLM would continue to work with other federal agencies, the State of California, counties, local partners, and Tribes to enhance cultural resource management, particularly in areas of increased recreation and along watersheds, as part of broader management and protection strategies.
- **Education and Interpretation:** Key cultural resource sites would be interpreted, particularly in areas where increased visitation and interest puts these resources at risk. These education and interpretation elements would be outlined in an interpretive plan specific to that locality, resource, or general culturally important and historical themes. Confidentiality regarding archaeological resources and cultural resources with Tribal sensitivity would be adhered to avoid impacting the integrity of these sensitive resources. Identification and execution of these strategies would be executed in close cooperation with Tribal representatives and partners.
- **Public Health and Safety:** The BLM would enter into more agreements, such as Memorandums of Understanding, with Tribes and local law enforcement entities to facilitate increased protection of resources, including cultural. Cleanup of invasive, unauthorized uses—illegal dumping, trespass

cannabis cultivation, remnants from fireworks, and informal shooting ranges—would be prioritized where risks to potentially impact cultural resources are observed.

Alternative B would provide increased indirect protections to cultural resources through the expansion of various designations and resource management strategies beyond the *Impacts Common to All Alternatives*. Under this alternative, there would be 88,820 acres designated as ACECs, which equates to 34,220 more acres than Alternative A. This would occur through the establishment of new ACECs and the combining of new/existing ACECs under this alternative. These designated areas would provide additional opportunities for preservation and protection, which would reduce potential indirect and direct effects on cultural resources under Alternative B.

Visual resources under Alternative B would have increased VRM Class I designations as all other alternatives at 70,600 acres, and VRM Class II acreage would be 72,400, notably higher than under Alternative A and elevated over other action alternatives. This expanded VRM Class I and Class II designations under Alternative B would decrease potential indirect impacts on cultural resources and direct impacts to historical integrity of setting, as well as characteristics of broader cultural landscapes.

Under this alternative, there would be 14,400 more acres closed to OHV travel than Alternative A. This would result in decreased risk of impacts on cultural resources that may be along those existing and designated routes. However, the BLM would likely implement protective strategies through its cultural resources program to ensure effects across all alternatives are minimized. There would be no change to the number of acres open to OHV travel under this alternative, as it would remain at 190 acres.

Similar protections to cultural resources, both direct and indirect effects, would be provided through use restrictions, the majority of which are the highest under Alternative B. ROW exclusions would be increased at 135,100 acres under this alternative, over double the acreage as under Alternative A and higher than all other action alternatives. The areas where ROW avoidance would be in place under this alternative would total 135,900 acres (124,600 more acres than Alternative A), with 201,200 fewer acres open to ROW authorizations (at 110,800 acres) compared with Alternative A. This is the least number of acres of ROW exclusion under any of the alternatives. A smaller number of acres open to ROW authorization would mean that impacts on cultural resources (which would occur through ground disturbance and alteration of the landscape) would be reduced across the analysis area. Although the risk of impacts would remain in open areas, new/renewed authorizations would be required to go through the Section 106 review process, in addition to adhering to all relevant federal regulations, executive/secretarial orders, and policies, and the BLM would need to consider impacts on historic properties.

Alternative B also has a small amount of land identified for disposal, with a total retention of 376,300 acres, or 99 percent of the analysis area compared with Alternative A, which would only retains 74 percent. Alternative B would most likely retain more land within federal control. As such, Alternative B would reduce impacts on cultural resources by retaining an increased amount of land under federal ownership and protection through regulatory compliance processes, such as Section 106, other relevant federal regulations, and BLM policies. Additionally, lands with known cultural resource sensitivities or heritage values would be retained and would not be disposed under this alternative.

Under Alternative B, 232,800 acres would be available for livestock grazing, of which 62,000 acres would be managed as grazing allotments; therefore, impacts would be limited to those areas where grazing allotments are active. While the acreage available to grazing would be greater under Alternative B (232,800

acres) than Alternative A (186,900 acres), the acreage managed as grazing allotments would be similar to Alternative A. Potential impacts to cultural resources would be limited to those areas where grazing allotments are active. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP, therefore, the potential impacts to cultural resources within grazing allotments are not anticipated to increase. Additionally, new or renewed grazing authorizations would be required to go through the Section 106 review process so that impacts from these types of activities to historic properties would need to be considered at the project level.

Under Alternative B, there would be 104,700 more acres recommended for withdrawal from locatable mineral entry than under Alternative A on BLM-administered surface lands within the analysis area. If withdrawn, this would provide more protection to cultural resources in those areas recommended for withdrawal than under existing management. The impacts to cultural resources on split estate with regard to locatable minerals would be the same as under Alternative A, as it would not change between alternatives. For fluid and nonenergy mineral leasing on BLM-administered surface lands in the analysis area, there would be 126,500 more acres closed off to mineral leasing. There would also be 140,300 fewer acres open to mineral leasing subject only to standard terms and conditions, with 13,800 more acres open to mineral leasing, subject to no surface occupancy. While this increases the risk of impacts on cultural resources, any new mineral leasing would be subject to Section 106 review with the intent of avoiding, minimizing, or mitigating such impacts on historic properties. Impacts on cultural resources from fluid and nonenergy mineral leasing on split estate lands within the decision area would be the same as those under Alternative A. For mineral materials on BLM-administered surface lands, there would be 124,900 more acres closed to such mineral development than compared with Alternative A, which would eliminate impacts on cultural resources from these activities in these closed areas. Likewise, under Alternative B, 500 more acres would be closed to mineral materials development on split estate lands than under Alternative A, providing additional protection to cultural resources across a larger area (1,300 acres) under this alternative compared with existing management.

For recreation, protections would be varied under Alternative B. For SRMAs, there would be nearly half the acreage designated under Alternative B (23,800 acres) compared with Alternative A (40,190 acres). No ERMAs would be established under Alternative A. Additionally, 10,430 acres would be established as RMZs within SRMAs, which would remain consistent under all action alternatives. With proactive management for recreation, the BLM would have additional opportunities for interpreted sites and other instances where awareness of cultural resources and the importance of preservation and protection could help mitigate impacts imposed by increased recreational activities by visitors. Additionally, recreation management decisions on behalf of the BLM would be subject to environmental evaluation as well as review under Section 106 and other relevant federal regulations, reducing the potential for impacts.

Alternative C

Under Alternative C, impacts would be the same as those described under *Impacts Common to All Alternatives* above, as well as those described under Alternative B for cave and karst, fish, coastal management, soils, plants and vegetation, and wildlife resources, and actions relative to wildland fire management, land tenure, ROW authorization, minerals, recreation management, renewable and alternative energy, riparian management areas, social and economic conditions, education and interpretation, and public health and safety. The exception with Alternative C is the specific land allocations and protections. Generally, Alternative C would afford fewer protections to cultural resources

that would otherwise reduce impacts on cultural resources and has similar conditions as outlined under Alternative A.

Visual resources under Alternative C would offer slightly less protection to cultural resources than Alternative A because while VRM Class I resources are comparable with 500 acres less under Alternative C, and a decrease of 3,700 acres of VRM Class II compared with Alternative A. Compared with Alternative B, Alternative C provides less protection of visual resources with 12,100 fewer acres classified as VRM Class I and 51,500 fewer acres classified as VRM Class II. Both of these classifications aim to retain the existing character of the landscape and would preserve setting and broader cultural landscapes within these areas. With 301,900 acres under VRM Class III (4,900 acres more than Alternative A and 64,100 more acres than Alternative B), these areas would only need to partially retain the existing character of the landscape and would not afford the same degree of protection and preservation to setting and the characteristics of cultural landscapes as VRM Class II lands. There would only be 900 acres under VRM Class IV, which provides for significant modification of the landscape. This, however, would be 700 and 500 fewer acres for such modifications to setting and characteristics of cultural landscapes than Alternatives A and B, respectively.

Impacts on cultural resources relative to existing or potential ROW corridors would be the same as under Alternative A, as the number of acres would remain the same at 400. Alternative C would open fewer acres to ROW developments at 121,300 acres (190,700 fewer acres) than Alternative A, with an additional 155,100 acres of ROW avoidance and 35,600 more acres of ROW exclusion. While areas open to ROW authorization would continue to be at risk for increased surface disturbance and impacts on cultural resources, these ROW projects would still be subject to review at the project level under Section 106 and other federal regulations, which would address potential adverse effects specific to that locality.

Under Alternative C, 271,800 acres would be available for livestock grazing, the highest amount identified under any of the action alternatives. However, under Alternative C, 64,500 acres would be managed as grazing allotments at any given time, which is only slightly more (1,900 acres) than Alternative A. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP. Impacts to cultural resources would be limited to those areas where grazing allotments are active. While new permits would be subject to review under Section 106, the slightly increased surface disturbance associated with this use under Alternative C has the potential to result in increased adverse effects to cultural resources, particularly unknown resources. However, these potential adverse effects could be mitigated through the environmental review process, including Section 106 review and other relevant regulations, during the granting of new permits or renewal of existing permits, which would be addressed at the project level.

Under Alternative C, there would be 56,100 more acres recommended for withdrawal from locatable mineral entry than under Alternative A on BLM-administered surface lands within the analysis area. If withdrawn, this would provide more protection to cultural resources in those areas recommended for withdrawal than under existing management. The impacts to cultural resources on split estate with regard to locatable minerals would be the same as under Alternative A, as it would not change between alternatives. For fluid and nonenergy mineral leasing on BLM-administered surface lands in the analysis area, there would be 56,400 more acres closed off to mineral leasing. There would also be 90,500 fewer acres open to mineral leasing subject only to standard terms and conditions. However, under this alternative, there will be 34,100 more acres open to mineral leasing, subject to no surface occupancy. While this creates a situation that both heightens and reduces the risk of impacts on cultural resources

compared to Alternative A, any new mineral leasing would be subject to Section 106 review with the intent of avoiding, minimizing, or mitigating such impacts on historic properties. Impacts on cultural resources from fluid and nonenergy mineral leasing on split estate lands within the decision area would be comparable to those under Alternative A with only slight acreage variations. For mineral materials on BLM-administered surface lands, there would be 86,000 more acres closed to such mineral development than compared with Alternative A, which would eliminate impacts on cultural resources from these activities in these closed areas. Likewise, under Alternative C, 800 more acres would be closed to mineral materials development on split estate lands than under Alternative A, providing additional protection to cultural resources across a larger area (1,600 acres) under this alternative compared with existing management.

Alternative C identifies 49,400 acres for disposal. While this is approximately half the acreage under Alternative A (101,00 acres), this is higher than the acreage under Alternative B. The increased potential for land to leave federal control means that federal regulations that maintain preservation and protection of cultural resources may no longer apply to these lands in the future. As such, Alternative C would have an increased potential for impacts on cultural resources; however, similar to Alternative B, lands with cultural resource sensitivities or heritage values would be retained and not be disposed of. Therefore, the potential increase in disposal under Alternative C would not likely result in increased potential for adverse effects to cultural resources.

Recreation under Alternative C has the highest acreage of expanded uses for recreation. Alternative C would designate 88,270 acres as SRMAs and ERMA, an increase compared with Alternative B (45,590 acres). Although increased visitation and recreation access has the potential to result in more adverse effects to both known and unknown cultural resources, these are somewhat offset by increased education and interpretation. Furthermore, Alternative C specifically calls for some of these lands to be used for heritage tourism, and steps would be undertaken to provide “hardened” protective measures around cultural resources. The project specifics would all be subject to review under Section 106 and other relevant federal regulations. The increased levels of education, interpretation, and specific cultural resources and site management through the promotion of heritage tourism practices would likely offset some of the potential impacts related to increased use under Alternative C.

Alternative D

Alternative D would include the combination of management approaches outlined under the *Impacts Common to All Alternatives*, above, as well as those under Alternative B, above. The conditions and management practices outlined under Alternative B are generally specific to the promotion of cultural resource awareness and public education efforts to reduce potential impacts through increased understanding and appreciation of the cultural value these resources hold. Where Alternative D differs from Alternative B is the allocation of land related to increased use. Generally, Alternative D presents management approaches that are balanced between action Alternative B, with the strictest levels of protection, and Alternative C, which has the least designations and intensive protections in place. This is particularly true in most resource types and uses.

Under Alternative D, there would be 33,290 more acres designated under ACECs than under Alternative A. Again, these designated areas would provide additional opportunities for preservation and protection of cultural resources, thereby, reducing direct and indirect impacts under this alternative. Relative to visual resources, Alternative D is nearly identical to Alternative A for VRM Class I. Although Alternative D

would increase the acreage of VRM Class II by 37,000 acres compared with Alternative A, which is a notable increase. Alternative D would have 36,200 fewer acres of VRM Class III than under Alternative A, reducing the potential for increased alteration of the landscape within these areas that only need to partially retain the existing character. Again, changes to the landscape could constitute impacts to historical settings of important cultural resources and modify critical characteristics of broader cultural landscapes under this alternative because of the increase in acreage. There would be 800 fewer acres under VRM Class IV, which, again, allows for management activities that require significant modifications to the existing character of the landscape. This would reduce the degree of impact within these areas, as such substantial changes would not occur across as large an area under Alternative D as would under Alternative A.

Relative to land use authorizations, existing or potential ROW corridors would be the same, so impacts on cultural resources within such areas would be the same under Alternative D as they would under Alternative A. There would be 49,600 more acres of ROW exclusion and 153,900 more acres of ROW avoidance area under Alternative D than under Alternative A. Likewise, there would be 203,400 fewer acres open to ROW authorizations, so, overall, Alternative D provides one of the highest levels of protection to cultural resources across all alternatives pertaining to management decisions related to land use authorizations because of the acres that would be subject to exclusion and avoidance, and fewer acres open to authorization compared with Alternative A. This is also true for lands identified for disposal, which is reduced to 5,900 acres—95,100 fewer acres than Alternative A. These acres would subsequently be retained under this alternative, while they would be available for disposal under Alternative A. Again, lands with known cultural resource concerns and/or heritage values would be retained and not disposed of.

There would be 193,600 acres unavailable for livestock grazing under Alternative D0, of which, 59,000 acres would be managed as grazing allotments at any given time. Impacts would be limited to those areas where grazing allotments are active. Overall, these numbers are comparable to Alternative A and do not present a major departure from existing practices. Any new or renewed grazing authorizations under any of the action alternatives would be subject to Section 106 review and the BLM would be required to consider effects of such authorizations to historic properties at the project level. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

Under Alternative D, there would be 86,600 more acres recommended for withdrawal from locatable mineral entry than there would be under Alternative A on BLM-administered surface lands in the analysis area. Impacts to locatable minerals on split estate under Alternative D would be the same as under Alternative A. For fluid and nonenergy minerals on BLM-administered surface lands under Alternative D, there would be 102,900 more acres closed to mineral leasing than under Alternative A. However, there would be 68,600 more acres open to mineral leasing subject to no surface occupancy. Additionally, 171,500 fewer acres open to mineral leasing under standard terms and conditions. Again, no surface occupancy would afford greater protection for cultural resources due to reduced ground disturbance. Such mineral leasing on split estate would be available on 14,500 more acres under Alternative D than under Alternative A. For mineral materials on BLM-administered surface lands in the analysis area, Alternative D would increase the recommended number of acres withdrawn to such development by 127,800 acres compared with Alternative A (existing management) and would increase the recommended number of acres withdrawn to development by 4,800 on split estate. Where areas remain open to saleable mineral development, this could result in impacts on cultural resources on non-BLM surface lands, but as would be the case under any alternative, any new/renewed mineral leases that would require BLM

authorization (either on BLM-administered surface or split estate) would be subject to the Section 106 process, with effects to historic properties considered as obligated by the BLM.

Under Alternative D, the number of acres under managed recreation areas/zones would be 57,910 more acres than Alternative A. While the increased potential from recreation would, likewise increase the risk of effects on cultural resources through higher levels of visitation and exposure to human-related activities, it is also important to note that with more acres proactively managed for visitors, the BLM would have the opportunity to identify important cultural sites for interpretation and would help mitigate impacts on such resources that would result from increased visitation and other recreational activities. Additionally, recreation management decisions on behalf of the BLM would be subject to environmental evaluation under a variety of federal regulations, as well as review under Section 106, reducing the potential for impacts. This would be in part due to the heritage tourism practices, which would be carried over from Alternative C and implemented at specific sites with known cultural resource sensitivities that are prone to heavy use and visitation. Alternative D, like all action alternatives, includes heightened management strategies related to interpretation and education, as outlined under the *Impacts Common to All Alternatives* section. While these efforts would likely be unable to offset the potential effects to cultural resources to the same degree as strict restrictions, the implementation of BMPs under all action alternatives would increase awareness, understanding, and promote responsible interaction between recreationists and cultural resources (**Appendix F**).

Cumulative Impacts

To address potential cumulative impacts related to cultural resources, the entirety of the NCIP planning area served as the geographic area for analysis. The cumulative impacts of past and present actions on cultural resources in the planning area are captured in the description of the affected environment above. Cumulative effects to cultural resources under each of the alternatives, when considered with existing impacts and reasonably foreseeable future actions, would happen where resource management decisions cause direct and indirect impacts resulting in the loss of important information and values through adverse effects to the integrity of historic properties. Changes in the environment through natural processes, increased risks associated with climate change, and trends and patterns in human activities that have the potential to alter the historical integrity of cultural resources have the potential to result in direct and indirect impacts on cultural resources that are representative of broad historical themes or subthemes of cultural significance. The risk of continued, unmitigated changes throughout the region would, theoretically, result in a situation where important historical themes, subthemes, or contexts are no longer represented due to a loss of resources or aspects of the environment that can convey these layers of cultural significance.

Cultural resources have undergone varying degrees of alterations, ranging from simple modifications related to human use or natural processes to the complete loss of historical integrity. Current trends are forecasted for increased climate change-related catastrophic events (intensifying storms and increased wildfires), as well as increased visitation and recreational use, and would likely result in further disturbance and loss to cultural resources. This is particularly true of unknown cultural resources throughout the planning area, which may be subject to exposure and damage from natural processes and human use. In instances where damage can occur from human activities, this is exacerbated through growing urban centers and residential development in areas encroaching on public lands. There is a direct correlation between population growth and the potential for cultural resources to be affected. Typically, this increased level of impact is more pronounced on lands within a planning area that are not under federal control.

This can be said for this RMP, although the prevalence of state and local environmental regulations and requirements, primarily through compliance with the California Environmental Quality Act (CEQA), has the potential to reduce and mitigate potential impacts on cultural resources on non-federal lands. However, the application of this is often dependent on the specific lead agency, which can vary in approach and outlook as the reviewing agency. As such, federally administered lands ensure protection of resources under existing laws.

In general, cumulative impacts common to all alternatives would occur where existing impacts and reasonably foreseeable future actions involving resource management overlap and result in the loss of known and previously unrecorded cultural resources. The continued efforts to document and identify cultural resources from undertakings under all alternatives would perpetually build upon existing knowledge and increase the understanding of potential resources throughout federal lands, as well as those projects outside of federal purview that are subject to CEQA requirements (documentation for these survey efforts are typically, although not always, submitted to the California Historical Resource Information System for future reference purposes for principal investigations and cultural resources specialists). Where the action alternatives differ from current practices is primarily centered around increased understandings and concentrated efforts to focus on new understandings of cultural resources, including TCPs, and promoting intensive education and interpretive programs to increase awareness and understanding for potential users who may interact with cultural resources in some capacity. Recreation and visitor use are expected to rise in the planning area, with continued development of trail systems (motorized and nonmotorized), and the BLM also expects visitation to increase on coastal tracts. Unauthorized travel off designated or existing routes, as well as the creation of social trails, has been occurring on an ongoing basis and will likely continue to occur in the planning area. Likewise, OHV use and popularity are also expected to increase in the future. This would result in increased effects to existing trails and roads through higher visitation and traffic and the growing need to modify existing or develop new trails and/or roads to meet demand. That said, resource management decisions would be subject to the Section 106 review process and other relevant federal regulations, and all such actions in management would be required to consider impacts on cultural resources and effects to historic properties on a project-level basis.

Cumulative impacts on cultural resources under Alternative A would be the same as those described for impacts common to all alternatives. Alternative A would continue existing management actions authorized by the approved RMPs for the Arcata FO and the Redding FO. Cultural resources would continue to be managed under the existing program goals and objectives. Project-level decisions and management actions would be subject to the Section 106 review and compliance with other relevant federal laws, regulations, and BLM policies that would require consideration of impacts from these decisions and actions to cultural resources. Where adverse effects would occur to historic properties, the BLM would be required to avoid, minimize, or mitigate these impacts, in accordance with Section 106 review.

Alternative B would be the most protective in terms of restrictions and limitations in use, whereas Alternative C would be the most unrestrictive, particularly with increased recreational uses. While Alternative B would limit those, Alternative C would promote heritage tourism planning and interpretation principles for a greater understanding of cultural resources and the importance of their protection and preservation. Such efforts to promote cultural resources would respect confidentiality and discretion, as it relates to the sensitivity of Tribal resources, Traditional practices, and group narratives, all of which would be addressed through consultation. Alternative D, however, would be a combination

of Alternatives B and C, providing strict protections in many aspects that have the potential to result in direct impacts on cultural resources, while expanding recreational use through a targeted approach that promotes awareness of cultural resources and their protection, particularly in areas where heavy visitation is occurring and/or likely. As always, all federal undertakings, including project-level decisions and management actions, would be subject to Section 106 review and other applicable laws and regulations. Adherence to appropriate avoidance, minimization, and mitigation measures would help reduce impacts on cultural resources. Overall, the contribution to cumulative impacts on cultural resources under any of the alternatives would be incremental, long term, minimal, and to the benefit of these resources where the BLM implements preservation measures. Where management decisions reduce or remove protections, these contributions to cumulative impacts would be incremental, long term, minimal, and would not afford the same level of benefit in the planning area.

D.2.10 Paleontology

Issue Statements

- How would the alternatives affect paleontological resources?

Affected Environment

Paleontological resources constitute a fragile and nonrenewable scientific record of the history of life on Earth. They are protected by federal law which includes the Paleontological Resources Preservation Act (PRPA) of 2009 (16 USC 470aaa-aaa-11) and regulations 43 CFR Part 49, Paleontological Resources Preservation. Although the BLM Arcata FO and Redding FO current RMPs do not contain existing management for paleontological resources, the BLM policy is to manage these resources for scientific, educational, and recreational values. In addition, the BLM is to protect or mitigate paleontological resources from adverse impacts on lands they administer using established guidance documents (e.g., BLM 8270 Handbook [BLM 1998] and Permanent Instructional Memorandum 2022-009 [BLM 2022e]). To accomplish this goal, paleontological resources must be professionally identified and evaluated. Also, paleontological data should be considered as early as possible in the decision-making process. This includes using the Potential Fossil Yield Classification (PFYC) System, which establishes a class ranking of paleontological potential that can be assigned to geologic units and it sets management and mitigation recommendations for each class. The PFYC system classifies geologic units based on relative abundance of vertebrate fossils or uncommon invertebrate or plant fossils and their sensitivity to adverse impacts.

- PFYC 1 has a very low risk of fossil resource occurrence (e.g., geological units are igneous, metamorphic, or they are Precambrian in age).
- PFYC 2 has a low risk to contain fossils or paleontological resources (e.g., geological units are <10,000 years before present).
- PFYC 3 fossils vary in significance, abundance, and predictable occurrence (e.g., paleontological resources may occur intermittently, but with low abundance, fossils may be significant, but they are widely scattered).
- PFYC 4 has a high risk of occurrence with a lower risk of damage (often due to vegetation or soil cover).
- PFYC 5 has a high risk of occurrence and damage with increased management concerns.
- PFYC U has an unknown risk of occurrence and damage due to deposits that are understudied, and they are typically assessed as PFYC 4 and 5.

- PFYC W includes surface area mapped as water (including shorelines that could contain uncovered or transported resources (BLM 2022e).

In 2017, the Inventory of Existing Data for Paleontological Resources and Potential Fossil Yield Classification GIS Database was completed to provide information for the NCIP (Shapiro 2017). This inventory utilized museum records and published manuscripts of fossil specimens and geologic maps (at various scales and details) to assign the BLM PFYC values to geological units throughout the entire planning area. **Table D-55** summarizes the number of acres by PFYC value in the planning area and decision area. It is a goal to have the values mapped at the 1:100,000 scale across the planning area, but that is not possible at this time. Currently mapping ranges from 1:62,500 to 1:750,000, with the BLM-administered lands mostly mapped at 1:250,000. Digital geological map data at more detailed scales can be incorporated into the PFYC database as it is made available.

Table D-55
Planning and Decision Area Acreage by PFYC Class

PFYC	Acres in Planning Area	Percentage of Planning Area	Acres in Surface Decision Area	Percentage of Surface Decision Area	Acres in Split Estate Decision Area	Percentage of the Split Estate Decision Area
Class 1 – very low	5,872,000	41	169,200	44	69,100	23
Class 2 – low	4,447,500	31	76,100	20	133,300	43
Class 3 – moderate	648,100	5	45,000	12	6,200	2
Class 4 – high	503,300	3	2,700	1	7,300	2
Class 5 – very high	1,600	<1	300	<1	0	0
Class U – unknown	2,873,300	20	88,800	23	91,100	30
Class W – water	45,500	<1	200	<1	100	<1
Total	14,391,400	100	382,300	100	307,200	100

Source: Shapiro 2017

Note: acres are rounded to nearest 100

Collection and locality records should be considered along with PFYC data when assessing paleontological resources. Paleontological resources occur within the planning area. The majority of the previously collected fossils are housed at the University of California Museum of Paleontology (UCMP). Additional specimens are also in the collections at: Sierra College, Humboldt State University, Humboldt State University Museum of Natural History, California State University at Chico, and the US Army Corps of Engineers. Most of the fossils at UCMP were collected during state geological surveys in the latter 19th and early 20th century. While some of the UCMP localities, as well as other repositories, lack specific information regarding landownership, none of the records indicate that they are from BLM-administered surface estate. Instead, the collection of these paleontological resources was from non-BLM federal lands (e.g., US Forest Service), state, and private lands. Neither the BLM Redding FO nor the Arcata FO have data on fossil localities on, or curated collections from, BLM-administered lands. While publicly available online databases (e.g., Paleobiology Database) also contain numerous fossil localities within the planning

area, cross referencing these data with BLM-administered surface land in the decision area is nearly impossible given that exact location is not often included in the paleontological data. Fossils collected on nonpublic land may not be fully represented in any collection or agency database.

According to the planning area inventory report (Shapiro 2017), there are 44 geologic units within counties that are entirely or partially within the planning area, which contain 516 known fossil localities and 12,672 individual fossil records (or often specimens) (**Table D-56**). These locality and specimen numbers do not incorporate fossil localities or individual specimens that do not include geological unit (or formation) data (e.g., large numbers of Pleistocene specimens from cave localities that do not have a defined geologic unit). Thus, a much greater number of fossils are documented from the planning area. These 44 geologic units with paleontological resources span geologic time from the Paleozoic, starting in the Silurian, through the Cenozoic, including part of the Holocene. Documented fossils include marine and terrestrial invertebrates and vertebrates, plants, and trace fossils.

Table D-56
Individual Collection Records of Fossils (e.g., specimens) from Museum Databases by
County in the Planning Area

Geologic Age¹	Butte	Humboldt	Mendocino	Shasta	Siskiyou	Tehama	Trinity	Totals
Holocene	0	0	0	905	0	0	0	905
Pleistocene	1	521	0	8,773 ²	8	0	0	9,303
Plio-Pleistocene	0	92	0	0	0	0	0	92
Pliocene	1	589	8	0	0	84	0	682
Miocene	1	57	106	0	1	0	110	275
Oligocene	0	0	0	0	1	0	6	7
Eocene	26	0	1	2	0	0	0	29
Paleocene	0	0	3	0	0	0	0	3
Cretaceous	124	57	18	135	37	92	1	464
Jurassic	6	0	0	0	0	7	0	13
Triassic-Jurassic	0	0	0	5	0	0	0	5
Triassic	0	0	0	269	0	0	1	270
Permian	17	0	0	244	176	0	4	441
Pennsylvanian-Permian	0	0	0	28	0	0	0	28
Carboniferous	0	0	0	94	0	0	0	94
Devonian	0	0	0	33	5	0	1	39
Silurian	0	0	0	0	33	0	1	34
? ³	0	76	0	1	0	0	0	77
ng ³	0	1	0	0	0	0	0	1
Totals	176	1393	136	10,489	261	183	124	12,762

Source: Shapiro 2017

Notes:

¹ Geologic Ages were combined where they were the same (e.g., Middle and Late Cretaceous under Cretaceous).

² Example of several individual records with no associated formation (e.g., cave localities), but known age based on fossils discovered.

³ These geologic ages were unknown or not given in the databases.

The planning area contains approximately 26 mapped geologic units designated as PFYC 3 or 4. In addition, 14 of these, 11 PFYC 3 and three PFYC 4, are mapped within the decision area on the BLM-administered lands. In addition, there are many geologic units assigned as PFYC U within the planning area and at least 37 of these are in the decision area (**Table D-57**).

Table D-57
PFYC 3, 4, and U Geological Units Mapped on BLM-administered Lands with Types of
Fossils Documented and Associated Acres

Geologic Unit (or Group)	PFYC	Fossils Documented	Surface Decision Area (acres)	Planning Area (acres)
Cretaceous undifferentiated sedimentary rocks	3	Ammonites and other marine fossils	729	2,518
Tertiary undifferentiated sandstone	3	Oysters	7	1,814
Great Valley sequence	3	Rare coquina	20	7,278
Montgomery Creek Formation	3	Common invertebrates and plants	52	9,552
Weaverville Formation	3	Common plants	2,846	41,042
Hornbrook Formation	3	Common invertebrates and plants	1,219	19,909
Bragdon Formation, Eastern Klamath terrane	3	Paleozoic marine fossils	37,029	267,146
Gazelle Formation	3	Paleozoic marine fossils	129	27,885
Kennett Formation, Eastern Klamath terrane	3	Paleozoic marine fossils	397	5,340
Chico Formation ¹	3	Common invertebrates and plants, few vertebrates	1,267	37,243
Modesto Formation ¹	3	Vertebrates widely scattered	1,084	133,404
Patricks Pt. terrace	4	Rare or uncommon invertebrate and vertebrates	< 1	1,312
Riverbank Formation	4	Significant vertebrate fossils	149	176,585
Tehama Formation	4	Significant fossils	2,528	311,002
At least 37 formally recognized and informal geologic units that range from the Permian and into the Holocene ²	U	Potential but poorly studied, Unknown	89,155	2,033,691

Source: Modified from Shapiro 2017

Notes:

I = Invertebrate; V = Vertebrate; P = Plant; PFYC = Potential Fossil Yield Classification.

¹ Designated PFYC 3 but flagged by Shapiro (2017) for additional concern.

² These geologic units may contain fossils elsewhere in California, but they are in the NCIP planning area and they are poorly studied. Future work within these units may provide support for a formal PFYC classification, but until then they will be managed, as outlined in the BLM PIPM 2022-009 (BLM 2022e) as PFYC 4 or 5 designated geologic units.

The geologic units designated as PFYC 4 are all Pliocene to Pleistocene in age. The geologic units designated as PFYC 3 span contain paleontological resources from the Devonian into the Tertiary and management strategies may differ and these units are typically managed case by case. Examples of this include enhanced protection of two geologic units that Shapiro (2017) assigned to PFYC 3. These are the Cretaceous Chico Formation, rich in common invertebrates, but it has the potential to contain rarer ammonites and very rare terrestrial and marine vertebrates, and the Pleistocene-aged Modesto Formation, which is poorly studied in the northern Sacramento Valley, but it may yield fossiliferous material like the Modesto Formation in the San Joaquin Valley. PFYC U was assigned to mapped formations within the planning area that have the potential to contain paleontological resources, but they lacked directly associated data in the published literature and/or in museum collection databases (e.g., sedimentary deposits within metamorphic sequences; “undifferentiated” units are mapped, but elsewhere differentiated

units are fossiliferous; and Pliocene and Pleistocene fossils are not known in the NCIP planning area, but they are known from similar deposits elsewhere in California). Based on BLM policies, these PFYC U formations should be treated as PFYC 4 and 5 until a more provisional assignment is made (BLM 2022e).

There has been no permitted fossil research on BLM-administered lands within the planning area since previous resource management planning efforts in the early 1990s. There are occasional inquiries in the offices regarding locations where fossil hunting is permitted. Invertebrate or plant fossil collecting, which is allowed without a permit in limited quantities, occurs infrequently on the BLM-administered lands.

Neither the Redding FO nor Arcata FO has conducted paleontological studies on any internal projects except on a limited basis where sedimentary beds would be exposed through ground disturbance. Such observations are conducted by staff that are not formally trained in paleontology, usually by archaeologists and geologists. Since previous planning efforts, the condition of fossil-bearing beds has not been evaluated. However, erosion can sometimes be beneficial in exposing hidden fossils.

Current management of paleontological resources on BLM-administered land must be based upon the best science available and include locating, evaluating, and classifying paleontological resources. The desired condition of paleontological resources on federal lands is that they remain stabilized and protected from adverse effects due to natural and human processes. Resource conditions are assessed by field observations, paleontological reports, commercial site reports, and project reviews. The primary resource indicator is a loss of fossil resources or those characteristics that make a fossil locality or feature important for further scientific investigation. Adverse losses to these characteristics can occur through natural weathering, decay, erosion, improper collection, and vandalism.

The current management trend for paleontological resources in the Redding FO and Arcata FO is towards continued scientific research; additional monitoring, protection, and interpretive signage; and increased opportunities for environmental education and interpretive use. Recreational use is expected to gradually increase along with populational pressure to access public lands. This, and trends of limited law enforcement presence, will increase the potential for illegally removing or damaging paleontological resources. It is unknown if limited personal informal collecting is being conducted, but collection of common invertebrates or plants in limited quantities is legal. Whereas collection of vertebrates or rare invertebrates or plants is not allowed without a permit.

Consequently, the forecast is for a continuing downward trend in resource conditions. In general, improved access to public lands, increased urbanization, increased recreational use, and limited law enforcement presence as well as the potential for paleontological resources being illegally removed or damaged is expected to increase. In addition, increasing coastal erosion due to sea level rise, denudation from increased fire intensity and frequency, and other effects of climate change may increase erosion; this could result in exposure and subsequent loss of paleontological resources. If these resources can be properly documented and, if needed, removed and curated into a collection, then these resources could be saved to stimulate future research and educational opportunities. The completion of the inventory report (Shapiro 2017) and this report provides useful information to help target management for protection, evaluation, and interpretation.

Environmental Consequences

Impacts Common to All Alternatives

Under all alternatives, continuing to adhere to the existing laws, such as PRPA, and the BLM policies (e.g., manuals and handbooks) would protect paleontological resources on BLM-administered lands. Applicable federal laws, regulations, and policies (e.g., PRPA) may protect these resources on other federal lands (e.g., Forest Service and NPS). State and local laws may protect these resources on state owned land. With the protections from federal laws, regulations, and policies, continued scientific work by qualified researchers on public land would add further knowledge about the areas' paleontological resources, resulting in opportunities for improved future management decisions and protection of these nonrenewable resources.

There are no laws, regulations, or policies protecting paleontological resources on private surface lands, which makes up 54 percent (7,861,300 acres) of the planning area. The potential for paleontological resources in the decision area does not represent the total potential for these resources within the planning area, but the BLM's decisions could affect the overall preservation of, accessibility to, and scientific/educational value of these resources. Thus, management decisions are targeted to protect paleontological resources and they would include assessment, evaluation, and mitigation of potential resource impacts.

Under all alternatives, any management decisions that include increased areas of allowed surface disturbance such as: construction, development of fluid mineral leasing, locatable minerals, mineral materials, ROW leasing, increases in recreation, and OHV use could affect paleontological resources. Unmitigated surface-disturbing activities could dislodge or damage paleontological resources and features that were not visible before surface disturbance. Crushing, breaking, or displacing paleontological resources could result in the permanent loss of the resources, the scientific data they could provide, and the associated contextual data. Where surface disturbance is not mitigated or reclaimed, paleontological resources may be subjected to long-term damage or destruction from erosion. If surface disturbance is regulated and proper mitigation and the preservation process are followed, these activities could expose scientifically significant fossils that would otherwise remain buried and unavailable for scientific study.

Actions that provide further human access to public lands could also impact paleontological resources through activities like vandalism and unauthorized collection. These impacts can be reduced through such actions as enforcement of existing laws, resource monitoring, and mitigation that may include limiting or regulating access. With programs targeted for education and outreach, the impact of human recreation on paleontological resources can be limited. Additionally, beneficial impacts can also occur through the discovery of previously unknown paleontological resources if proper laws are followed and authorities notified. Such fossils, if collected properly and curated into the museum collection of a qualified repository, would be available for future scientific study and education.

If BLM-administered lands are disposed of and removed from federal ownership, they would no longer retain any of the BLM protections for paleontological resources. Prior to a disposal action, the BLM is required to assess site specific inventories and analyses for multiple resources and uses including paleontological resources. If the disposed land is transferred to a federal, state, or local government agency, federal laws or separate state or local laws could protect paleontological resources. However, if the land is sold to a private entity, paleontological resources would likely lose all protections.

Paleontological resources on land that would be retained by the BLM would be protected by the federal laws and policies protecting paleontological resources on public lands (BLM 1998 and BLM 2008b).

Areas open for ROW authorization could have more ground-disturbance from possible surface-disturbing activities than areas with ROW avoidance or exclusion areas. To reduce the potential for impacts on paleontological resources from ROW actions, paleontological resources' evaluations and subsequent mitigation could be completed.

Fluid and nonenergy mineral leasing and mineral materials development on BLM surface and split-estate could impact paleontological resources through surface disturbance from the construction of infrastructure needed for mineral exploration, development, and extraction. Land opened to mineral exploration, development or extraction would be subjected to federal laws, regulations, and BLM policies to protect and mitigate paleontological resources.

Although based on current market conditions, surface disturbance due to mineral development is stable and it is not expected to increase over time unless market conditions change. Under all alternatives, for lands open to locatable mineral entry paleontological resources could be impacted through surface disturbance. Withdrawing land from locatable mineral entry would protect and preserve paleontological resources in their original context. Other surface-disturbing activities like fluid and nonenergy mineral leasing could impact paleontological resources, but the potential for impacts would be reduced through implementation of BMPs (**Appendix F**) and compliance with federal laws and regulations. Regardless of PFYC value, any decrease in surface disturbance may add protection for unknown or unanticipated paleontological resources (i.e., no surface occupancy) since no disturbance related to mineral extraction or subsequent impacts on surface or subsurface paleontological resources would be expected in these areas.

Acres of land open or withdrawn from locatable mineral entry are nearly the same under all alternatives. Those acres open for locatable mineral entry include all the PFYC 3, 4 and U on the BLM-administered split estate and 99 percent of the PFYC 3 (44,600 acres), 100 percent of the PFYC 4 (2,700 acres), and 73 percent of the PFYC U (65,100 acres) on the BLM-administered lands. The remainder for the BLM-administered split estate (400 acres of PFYC 2) and the BLM-administered lands (24,100 acres of PFYC 1, 11,800 acres of PFYC 2, 400 acres of PFYC 3, and 23,700 acres of PFYC U) are withdrawn from locatable mineral entry. Acres of proposed withdrawal from the locatable mineral entry varies by alternative, yet for split estate lands there would be no acres of PFYC 3, 4, or U proposed for withdrawal. Even within these open areas, current levels of mineral leasing are low in the decision area and future development potential is expected to remain low regardless of the alternative.

Livestock grazing reduces vegetation within an area, and it could cause an increase in erosion of the soil and exposure of paleontological resources underlying the area or it could trample and destroy any paleontological resources if present at or near the surface. Also, construction of structures to support livestock grazing (e.g., stock ponds, dams, and roads) would increase surface disturbance and it could have an impact on paleontological resources. Grazing levels are low within the decision area and are expected to remain low regardless of the alternative.

All alternatives which create or increase resiliency in lands from impacts of climate change including sea level rise, increasing temperatures, and changing precipitation patterns could limit potential affects to these resources from these situations. This would be best for paleontological resources in areas with geologic

units designated as PFYC 3, 4 and U that are exposed at or just below the ground surface. Additionally, managing and protecting natural environments and ecosystems (e.g., soil, vegetation, forest, riparian, shoreline, floodplains, and WSAs) and wildlife habitats can further reduce erosion within these environments, and thereby decrease the impact on paleontological resources. For all alternatives, the WAs and WSAs contain 100 acres of PFYC 3, or less than 1 percent of the PFYC 3 for the BLM-administered lands, and 22,400 acres of PFYC U, or 25 percent of the PFYC U BLM-administered lands for all alternatives.

Wildfire can adversely affect surface and shallowly buried paleontological resources, especially when they occur on steep slopes where vegetation has been previously burned, soil stability is compromised causing a higher chance for increased erosion. Wildland fire management activities under all alternatives would be conducted in a manner to avoid impacts on paleontological resources through prioritizing fuels and vegetation management projects in areas overlying geological units with high potential to contain important paleontological resources (e.g., areas of PFYC 4). While other areas should be monitored for any newly exposed or unique paleontological resources in areas overlying geological units with PFYC 3 and U. Reducing impacts on paleontological resources can also be accomplished through prioritizing research in areas with PFYC 4 and U, especially after a wildfire has burned through an area and newly exposed bedrock is present.

Visual resource management decisions could indirectly impact paleontological resources in specific areas. Where minimal visual change from human activity is allowed, known and unknown paleontological resources are less likely to be impacted from these activities (VRM Class I); whereas areas where significant modifications of an existing landscape are allowed (VRM Class IV) there is higher potential for ground-disturbing activities, increased human activity, and impacts on paleontological resources. The greatest impact on paleontological resources from VRM management decisions would be in PFYC 3, 4 or U areas. Impacts would be managed as previously discussed for surface disturbance and increased human activities. All alternatives have 100 acres of PFYC 3 within VRM Class I areas, the differences between VRM classes and PFYC designations are noted for each alternative.

Protecting caves and cave environments under all alternatives would protect paleontological resources; however, this effect would occur only in specific areas. It is common to discover paleontological resources from the last ice-age preserved within a cave, cave deposits, or surrounding rocks that make up the cave; localities with rich paleontological resources are documented in the planning area, but they are not on the BLM-administered surface. Prioritizing cave surveys and inventories that included evaluation of paleontological resources regardless of the PFYC of the area would reduce the potential for impacts on paleontological resources and allow for protection of these resources. Restricting ground-disturbing activities and human access to caves with known or unknown paleontological resources further protect paleontological resources.

Areas managed for recreation, such as SRMAs, could have increased risk for direct, indirect, and inadvertent damage to paleontological resources from concentrated recreation and increased localized visitor use. Recreation activities could physically alter exposed or shallow paleontological resources leading to damage from erosion and unauthorized collection and vandalism. Yet specifically because these risks occur in concentrated areas, like trails, the BLM may be in a better place to manage recreation in ways that minimize the potential for damage to paleontological resources than in other unregulated recreation areas where effects are more difficult to anticipate, monitor, and mitigate. Prior to the creation

or expansion of areas managed for recreation, a paleontological resource assessment would evaluate the underlying geological units for paleontological potential and address further needed assessment or mitigation. Impacts within areas managed for recreation could be further mitigated through limited OHV travel and monitoring of hiking and biking trails as well as designating camping areas, especially in or near geological units with PFYC 3, 4, or U. Overall, recreation use can improve knowledge of paleontological resources if federal laws, regulations, and policies are followed, and the public would be educated on these processes. Given current visitor trends, human activity, which may increase disturbance and erosion rates, may continue to increase across the BLM land both in and out of areas managed for recreation. These increased actions could uncover previously unknown paleontological resources and if the discoveries are handled properly, they could add to the paleontological knowledge of the region. But this process would be for the BLM supported community engagement and education on the preservation of this resource.

Like areas with stringent VRM classifications, special designation areas, including ACECs, WSAs, and WSRs, are afforded special management measures designed to protect a variety of resource values. Management measures vary, but they generally include stringent VRM classifications, surface use restrictions, ground disturbance restrictions, motorized and OHV travel prohibitions, annual monitoring, and other restrictions on development and resource use. Thus, management of these areas would regulate use and it would overall limit human-caused surface disturbance. Paleontological resources in these areas would be preserved in situ or they would be collected only through an approved paleontological resource's use permit. New discoveries from development and deep excavations would be less likely but permits for scientific uses would be considered if compatible with the resource values that the designation is protecting. Management of WSRs specifically would also help to reduce erosion and maintain the river's natural channel. Under all alternatives, designated WSRs cross over 17 percent of the BLM-administered lands (4,500 acres) with the potential to contain paleontological resources, including 700 acres of PFYC 3, 3,800 acres of PFYC U, and no acres of PFYC 4.

Alternative A

Current paleontological resource management practices would continue under Alternative A, including avoidance, mitigation, and adherence to the applicable laws that guide the BLM to manage fossils to promote their use in research, education, and recreation. The PRPA directs the BLM land managers to manage and protect paleontological resources, regardless of the type (e.g., vertebrate, invertebrate, plant, and trace), using scientific principles and expertise.

Under Alternative A, 101,000-acres of the BLM-administered lands would be identified for possible disposal including 19,000 acres of PFYC Class 3, 4, and U. Disposal of these lands could result in the removal of up to 7 percent (3,300 acres) of PFYC 3, 11 percent (300 acres) of PFYC 4, and 18 percent (15,400 acres) of PFYC U that are within the BLM-administered lands and the potential paleontological resources they may contain from federal management. If the disposed land is transferred to a federal, state, or local government agency, federal laws or separate state or local laws could protect paleontological resources, but if the land is sold to a private entity, a paleontological resource would likely lose all protections. The remainder of the decision (surface) area would be identified for retention and would remain under federal management and the paleontological resources they may contain would retain BLM protection.

Under Alternative A, 82 percent of BLM-administered land would be open to ROW authorization, including 98 percent (44,200 acres) of the PFYC 3, 100 percent (2,700 acres) of the PFYC 4, and 73

percent (64,600 acres) of the PFYC U. The remaining area, 2 percent of PFYC 3 and 27 percent PFYC U, would be within ROW avoidance and/or exclusion areas and limited, or there would be no surface disturbance or potential disturbance of paleontological resources from ROW authorizations potential to impact paleontological resources.

Management under Alternative A would manage some of the BLM-administered surface and subsurface mineral estate (split estate) lands with PFYC 3, 4, and U geological units as open to mineral leasing, locatable mineral entry, and mineral materials development and manage other portions withdrawn or closed. The acres of PFYC 3, 4, and U open to mineral materials and fluid mineral leasing on BLM-administered lands vary by alternative; whereas acres open to locatable mineral entry and split-estate lands do not. Under Alternative A, 97 percent (43,700- acres) of the PFYC 3, 37 percent (1,000 acres) of the PFYC 4, and 60 percent (53,600 acres) of the PFYC U within BLM-administered lands would be managed as open to fluid leasing with standard lease terms and open for mineral materials leasing. The remainder of the PFYC 3, 4, and U areas within BLM-administered lands would be closed to leasing or no surface occupancy (open with stipulation), thereby eliminating the potential for surface disturbance and reducing potential for impacts on paleontological resources.

Recreation management areas are limited to SRMAs under Alternative A and these areas would include 42 percent of the PFYC 3 (19,000 acres), 0 percent of the PFYC 4, and 2 percent of the PFYC U (1,700 acres) within the BLM-administered lands. In these areas recreation is the predominant land use focus of the area and management may place restrictions on other resource uses. Continued surface disturbance followed by subsequent erosion from such ground-disturbing activities as OHV open travel, could have an impact on unknown paleontological resources in these areas. This could include, for example, the entire 200-acre Samoa Dunes SRMA area, which is designated as PFYC U and OHV open travel.

Opened OHV managed areas are limited to 200 acres of PFYC U within Samoa Dunes, under all alternatives, and recommendations can be found in the above section (*Impacts common to all alternatives*). Similarly, under all alternatives OHV limited managed areas include all the PFYC 3 (44,900 acres) and PFYC 4 (2,700 acres) areas on BLM-administered lands and except for Alternative B a very similar amount (74 percent, or 66,000 acres) of PFYC U on BLM-administered lands. Under Alternative A, 59,200 acres would be managed as OHV closed including less than 1 percent (100 acres) of the PFYC 3, no PFYC 4, and 25 percent (22,600 acres) of the PFYC U within BLM-administered lands. Keeping OHV travel closed in areas with underlying rock units of PFYC 3 and U would reduce both surface disturbance and human impact on paleontological resources. Allowing limited OHV travel on existing and designated routes would limit new areas of erosion and surface disturbance in geological units with PFYC 3 (44,900 acres), PFYC 4 (2,700 acres), or PFYC U (66,000 acres), but it could increase the public access to these areas which could increase the impact on paleontological resources (113,600 acres). Community outreach and education on identifying fossils and notifying authorities if paleontological resources are found may reduce the impact on these resources.

Under Alternative A, 44 percent (60,600 acres) of BLM-administered lands with PFYC 3 (7,800 acres), 4 (2,600 acres), and U (49,900 acres) would be available for livestock grazing. This includes 17 percent of the PFYC 3, 96 percent of the PFYC 4, and 56 percent of the PFYC U on BLM-administered lands. However, under Alternative A, 62,600 acres would be managed as grazing allotments at any given time, therefore, impacts would be limited to those areas where grazing allotments are active. These areas could have an increased erosion from reduction in vegetation from grazing and surface disturbance through

trampling by or construction of support structures (e.g., stock ponds, dams, and roads). The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP. The remaining 195,300 acres of BLM-administered lands would be unavailable for grazing and they would not have these surface-disturbing impacts from grazing management decisions.

Land with special designations, including ACECs, WSA, and WSRs, are afforded special management measures designed to protect a variety of resource values. Since this management typically results in regulating use and limits human-caused surface disturbance, these decisions could also protect potential paleontological resources within these areas. Under Alternative A, 54,600 acres of BLM-administered lands would be within 16 designated ACECs including 3 percent of PFYC 3 (1,500 acres), 63 percent of PFYC 4 (1,700 acres), and 33 percent of PFYC U (29,600 acres) that are within the BLM-administered lands.

Although designated, Wilderness Area, WSAs, and WSRs do not vary by alternative. Under Alternative A, eligible WSRs cross 17 percent (22,800 acres) of the geological units on the BLM-administered lands designated as PFYC 3 (1,700 acres), PFYC 4 (900 acres), and PFYC U (20,200 acres). Management for eligible WSR, which involves reducing erosion and disturbance in select areas, would add protection of any paleontological resources at these locations.

Protection of other resources through management decisions, such as visual resources management, could as previously noted under *Impacts Common to All Alternatives*, reduce potential impacts on paleontological resources. Of these classes, VRM Class IV areas would have the least indirect protection for known and unknown paleontological resources, and VRM Class I would have the most. While acres of PFYC 3 that intersect VRM Class I do not vary by alternative, there would be variation with areas managed as VRM Classes II-IV and PFYC U in areas managed as VRM Class I. Under Alternative A, 17 percent of the PFYC 3, 4, and U are in VRM Class I areas, 12 percent are in VRM Class II areas, 72 percent are in VRM Class III areas, and less than 1 percent are in VRM Class IV areas. Of the 2,700 acres of PFYC 4, 1,700 acres intersect with VRM Class II and 1,000 acres intersect with VRM Class III. **Table D-58** summarizes Alternative A acres by PFYC designation and VRM Class.

Table D-58
PFYC Class by VRM Class Under Alternative A (acres)

VRM Class	PFYC 1 or 2	PFYC 3	PFYC 4	PFYC U	Combined PFYC 3, 4 and U	Percent of Total PFYC 3, 4 and U on BLM surface
I	36,500	100	0	22,400	22,500	17
II	8,600	1,400	1,700	13,000	16,100	12
III	198,800	43,500	1,000	53,300	97,800	72
IV	1,500	0	0	100	100	<1
Total Acres	245,400	45,000	2,700	88,800	136,500	

Note: Acres do not include 200 acres labeled as water.

Alternative B

Effects under Alternative B are the same as those described under Alternative A except for the descriptions noted below.

Compared with Alternative A, paleontological resource management under Alternative B would be formalized by the management goals, objectives, and key focus points described in **Appendix B**. These management objectives would include identifying and evaluating areas likely to contain important paleontological resources; prioritizing scientific research in areas with high paleontological potential; inadvertent discovery stipulations for ROW grants, leases, and the BLM-permitted use; and promoting the importance of paleontological resources through education and public outreach.

Protection of paleontological resources would be considered in management decisions. Actions that could affect paleontological resources would be assessed, for example, prior to any surface disturbance. An assessment would include determining PFYC of geological units involved in the activity; a compilation of known paleontological resources in the area; and consideration of potential effects based on the nature of the activity that should be undertaken. Activities which will disturb geological units with PFYC 4 or higher would typically require, and those with PFYC 3 and U may require, an on-the-ground evaluation by a qualified paleontologist. Once this assessment is completed, a mitigation plan would be developed to protect paleontological resources that could include avoidance, pre-disturbance salvage, professional monitoring during construction, and stop work authorizations if paleontological resources are uncovered.

Increased awareness and opportunities for hands-on education surrounding paleontological resources have increased the potential for long-term preservation of unique and important paleontological resources. By collaborating with local communities, universities, and museums, the BLM would assist in developing areas for public casual collecting of paleontological resources, such as common invertebrates, shells, silicified wood, and leaves on public land. These activities would be diverse and inclusive in nature while informing the public on the preservation and protection of paleontological resources through providing applicable laws, regulations, and policies that protect these resources. Specific plans would be made in areas rich in common and collectable paleontological resources such that the impact would be limited and still provide opportunities for fossil collecting, while facilitating active public engagement and further research in the planning area and decision area, which would improve the overall knowledge and stewardship of these resources.

Under Alternative B, 25 percent less of BLM-administered lands would be identified for disposal, including 17,600 fewer acres of PFYC 3, 4, and U (1,400 acres) than Alternative A. Thus, 99 percent of the PFYC 3 (44,800 acres), PFYC 4 (2,600 acres), and PFYC U (88,100 acres) areas within the BLM-administered lands would be identified for retention. This is a 13 percent increase in retention of PFYC 3, 4, and U areas when compared with Alternative A, which would allow for continuation of BLM management of these areas and the potential paleontological resources they contain. In addition, in contrast to Alternative A, lands that would be identified for retention and acquisition would prioritize areas of high sensitivity of paleontological resources and thereby offer greater protection to these resources.

Under Alternative B, 53 percent less of BLM-administered lands would be open to ROW authorization than Alternative A, including 63 percent less (15,700 acres) of the PFYC 3, 93 percent less (200 acres) of the PFYC 4, and 57 percent less (14,200 acres) of PFYC U. The remaining 78 percent (106,500 acres) of PFYC 3, 4, and U would be within ROW avoidance/or exclusion areas, this is 60 percent (or 81,500 acres) more than under Alternative A. Potential impacts on paleontological resources from ROW authorizations would be limited or eliminated in these areas under Alternative B.

Management under Alternative B would allow some of the BLM-administered surface and subsurface mineral estate (split estate) lands with PFYC 3, 4, and U geological units to be opened to mineral leasing,

locatable mineral entry, and mineral materials; and other portions withdrawn or closed. The acres of PFYC 3, 4, and U open to mineral materials and fluid mineral leasing on BLM-administered lands vary by alternative; whereas acres open to locatable mineral entry and most split-estate lands do not. Additionally, lands recommended for withdrawal from those currently open for locatable mineral entry on BLM-administered surface does vary by action alternative. Under Alternative B, 104,700 acres of BLM-administered surface lands are proposed for withdrawal, including 17 percent (7,800 acres) of the PFYC 3, 33 percent (900 acres) of the PFYC 4, and 31 percent (27,300 acres) of PFYC U on BLM-administered lands.

Unlike Alternative A, under Alternative B the acreage open to fluid leasing with standard terms is different, 14,200 acres less, than the acreages open for mineral materials leasing. Compared to Alternative A, under Alternative B, 125,200 fewer acres, including 44,300 fewer acres of PFYC 3, 4, and U, would be managed as open for mineral materials leasing. These areas open for mineral materials leasing under Alternative B would include 50 percent (22,700 acres) of PFYC 3, 15 percent (400 acres) of PFYC 4, and 35 percent (30,900 acres) of PFYC U within the BLM-administered lands, or 47 percent, 22 percent, and 259 percent less of each PFYC class than Alternative A. The remainder of the PFYC 3, 4, and U areas would be closed to leasing or open with a no surface occupancy stipulation, thereby eliminating the potential for surface disturbance and reducing potential for impacts on paleontological resources.

Under Alternative B, lands managed for recreation as SRMAs and ERMAs include 11 percent less of the PFYC 3 (5,200 acres), 22 percent more of the PFYC 4 (600 acres), and 1 percent more of the PFYC U (600 acres) within the BLM-administered lands than Alternative A. While ERMAs are like SRMAs in that management focuses on recreation, in these areas management would be interdisciplinary as recreation would have the same value as other resources or resource uses. Potential for impact on unknown paleontological resources increases with the amount of area and PFYC value of the geologic unit exposed within an existing or proposed recreation area. For example, the creation of the Redding Trails ERMA could result in increased potential for impact on paleontological resources due to the presence of the Tehama Formation (PFYC 4).

As noted previously, under all alternatives, all acres of PFYC 4 on BLM-administered lands would be managed as OHV limited and travel on existing and designated routes would limit new areas of erosion and surface disturbance. Overall, Alternative B would manage more acreage as OHV closed than Alternative A including 10 percent (9,500 acres) more of the PFYC U within the BLM-administered lands. This additional management could add some additional protections to paleontological resources in these areas. Yet, much of the additional closed acreage is mapped as geologic units ranked as PFYC 1 and 2 and the reduction of potential impact on paleontological resources would be minimal in these areas when compared with Alternative A.

When compared with Alternative A, Alternative B would increase the land available for grazing by 45,900 acres, resulting in a total of 76,900 acres of mapped geological units with PFYC 3 (24,000 acres), PFYC 4 (2,000 acres), or PFYC U (50,900 acres) and reduce the land unavailable for grazing by the same amount. Areas available to grazing in Alternative B would include 36 percent more of the PFYC 3 (or 16,200 acres), 2 percent more of the PFYC U (or 1,000 acres), and 22 percent less (or 600 acres) of the PFYC 4 within BLM-administered lands. However, under Alternative B, 62,000 acres would be managed as grazing allotments at any given time, therefore, impacts would be limited to those areas where grazing allotments are active. Paleontological resources in these areas could be impacted from grazing management decisions

similar to Alternative A. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

Under Alternative B, 88,800 acres of BLM-administered lands would be within 25 designated ACECs, including 4 percent of PFYC 3 (1,900 acres), 85 percent of PFYC 4 (2,300 acres), and 29 percent of PFYC U (26,100 acres) that are within the BLM-administered lands. As with Alternative A, any potential paleontological resources within the boundaries of these ACECs would have added protection through management that regulate use and limit human-caused surface disturbance. Under Alternative B, when compared with Alternative A, there would be an overall increase of 34,200 acres within designated ACECs, including an additional 400 acres of PFYC 3 and 600 acres of PFYC 4, but a decrease of 3,500 acres of PFYC U as most of the additional acreage is mapped as geologic units ranked as PFYC 1 and 2. Thus, there would be increased protection within the boundaries of designated ACECs for the acres of PFYC 3 and 4, and the potential paleontological resources they contain, along with a decreased protection for those acres of PFYC U not within the boundaries of a designated ACEC.

Compared with Alternative A, Alternative B would have no eligible WSR, but the same BLM-administered lands, which includes 4 percent of all PFYC 3 (1,700 acres), 33 percent of all PFYC 4 (900 acres), and 23 percent all PFYC U (20,200 acres), would be managed as suitable WSR. In-turn paleontological resources, if present, would have more protection in these areas under Alternative B when compared with Alternative A as these areas would be managed to protect outstandingly remarkable values that are likely to monitor human use and changes through a natural process.

Under Alternative B, as well as Alternative C and Alternative D, there would be formal management of the Coastal Strip (the BLM-administered lands 1,000 yards from the mean high tide line) that would limit or eliminate surface disturbance and set goals related to identifying potential land acquisition parcels in the area. The proposed management for reduced surface disturbance would also add protection to areas with potential to contain paleontological resources within these areas, which are mapped as geologic units designated as PFYC U. Resource use locations and acquisition of land within the Coastal Strip would be evaluated for paleontological resources based on PFYC and fossil data within the acquisition or surrounding area. Management for use are variable by alternative and location, thus, acreages within the Coastal Strip are included with the applicable resource use (e.g., OHV) or resource (e.g., VRM designation) discussions. As an example, under Alternative B there would be no change in OHV use in Samoa Dunes when compared with Alternative A, but newly acquired lands would be managed as OHV closed.

Table D-59 summarizes Alternative B acres by PFYC designation and VRM Class. Under Alternative B, 7 percent more of the PFYC 3, 4, and U areas are in VRM Class II areas than in Alternative A and 14 percent fewer acres are in VRM Class III areas. Compared to Alternative A, in Alternative B PFYC 4 areas intersect with more VRM Class III (2,100 acres versus 1,700 acres in Alternative A) and less VRM Class II (600 acres versus 1,000 acres in Alternative A) areas and has 7 percent more (or 9,200 acres) PFYC Class U within VRM Class I areas. The additional PFYC 4, 3, and U acres in VRM Class II areas are less likely to be impacted by human activities under Alternative B than those acres within Alternative A where they are within VRM Class III areas.

Table D-59
PFYC Class by VRM Class Under Alternative B (acres)

VRM Class	PFYC 1 or 2	PFYC 3	PFYC 4	PFYC U	Combined PFYC 3, 4, and U	Percent of Total PFYC 3, 4, and U on BLM surface
I	39,000	100	0	31,600	31,700	24
II	46,800	7,200	600	17,700	25,500	19
III	158,200	37,800	2,100	39,400	79,300	58
IV	1,400	0	0	0	0	0
Total Acres	245,400	45,100	2,700	88,700	136,500	

Note: Acres do not include 100 acres labeled as water.

Unlike Alternative A, which does not include areas to be managed to protect wilderness characteristics, under Alternative B 12 percent of the PFYC 3 (5,600 acres), 4 percent of the PFYC 4 (100 acres), and 6 percent of the PFYC U (5,300 acres) within the BLM-administered lands would be managed to protect wilderness characteristics. Management measures within these designated areas would include encouraging resource compatible research, limiting surface-disturbing activities such as surface occupancy and mineral leasing, prohibiting motorized vehicle use, limiting OHV travel to designated roads and trails, and including other incompatible activities. Protecting lands with wilderness characteristics over all other uses would in turn help protect paleontological resources by severely limiting the area from most human surface-disturbing activities. Minimizing the impacts on lands with wilderness characteristics while emphasizing multiple uses would help to reduce impacts on paleontological resources by limiting, reducing, and excluding areas for surface-disturbing activities as well as increasing recreation. These restrictions could also limit the ability of the BLM to authorize the excavation of paleontological resources.

Alternative C

Effects under Alternative C are the same as those described under Alternative A except for the descriptions noted below.

Because management specific to paleontological resources would be the same as Alternative B, the related impacts on paleontological resources would be the same as those described above under Alternative B.

Similar conditions apply for land disposal, retention, and acquisition as with Alternative B and Alternative D. Under Alternative C, 13 percent less area than Alternative A would be identified for disposal including 10,700 fewer acres for a total 8,300 acres of PFYC Class 3, 4, and U. Thus, 94 percent of the PFYC 3 (43,300 acres), PFYC 4 (2,400 acres), and PFYC U (82,700 acres) areas within the BLM-administered lands would be identified for retention. This is an 8 percent increase in retention of PFYC 3, 4, and U areas when compared with Alternative A, which would allow for continuation of the BLM management of these areas and the potential paleontological resources they contain.

Like Alternative B, under Alternative C, 50 percent less BLM-administered lands would be open to ROW authorization than Alternative A, including 62 percent less acres of the PFYC 3 (16,400 acres), 93 percent less acres of the PFYC 4 (200 acres), and 55 percent less acres of PFYC U (16,000 acres). The remaining 103,800-acres (or 76 percent) of PFYC 3, 4, and U would be within ROW avoidance/or exclusion areas, which is 58 percent more than under Alternative A. Potential impacts on paleontological resources from ROW authorizations would be limited or eliminated in these areas under Alternative B.

Under Alternative C, areas available for mineral entry and lease are like those available under Alternative B. Under Alternative C, 48,600 fewer acres of BLM-administered surface lands are proposed for withdrawal, including 5 percent (2,100 acres) of the PFYC 3, 26 percent (700 acres) of the PFYC 4, and 9 percent (7,600 acres) of PFYC U, on BLM-administered lands. As compared with Alternative B, this decrease in proposed withdrawal areas under Alternative C would reduce potential for limiting surface disturbance, thereby limiting potential impacts on paleontological resources from mineral entry.

Unlike Alternative A, under Alternative C the acreage open to fluid leasing with standard terms is different, 3,200 acres less, than the acreage open for mineral materials leasing. Compared to Alternative A, under Alternative C, 86,300 fewer acres, including 26,500 fewer acres of PFYC 3, 4, and U, would be managed as open for mineral materials leasing. These areas open for leasing under Alternative C would include 59 percent (26,400 acres) of PFYC 3, 15 percent (400 acres) of PFYC 4, and 51 percent (45,000 acres) of PFYC U within the BLM-administered lands, or 38 percent, 22 percent, and 9 percent less of each PFYC class than Alternative A. The remainder of the PFYC 3, 4, and U areas would be closed to leasing or open with a no surface occupancy stipulation, thereby eliminating the potential for surface disturbance and reducing potential for impacts on paleontological resources.

Under Alternative C, SRMAs, ERMA, and RMZs would include 10 percent more of the PFYC 3 (4,500 acres), 85 percent more of the PFYC 4 (2,300 acres), and 16 percent of the PFYC U (14,100 acres) within the BLM-administered lands than Alternative A. Potential for impact on unknown paleontological resources would increase with the amount of area and PFYC value of the geologic unit exposed within an existing or proposed recreation area. For example, the creation of the Redding Trails and Sacramento River Bend ERMA could result in increased potential for impact on paleontological resources due to the presence of specific formations including the Tehama Formation (PFYC 4). Thus, the potential for impact due to recreation activities to unknown paleontological resources is greater under Alternative C than Alternative A. Mitigation steps that include a paleontological resource inventory of the area should be completed to reduce the potential for human caused impacts on paleontological resources.

Under Alternative C, BLM-administered lands managed as OHV open areas would remain the same as Alternative A. Those managed as OHV limited would vary only minimally and they would contain the same percent total of each PFYC class as under Alternative A. Overall, Alternative C management would decrease OHV closed and increase OHV limited travel areas compared with Alternative A, but it does include an increase of 100 acres of mapped geologic units ranked as PFYC U, which would be managed as OHV closed instead of OHV limited. This additional management could add to paleontological resources in these areas. Yet, much of the additional OHV limited acreage is mapped as geologic units ranked as PFYC 1 and 2 and it would have minimal potential for increased impact on paleontological resources when compared with Alternative A.

When compared with Alternative A, Alternative C would increase the land available for grazing on geological units with PFYC 3 (24,900 acres), PFYC 4 (2,600 acres), or PFYC U (63,500 acres) by 30,700 acres for a total of 91,000 acres, and it would reduce the land unavailable for grazing by the same amount. Areas open to grazing in Alternative C would include 38 percent more of the PFYC 3 (or 17,100 acres), 15 percent more of the PFYC U (or 13,600 acres), and the same amount of the PFYC 4 within the BLM-administered lands. Under Alternative C, 64,500 acres would be managed as grazing allotments at any given time, therefore, impacts would be limited to those areas where grazing allotments are active. These areas could have increased impacts from grazing management decisions over Alternative A due to the

slight increase in acres managed as grazing allotments. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

Under Alternative C, 42,400 acres of the BLM-administered lands would be within seven designated ACECs including 3 percent of PFYC 3 (1,400 acres), 63 percent of PFYC 4 (1,700 acres), and 16 percent of PFYC U (14,300 acres) that are within BLM-administered lands. As with Alternative A, any potential paleontological resource within the boundaries of these ACECs would have added protection through management that regulate use and limit human-caused surface disturbance. Under Alternative C, when compared with Alternative A, there would be an overall decrease of 12,200 acres within designated ACECs, including a decrease of 15,300 acres of PFYC U, a decrease of 100 in acres of PFYC 3, and no change in acres of PFYC 4, as most of the additional acreage is mapped as geologic units ranked as PFYC I and 2. Under Alternative C, there would be no change in protection for PFYC 3 and 4 areas, but there would be a decrease in protection for those acres of PFYC U not within the boundaries of a designated ACEC.

Like Alternative B, under Alternative C there are no eligible WSR, but there are areas of suitable WSR. In Alternative C, the suitable WSR would cross 300 acres (or <1 percent) of PFYC U, 22,400 acres (or 16 percent) less than under Alternative B, and it does not include acres of PFYC 3 or 4. In turn, paleontological resources, if present, would have less protection in these areas under Alternative C when compared with Alternative B.

Coastal Strip management is similar to Alternative B, except that under Alternative C new land acquired within the Coastal Strip would be managed as OHV limited instead of OHV closed. This management change could increase the potential for impact on paleontological resources in areas of PFYC 4, 3, and U because newly acquired lands would be less protected from motorized recreation.

Table D-60 summarizes Alternative C acres by PFYC designation and VRM Class. Alternative C is quite like Alternative A; there is just 7 percent fewer acres of PFYC 3, 4, and U in VRM Class II areas than in Alternative A and 6 percent more acres of PFYC 3, 4, and U in VRM Class III areas. Unlike Alternative A, all the PFYC 4 areas intersect only VRM Class III areas, and no PFYC 4 are found in other VRM Classes. The limited additional PFYC 3 and U acres in VRM Class II areas are less likely to be impacted by human activities under Alternative B than those acres within Alternative A where they are within VRM Class III areas.

Table D-60
PFYC Class by VRM Class Under Alternative C (acres)

VRM Class	PFYC I or 2	PFYC 3	PFYC 4	PFYC U	Combined PFYC 3, 4, and U	Percent of Total PFYC 3, 4, and U on BLM surface
I	36,000	100	0	22,400	22,500	17
II	13,600	900	0	6,400	7,300	5
III	194,900	44,000	2,700	59,900	106,600	78
IV	900	0	0	100	100	<1
Total Acres	245,400	45,000	2,700	88,800	136,500	

Note: Acres do not include 100 acres labeled as water.

Unlike Alternative A, Alternative C like Alternative B includes both areas to be managed to protect and areas to be managed to minimize impacts on lands with wilderness characteristics. The types of effects are as described in Alternative B, but under Alternative C, the (5,700 acres) of the lands with wilderness characteristics ranked as PFYC 3 and 4 and 70 percent (or 10,200 acres) of the lands with wilderness characteristics ranked as PFYC U would be managed for minimizing impacts instead of protecting lands with wilderness characteristics. The remaining 30 percent (or 4,300 acres) of the lands with wilderness characteristics ranked as PFYC U, or 5 percent of all PFYC U within BLM-administered lands, would be managed for protecting lands with wilderness characteristics. Thus, the restrictions on disturbance and protection for potential paleontological resources would be less under Alternative C than Alternative B, but greater than Alternative A.

Alternative D

Effects under Alternative D are the same as those described under Alternative A except for the descriptions noted below.

Because management specific to paleontological resources would be the same as Alternative B, the related impacts on paleontological resources would be the same as those described above under Alternative B.

Similar conditions apply for land disposal, retention, and acquisition as with Alternative B and Alternative C. Under Alternative D, 25 percent less acres would be identified for disposal, including 17,600 fewer acres (or a total of 1,400 acres) of PFYC 3, 4, and U than Alternative A. Thus, 99 percent of the PFYC 3 (44,800 acres), PFYC 4 (2,600 acres), and PFYC U (88,000 acres) areas within BLM-administered lands would be identified for retention. This is a 13 percent increase in retention of PFYC 3, 4, and U areas when compared with Alternative A, which would allow for continuation of BLM-management of these areas and the potential paleontological resources they contain.

Like Alternative B, under Alternative D, 52 percent fewer acres of BLM-administered lands would be open to ROW authorization than Alternative A, including 62 percent fewer acres of the PFYC 3 (15,900 acres), 93 percent fewer acres of the PFYC 4 (200 acres), and 56 percent fewer acres of PFYC U (14,300 acres). The remaining 106,000 acres (or 77 percent) of PFYC 3, 4, and U would be within ROW avoidance/or exclusion areas, this is 59 percent more than under Alternative A. Potential impacts on paleontological resources from ROW authorizations would be limited or eliminated in these areas under Alternative D.

Under Alternative D, areas available for mineral entry and lease are similar to those available under Alternative B. Under Alternative D, 18,100 fewer acres are proposed for withdrawal, including 5 percent (2,400 acres) of the PFYC 3, 30 percent (800 acres) of the PFYC 4, and 21 percent (18,900 acres) of PFYC U on BLM-administered lands. As compared with Alternative B, the decrease in proposed withdrawal areas under Alternative D would reduce potential for limiting surface disturbance, and thereby would limit potential impacts on paleontological resources from mineral entry.

Unlike Alternative A, under Alternative D the acreage open to fluid leasing with standard terms is different, 42,500 acres less, than the acreages open for mineral materials leasing. Compared to Alternative A, under Alternative D, 128,100 fewer acres, including 40,900 fewer acres of PFYC 3, 4, and U, would be managed as open for mineral materials leasing. These areas open for leasing under Alternative D would include 58 percent (25,900 acres) of PFYC 3, 11 percent (300 acres) of PFYC 4, and 35 percent (31,200 acres) of PFYC U within the BLM-administered lands, or 39 percent, 26 percent, and 25 percent less of each PFYC

class than Alternative A. The remainder of the PFYC 3, 4, and U areas would be closed to leasing or open with a no surface occupancy stipulation, thereby eliminating the potential for surface disturbance and reducing potential for impacts on paleontological resources.

Under Alternative D, SRMAs and ERMAs would include 10 percent more of the PFYC 3 (4,500 acres), 85 percent more of the PFYC 4 (2,300 acres), and 15 percent of the PFYC U (13,500 acres) within the BLM-administered lands than Alternative A. These values and impact types are the same as Alternative C.

Alternative D would have more acres managed as closed to OHV travel as compared with Alternative A, including an increase of 300 acres of mapped geologic units ranked as PFYC U, which would be managed as OHV closed instead of OHV limited. This additional management could add some additional protections to paleontological resources in these areas.

When compared with Alternative A, Alternative D would decrease land available for livestock grazing by 700 acres on geological units with PFYC 3 (8,600 acres), PFYC 4 (2,000 acres), or PFYC U (49,000 acre) and increase the land unavailable for grazing by the same amount. These areas open to grazing in Alternative D would include 2 percent more of the PFYC 3 (or 800 acres), 1 percent less of the PFYC U (or 900 acres), and 22 percent less (or 600 acres) of the PFYC 4 within BLM-administered lands. Under Alternative D, 59,000 acres would be managed as grazing allotments at any given time, therefore, impacts would be limited to those areas where grazing allotments are active. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

Under Alternative D, 87,900 acres of the BLM-administered lands would be within 26 designated ACECs including 4 percent of PFYC 3 (1,900 acres), 85 percent of PFYC 4 (2,300 acres), and 29 percent of PFYC U (26,000 acres) that are within the BLM-administered lands. As with Alternative A, any potential paleontological resources within the boundaries of these ACECs would have added protection through management that regulate use and limit human-caused surface disturbance. Under Alternative D when compared with Alternative A, there would be an overall increase of 33,300 acres within designated ACECs, including an additional 400 acres of PFYC 3 and 600 acres of PFYC 4, but a decrease of 3,600 acres of PFYC U as most of the additional acreage is mapped as geologic units ranked as PFYC 1 and 2. Under Alternative D, there would be added protection for the acres of PFYC 3 and 4 within the boundaries of designated ACECs, along with a decrease in protection for those acres of PFYC U not within the boundaries of a designated ACEC.

Under Alternative D, the suitable WSRs would cross 14,800 acres of land designated as PFYC 3, 4, or U, or 8,000 acres less than under Alternative B, including less than 1 percent less (300 acres) of PFYC 3, the same acreage (900 acres) of PFYC 4 and 9 percent less (7,700 acres) of PFYC U. In turn paleontological resources, if present, would have less protection in these areas under Alternative D when compared with Alternative B.

Under Alternative D, new land acquired within the Coastal Strip would be managed as OHV limited to designated routes instead of OHV closed as within Alternatives B; this could increase the potential for impact on paleontological resources in areas of PFYC 3, 4, and U because newly acquired lands would be less protected from motorized recreation.

Table D-6I summarizes Alternative D acres by PFYC designation and VRM Class. Alternative D is nearly identical to Alternative A, there is just 3 percent more acres of the PFYC 3, 4, and U intersecting VRM Class II areas than in Alternative A and percent fewer acres of PFYC 3, 4, and U intersecting VRM Class III areas. PFYC Class 4 intersects with both VRM Class II (600 acres) and VRM Class III (2,100 acres) areas. The additional PFYC 3, 4, and U acres in VRM Class II areas are less likely to be impacted by human activities under Alternative D, than those acres within Alternative A where they are within VRM Class III areas.

Table D-6I
PFYC Class by VRM Class Under Alternative D (acres)

VRM Class	PFYC I or 2	PFYC 3	PFYC 4	PFYC U	Combined PFYC 3, 4, and U	Percent of Total PFYC 3, 4, and U on BLM surface
I	36,600	100	0	22,400	22,500	17
II	40,900	1,200	600	18,700	20,500	15
III	167,100	43,700	2,100	47,600	93,400	68
IV	800	0	0	0	0	0
Total Acres	245,400	45,000	2,700	88,700	136,400	

Note: Acres do not include 100 acres labeled as water.

Unlike Alternative A, Alternative D includes both areas to be managed to protect and areas managed to minimize impacts on lands with wilderness characteristics. The types of effects are as described in Alternative C, except that under Alternative D just over twice the area (or an additional 4,900-acres) designated as PFYC U within the lands with wilderness characteristics would be managed for protection instead of for minimizing impacts. Thus, the restrictions on disturbance and protection for paleontological resources would be greater under Alternative D than Alternative A and Alternative C, but less than Alternative B.

Cumulative Impacts

The cumulative impact analysis area for paleontological resources is the planning area, regardless of ownership. Cumulative effects from the present and reasonably foreseeable actions listed in **Appendix B**, Approach to the Analysis could occur where these actions overlap areas with paleontological potential (PFYC 3, 4, 5, or U).

Effects on paleontological resources that may have occurred in the past could include destruction or damage of resources due to construction, logging, energy infrastructure development, mining and mineral use, recreation, unauthorized fossil collecting, and vandalism and the effects of natural processes (e.g., erosion and landslides).

Reasonably foreseeable future actions with the potential to affect paleontological resources are like past and present actions. In the planning area, increases in surface disturbance due to energy and mineral development and leasable mineral is unlikely due to current stable conditions and they are not expected to increase overtime unless changes occur in market conditions for base metals and regulatory restrictions placed on exploration and mining. Previous studies in the planning area have identified only moderate potential for both solar and wind projects and there are no current applications for renewable energy development. Geothermal energy projects are unlikely in the planning area due to minimum or no

resource potential. All these types of development projects would be expected to cause some surface disturbance, and they could impact paleontological resources especially if they intersect geologic units with potential to contain paleontological resources. Assessments and properly implemented mitigation, where applicable, would reduce or eliminate impacts on paleontological resources.

Water demand is currently high and expected to increase in the foreseeable future based on population increases, stream flow variability, and reduced snowpack. These changes, along with increased erosion, will likely impact paleontological resources within the planning area, which may occur close to rivers, streams, and cave systems due to increases in erosion, destabilizing banks, slopes from reduced vegetation cover from drought conditions, and extreme variability in amount of precipitation. Many projects are planned to help restore and protect water environments and habitats throughout the planning area, which would improve protection of paleontological resources by reducing erosion and restoring habitats.

Vegetation habitats are likely to further undergo changes in distribution as they attempt to keep pace with climatological changes. These changes in the habitats overlying geological units with high PFYC can cause increased erosion of these units and thereby expose or harm paleontological resources within them. Mitigation measures can be taken to resurvey areas with known paleontologically significant resources depending on the degree of erosion within an area. Increases in wildfire and shifts in ecosystems due to wildfire can quickly cause increases in erosion throughout an area, especially along steep slopes. It is important to inventory areas post wildfire for paleontological resources that would be at increased harm to erosion and damage. Fuel treatments can help prevent catastrophic wildfires, and they would overall help reduce impact on paleontological resources in the planning area. There are multiple projects aimed to restore or enhance habitats and manage vegetation throughout the planning area, which would improve protection of paleontological resources.

Livestock grazing in the planning area is limited to isolated tracts of land with possible suitable vegetation. While future trends would depend on environmental factors, increases in livestock grazing could cause an increase in erosion and harm to paleontological resources at or near the surface.

Land acquisition can improve protection of paleontological resources through federal ownership and stewardship. Any land that is planned to be disposed of should have a thorough review of paleontological resources, which may include a survey conducted by a professional paleontologist to verify that no significant paleontological resources are present on the land. New ROW applications would continue at current levels due to new access and ongoing maintenance of existing infrastructure. Previously disturbed ROWs would typically not need additional protection from paleontological resources, but any new disturbance would need to follow applicable rules, regulations, and policies to protect paleontological resources.

Recreational use is currently high with multiple opportunities throughout the planning area, and it is expected to continue to increase on the BLM and the non-BLM administered lands. New trails and connections are expected to be built to meet increased need. Unauthorized travel off designated or existing routes has occurred and it is expected to increase. Future changes in recreational activities can result in additional erosion causing harm to paleontological resources at or near the surface. Additional human traffic could increase the possibility of damage, theft, and vandalism of paleontological resources. Steps to protect paleontological resources from these potential impacts can be taken, which include utilizing existing heavily trafficked routes, previously disturbed surfaces, and areas of low PFYC for new recreational trails, reducing or limiting access in certain areas of high or unknown PFYC geological units

managing, and assessing recreation areas and adjacent areas for paleontological resources potential. Enforcement of existing laws for unauthorized travel off designated or existing routes and increasing community and public education and engagement in paleontological resources would increase in the protection of these resources.

Wildfires are expected to increase as both naturally occurring and human caused fires would increase due to drier conditions, increased fuel loads and increases in human activity in areas prone to wildfires. Wildland fire management is expected to increase throughout the planning area particularly on Forest Service and the BLM-administered lands. It should also help reduce the impact on paleontological resources in the planning area.

Climate change in the planning area is expected to continue to interact with ecosystems and habitats causing greater erosion in areas that can impact paleontological resources. Of particular interest are continued wildfire dangers, especially along steep slopes, where loss of slope stabilizing vegetation and soils would cause substantial increase in erosion and expose underlying geological units, which could contain paleontological resources. In addition, coastal erosion from increases in storm intensity and expected sea level rise would cause damage to geological units, which may contain paleontological resources. Steps to reduce the impacts of climate change, such as reducing greenhouse gas emissions, and mitigation strategies to reduce intensity of wildfires as well as improving coastal resiliency and helping to reduce the impacts on paleontological resources. Additionally, surveys of geological units with paleontological potential in these areas could reduce the loss of paleontological resources due to natural impacts from climate change.

D.2.11 Visual Resources

Issue Statements

- How would the alternatives modify the base VRM Class Objectives to achieve scenery management and public health and safety?

Affected Environment

The NCIP planning area spans a vast and diverse landscape that reaches from the Pacific Ocean in the west, through the central California valley to the Sierra Nevada and Cascade Mountain Ranges to the east. The planning area contains portions of seven EPA Level III Ecoregions (**Map 3-14 in Appendix A**; EPA 2020): Cascades, Central California Valley, Coast Range, Klamath Mountains/California High North Coast Range, Sierra Nevada, Eastern Cascade Slopes and Foothills, and Central California Foothills and Coastal Mountains. There are several eligible or officially designated scenic highways/byways (Highway 299, 36, 96, and 44, US Highway 101, and Interstate 5) (Caltrans 2019) within the planning area. The region also includes several nationally and state designated WSRs and designated wilderness areas.

Many people live and recreate in the planning area because of its unique and high-quality visual features. Travelers throughout the US and around the world find the scenery to be an important part of their visit. Scenery is a valued amenity to local communities within the planning area, contributing to the quality of life, economic value of tourism, recreation, and associated businesses; these elements are also identified as part of the NCIP Socioeconomic Baseline Report (BLM 2021e). Visitors to northern California expect to see high-quality scenic values and are vital contributors to the state's economy. Public demand for natural and cultural resource uses and protection within the planning area and changes in socioeconomics

have resulted in both beneficial and adverse impacts on visual resources and in how these landscapes are valued.

The BLM-administered decision area has an abundance of resources such as minerals, water, wildlife, vegetation, and recreation that have all been used by various means over the past several decades. Mining, logging, recreational developments, ROWs, communication sites, and other surface developments have created contrasts with the characteristic natural landscape throughout the planning area. Additionally, large-scale, catastrophic wildfires in recent years have influenced the characteristic landscape by altering vegetation patterns and vegetation quality, which is highly valued in the planning area.

For the purposes of visual resource management, visual resources are defined as the natural and built visible features of the landscape. Scenic quality is the measure of the visual appeal of a unit of land. Visual values of the NCIP are managed through the BLM VRM system (BLM 1984).

The qualitative and quantitative indicators and measures focus on determination and disclosure of impacts on scenic quality and impacts on viewers. The Redding and Arcata FO Visual Resources Inventories (VRIs) provide baselines to support these indicators and measures. The VRI represents the scenic (visual) values for the planning area and is used, along with the underlying values of scenic quality, visual sensitivity, and distance zones, for describing the effects to visual resources and for making decisions on the management of scenic (visual) values (BLM 1986a).

Three of the VRI Classes (VRI Class II, III, and IV) are derived from an overlay of the three inventory factors scenic quality, visual sensitivity, and distance zones. **Table D-62** summarizes the acreages and percentages of the planning area categorized by BLM VRI components areas well as the overall VRI Class by decision area. VRI classes are an indicator of the relative value of visual resources, though each component should be considered independently (for example, Class II is high overall visual value based on inventory; Class III represents a moderate overall visual value based on inventory; and Class IV represents areas that are typically lower scenic quality and are in the background or seldom seen distance zones.). The NCIP analysis area is predominantly VRI Class I and Class II, either due to administrative decisions (VRI Class I) or visual values (VRI Class II). Scenic quality in the analysis area is predominantly Class A and Class B (highest ratings). Sensitivity levels are mostly moderate to high. Distance zone visibility within the planning area is predominantly foreground to middleground.

Approximately 91 percent of the Redding FO has high (Class A) to moderate (Class B) scenic quality; 100 percent of the Arcata FO has moderate to high scenic quality. Seventy four percent of the Redding FO and 64 percent of the Arcata FO have moderate to high sensitivity to visual change. Approximately 73 percent of the Redding FO and 61 percent of the Arcata FO landscapes within the inventory area are viewed from the foreground to middleground zone, which is approximately 0 to 5 miles from travel routes and other important viewpoints. Together, these three factors contribute to the public land users placing a high value on the quality and character of the visual environment. Although cultural (human-made) modifications are increasing throughout the inventory area, they tend to add little or no visual variety to the area and introduce only minimally discordant elements such as power lines. The inventory area does offer some elements of visual scarcity such as Mount Shasta and the Pacific Ocean, which are distinctive, unique, and memorable when viewed from near or far.

Table D-62
Visual Resources Inventory Summary

Scenic Quality Classes	Ratings and Acreage Quantities					
BLM scenic quality classes (planning area)	Class A		Class B		Class C	
	Acres	Percentage	Acres	Percentage	Acres	Percentage
	5,338,600	38	7,976,920	56	926,600	.06
BLM sensitivity levels (planning area)	High		Moderate		Low	
	Acres	Percentage	Acres	Percentage	Acres	Percentage
	4,746,000	33	5,373,300	38	4,122,800	29
BLM distance zones (planning area)	Foreground–Middleground		Background		Seldom seen	
	Acres	Percentage	Acres	Percentage	Acres	Percentage
	9,892,400	69	724,700	.05	3,625,300	25

VRI Classes	Ratings and Acreage Quantities							
BLM (planning area)	VRI Class I¹		VRI Class II		VRI Class III		VRI Class IV	
	Acres	%²	Acres	%	Acres	%	Acres	%
	1,436,600	10.1	5,584,500	39.2	2,754,600	19.3	4,468,700	31.4
Surface acreage of VRI classes on BLM-administered land (decision area)	VRI Class I		VRI Class II		VRI Class III		VRI Class IV	
	Acres	%³	Acres	%	Acres	%	Acres	%
	58,500	0.4	169,410	1.2	99,700	0.7	52,600	0.4

Notes:

¹ VRI data are missing in small portions of the planning area. The missing acreage is only 2,000 acres (0.5 percent of planning area).² Percentage of planning area³ Percentage of decision area

Visual contrast and related impacts on the scenic quality of the planning area have increased due to the occurrence of large-scale catastrophic wildfires. Since the 2015 VRIs, approximately 1,183,800 acres (22 percent) of Scenic Quality A (high scenic quality) lands within the planning area have been impacted by wildfire, with an additional 1,321,800 acres (17 percent) of Scenic Quality B (above-average scenic quality) lands being impacted by wildfire (BLM 1986b).

A large portion of the planning area land base is inventoried as VRI Class II (5,584,500 acres) followed by VRI Class IV (4,468,700 acres). There are 1,436,600 acres of VRI Class I (wilderness areas, WSAs, and wild sections of designated WSRs) within the planning areas. Comparatively, within the decision area there are 58,500 acres of VRI Class I (0.4 percent of planning area VRI Class I), 169,410 acres of VRI Class II (1.2 percent of planning area VRI Class II), 99,700 acres of VRI Class III (0.7 percent of planning area VRI Class III) and 52,600 acres of VRI Class IV (0.4 percent of planning area VRI Class IV).

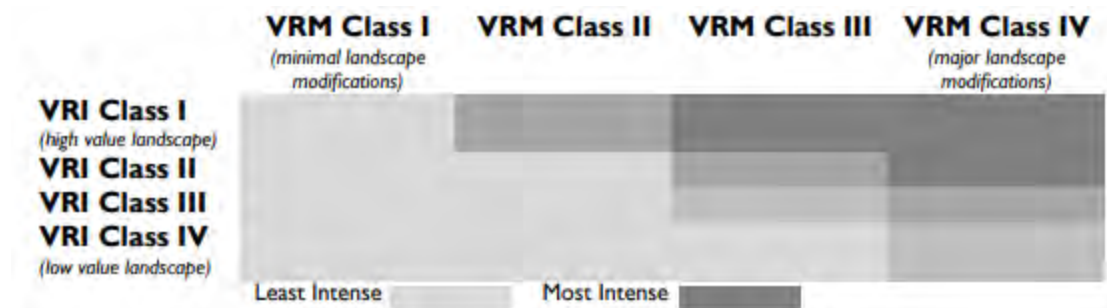
Environmental Consequences

The VRI components (scenic quality, sensitivity, and visual distance zones) as well as overall VRI class form the basis for analysis in this section. VRI classes use the same numerical scale (i.e., I through IV) as VRM classes and are a way to communicate the degree of visual value in the area. Class II is high overall visual value based on inventory; Class III represents a moderate overall visual value based on inventory; and Class IV represents areas that are typically lower scenic quality and are in the background or seldom seen distance zones. VRI Class I is assigned for areas where congressional or administrative decisions were already made to preserve the natural setting outside of the inventory process (e.g., wilderness areas).

Impacts on visual resources are assessed by comparing the VRI class of an area to the VRM class for the same area and assessing the potential for change in the three components of VRI classification (scenic quality, sensitivity level, and distance zones). The management of other resources and resource uses and how those actions might impact scenic resources are also examined.

The relative intensities of impacts anticipated as a result of applying certain VRM classifications to certain VRI classifications are displayed in the following diagram (**Figure D-5**). In general, the intensity of impact increases as both the value of the landscape and allowable landscape modifications increase.

Figure D-5
VRI Classes and VRM Classes



Source: BLM 2016c

Applying VRM Class I objectives to any VRI classification provides for natural ecological change, with limited management activity and the level of allowable change to the characteristic landscape would be low. In other words, the VRI classification would likely remain the same because only minimal landscape modifications would be permitted. On the other hand, managing lands according to VRM Class IV objectives would allow for major modifications to landscape character. Based on visibility, the perceived intensity of impact would be greater in VRI Class I areas than in VRI Class IV areas because of the higher value of the landscape. It should be noted that landscapes with higher scenic quality, generally identified as VRI Class II (VRI Class I areas are sometimes not inventoried for scenic quality), often have more visual variety in landform, vegetation, color, and other factors than landscapes with lower scenic quality, generally identified as VRI Class III or IV, and may have more opportunities for blending modifications into the landscape and absorbing visual contrast.

When assessing scenic quality, seven factors are considered: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. Where cultural modifications would be allowed, not only would the built environment change the landscape, but there could be a change in the landform or variety of vegetation forms, patterns, or texture from construction activities, removing topsoil, removing vegetation, and changing soil composition. Furthermore, where cultural modifications would be allowed to the extent that the basic components of the landscape (e.g., vegetation, soil, rock) changed drastically, the variety, contrast, and harmony of color could change as well. Changes to water could be incurred by the development of diversions, dams, or construction of facilities that block the feature from view. Cultural modifications in one area could also impact the adjacent scenery of another area. Finally, while the scarcity of the landscape itself would not change, modifications of scarce landscapes could be perceived as more intense than modification of more common landscapes, depending upon the sensitivity of the area.

The results of the VRI ratings completed in 2015 (Otak 2015a, 2015b) are presented in **Table D-62**, Visual Resource Inventory Summary. The number of acres of each VRM class for each alternative is shown in **Table B-1** in **Appendix B**.

Determination and disclosure of potential effects caused by the alternatives to visual resources involve the analysis of qualitative and quantitative changes to the characteristic landscape. Estimations of impacts on scenery and impacts to people/viewers are based on comparisons of alternatives with the existing characteristic landscape, as documented according to BLM VRIs, including scenic quality, sensitivity levels, and distance zones.

Impacts on scenery are based on estimated comparisons of management activities with existing scenic quality ratings. The ratings are quantitative scores based on qualitative criteria associated with landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications (**Table D-63**).

Table D-63
Landscape Scenery Impacts

Scenic Quality	RMP Visual Change to the Characteristic Landscape			
	VRM Class I	VRM Class II	VRM Class III	VRM Class IV
Class A	Very limited	Low	High	High
Class B	Very limited	Low	Moderate	High
Class C	Very limited	Low	Low	Moderate

Sensitive viewers' impacts are determined based on the comparison of change caused by the RMP decisions (activities) with sensitivity/user concern levels and distance zones (0 to 0.5 miles, 0.5 to 5 miles, and greater than 5 miles) (**Table D-64**).

While topography and vegetation can allow for some landscape modifications, many built structures and roads can dominate the landscape, depending on their size, position, color, and contrast with surrounding conditions. As such, this analysis focuses on management actions and allowable uses that have the most potential to increase or decrease VRI class.

Table D-64
Sensitivity Level and User Concern Impacts

Visibility/ Distance	RMP Visual Change to the Characteristic Landscape			
	VRM Class I	VRM Class II	VRM Class III	VRM Class IV
High Sensitivity Level / User Concern Impacts				
0–0.5 miles	Very limited	Low	High	High
0.5–5 miles	Very limited	Low	Moderate	High
Greater than 5 miles	Very limited	Low	Low	Moderate
Medium Sensitivity Level / User Concern Impacts				
0–0.5 mile	Very limited	Low	High	Moderate
0.5–5 miles	Very limited	Low	Moderate	Low
Greater than 5 miles	Very limited	Low	Low	Low

Map 2-6 through **Map 2-9** in **Appendix A** show the BLM VRM classes for Alternatives A, B, C, and D. Areas managed under the VRM Class I objective would have long-term, protection-related, beneficial impacts on scenery and viewers because scenic quality would be preserved or retained. Areas managed under the VRM Class II objective would have long-term, protection-related, minimal impacts on scenery

and viewers because any changes to the characteristic landscape would be limited. Impacts of VRM Class III and Class IV designations on VRI factor values (scenic quality, sensitivity levels, distance zones, and VRI Classes) are disclosed in **Figure D-5**. Areas managed under VRM Class III objectives would have the potential to create adverse impacts on scenery and viewers because changes to the characteristic landscape could be moderate. VRM Class IV areas would be managed for lower-level protection of scenic quality and more area would be open for potential surface disturbance-related characteristic landscape degradation.

Impacts Common to All Alternatives

Implementing management actions for vegetation, soil resources, mineral resources, utilities and communication facilities, recreation and visitor services, and trail and travel management have the potential to result in short-term effects on visual resources, including the following underlying components of scenic quality: vegetation, color, and cultural modifications. Since the ground-disturbing activities associated with wildland fire management, soils and, to some degree, recreation programs are primarily involved in restoring healthier and more diverse native plant communities to the landscape, these programs would enhance the vegetation and color components of scenic quality over the long term. Cultural resource management actions may also result in short-term, isolated disturbances associated with scientific excavation, but would not have permanent effects.

Managing land for forestry, harvest zones, and wildland fire management would result in localized, long-term impacts by allowing for the removal of timber and other substantial vegetation that would alter the visual setting. Impacts would be site-specific, depending upon the VRI class of the area for harvest, but would primarily affect the vegetation, color, and cultural modification components of scenic quality.

Livestock grazing may cause secondary effects on visual resources through trampling, compaction and grazing of vegetation. Watering areas are especially prone to disturbance, where concentrated vegetation and soil damage can occur. Structures associated with livestock grazing management (e.g., fences, stock ponds, guzzlers, cattle guards, feeding troughs) could create visual intrusions. It is unlikely that these activities or structures would degrade the scenic quality of an area so as to change the VRI class. Modifications to grazing practices to improve land health needed as a result of overgrazing would also help restore the visual quality of the area.

Common recreation area activities in the decision area include hunting, fishing, swimming, canoeing, whitewater boating, surfing, OHV use, relaxing, camping, hiking, mountain biking, equestrian use, wildlife viewing, casual mineral collection, and gold panning. Casual recreation use generally would not impact visual resources or the visual character on BLM-administered lands. However, limiting use or travel to designated routes can provide a measure of assurance against trail proliferation and promote the recovery of natural processes in the area, potentially enhancing scenic quality. All forms of travel that produce established routes can impact visual resources. These impacts are generally confined to the route itself.

There are currently two established OHV recreation areas within the decision area. These areas are specifically managed primarily to provide high-quality OHV recreation opportunities among other recreational activities. The Chappie-Shasta Recreation Area and Samoa Dunes Recreation Area are the only area open to OHV travel. Areas open for OHV use and allowing for recreational developments would support a wide variety of recreational users because many non-mechanized users (e.g., hiking) and OHV riders desire developed campgrounds, easy trail access, and similar developed recreation settings. All

public lands are required to have OHV area designations (43 CFR Part 1600 and Part 8342.1). Areas must be designated as open, limited, or closed to OHV travel. OHV open areas allow all types of vehicle use at all times. OHV limited areas are restricted to designated routes at certain times, in certain areas, and/or to certain vehicular use. Restrictions are generally within the following categories: number of vehicles, types of vehicles, time or season of vehicle use, permitted or state licensed vehicle use, use on existing roads and trails, use on designated roads and trails, and other restrictions. Closed areas are unavailable for OHV use. Area designations would not affect BLM ROWs, permitted uses, county or state roads, or other valid existing rights. Areas open to intensive use such as OHV recreation can affect visual resources by affecting the visual character of the entire area. Where cross-country travel occurs within Scenic Quality A or high-sensitivity landscapes, the perceived impacts would be the most intense.

Managing areas as ROW exclusion would protect visual resources by prohibiting ROW development, such as roads; pipelines; transmission lines; communication sites; wind, solar, and geothermal development; and other land use authorizations that could alter the visual quality of an area. These types of activities could also affect the vegetation and color components of scenic quality, particularly during construction periods. ROW avoidance would provide limited protection by requiring mitigation measures to minimize alteration of the physical setting. In other areas, utilities such as new transmission lines, access roads, and related development have the potential to permanently affect visual resources. Areas of high to very high development potential over the life of the plan are more likely to occur incrementally within VRI Class III and IV areas as a result of these areas often having similar development or reduced visual values. Though these areas often have less visual variety or value, they may still be important to the public. Additionally, VRM Class III and IV allow for a moderate to high level of change to the characteristic landscape, the BLM still should ensure projects blend in with the surrounding landscape and mitigate impacts if design features are not built into a project proposal. Any new development would still have to conform with VRM Class III or IV.

Mineral development activities can include leasable minerals, mineral materials, and locatable minerals. Mineral development trends over the past 20 years show little to moderate increases in mineral development activities. Future trends in mineral development would be affected by a variety of factors, including but not limited to economic and technological influences. Where development activities would occur, areas that are closed to mineral leasing and surface-disturbing activities would mitigate impacts on visual quality from such action. Applying no surface occupancy stipulations would provide direct protection for visual resources by preventing surface occupancy and use that could alter viewsheds, vegetation, color, adjacent scenery, and cultural modifications associated with the scenic quality of an area. In high-quality visual areas, these stipulations would provide some protection against the reclassification of areas to a lower VRI class in the future. In general, alternatives with more acres protected by stipulations would provide more protection to high-quality visual areas.

Visual character is related to the criteria used to determine the presence of wilderness characteristics, including the absence of roads; structures such as developed recreation facilities, fences, pipelines, and power lines; and modifications such as vegetation treatment areas and mines (see lands with wilderness characteristics discussion in **Section D.4.4**).

There are five designated wilderness areas and three WSAs within the planning area, totaling 58,349 acres. By policy, wilderness areas are managed as VRM Class I in accordance with requirements associated with the congressional designation for wilderness. Therefore, these areas are assigned VRI Class I. WSAs are

inventoried for all visual values and assigned VRI Class II, III, or IV. WSAs are also managed as VRM Class I until Congress decides on designation. As a result, all alternatives would allow the same level of protection of scenic quality for wilderness areas and WSAs.

Designating ACECs to protect scenic values would maintain the natural character of the landscape and the importance scenic values that led to their designation. Managing ACECs with scenic value as VRM Class I or Class II would maintain their scenic quality and would limit permitting of development that would adversely impact the scenic quality of the area.

Wild and Scenic River designations in the NWSRS that have a scenic ORV serve to protect the natural visual character of creek and river environments, and to identify the important scenic values that led to their designation. In addition, river segments classified as eligible or suitable for inclusion in the NWSRS may be managed such that any actions that would have an adverse effect on the visual quality of the segment would not be permitted.

Dark night skies have become increasingly valued and an asset to communities scattered through the West, including communities within the planning area. In the more remote parts of the planning area dark night skies can be considered a valued resource due to the level of solitude one may experience when not disturbed by skyglow or light trespass. The potential for impacts on dark night skies is limited by VRM class levels, the degree of use restrictions such as on recreation and OHV facilities (all of which can decrease light pollution), and the extent and management of special designations (which may limit future development and associated light pollution) across alternatives. In response to increased interest from the public regarding protection of dark night skies, the BLM has developed Technical Note 457 – Night Sky and Dark Environments: Best Management Practices for Artificial Light at Night on BLM-administered Land (BLM 2023). This technical note provides a background on night sky values and terminology, types of potential effects resulting from increased light pollution, and comprehensive technical guidance on practical methods for reducing the impacts from artificial outdoor lighting associated with proposed projects (or activities), including the identification of specific BMPs.

Alternative A

Alternative A would continue the management practices identified in the 1993 Redding RMP and the 1992 Arcata RMP. These planning documents do not identify visual resource values from a comprehensive inventory process and do not establish comprehensive VRM management classes. In the BLM lands managed under the Redding RMP, VRM prescriptions are limited to only those areas assigned VRM Class I and Class II, and prescriptions are not assigned to areas where lower visual resource management classes were determined. As a result, under Alternative A, 59,000 acres of land would be managed as VRM Class I, resulting in preservation of the existing visual character of those areas. An additional 24,600 acres would be managed as VRM Class II, allowing for a low level of change. 297,000 acres would be managed as VRM Class III, and the existing character of the landscape would be partially retained. There would be 1,600 acres of land would be managed as VRM Class IV under Alternative A, allowing for major modification of visual character (**Table D-65**). Projects in areas without a VRM classification could impact visual resources on a case-by-case basis, depending on the project. This lack of a comprehensive and unified management protocol under Alternative A results in the fewest agency protections and the greatest potential for impacts on visual resources.

Table D-65
VRM Classes compared with VRI Classes - Alternative A

ALTERNATIVE A		Visual Resource Inventory (VRI) Class - Acres			
VRM Acres		VRI Class I¹	VRI Class II²	VRI Class III²	VRI Class IV²
VRM Class I	59,000	58,500	37,400	20,200	1,300
VRM Class II	24,600	0	6,100	17,100	1,400
VRM Class III	297,000	0	183,100	62,400	49,500
VRM Class IV	1,600	0	1,200	0	400

Source: BLM GIS 2023

Notes:

¹ VRI Class I accounts for management decisions associated with Wilderness and WSAs that occur as part of VRI Class II, III and IV within the decision area.

² As inventoried acres.

Under Alternative A, approximately 95,900 acres of VRI Class I and II (33 percent of the total VRI Class I and II acres) would be managed as VRM Class I or II, which would allow for the greatest preservation of visual values. Approximately 184,300 acres of VRI Class II (81 percent of the total VRI Class II acres) would be managed as VRM Class III or IV allowing for lesser preservation of visual values and the opportunity for the greatest change in visual values. Comparatively, approximately 2,700 acres of VRI Class IV (5 percent of the total VRI Class IV acres) would be managed as VRM Class I or II which would limit the amount of change to the characteristic landscape. Areas that inventory as VRI Class IV and are managed as VRM I or II may afford opportunities for natural rehabilitation or prevent additional change to the existing landscape character. Approximately 49,900 acres of VRI Class IV would be managed as VRM Class III or IV which would allow for management activities that would allow for change to the characteristic landscape and may be more appropriate based on visual value information.

Under Alternative A, 61,300 acres of land would be managed as closed to mineral leasing. In addition, 19,300 acres would be open to mineral leasing, subject to no surface occupancy, and 301,600 acres would be open to mineral leasing, only subject to standard terms and conditions. All stipulations for fluid mineral leasing and other surface-disturbing activities would provide direct or indirect protection for visual resources. The nature of the impacts is the same as that described under *Effects Common to All Alternatives*. Under Alternative A, 300,400 surface acres of land would be managed as open to mineral materials development, and 81,800 acres of land would be managed as closed to mineral materials development. Although mineral development trends over the past 20 years show little to moderate increases in mineral development activities, the extent of future activities associated with Alternative A would be influenced by factors such as economic conditions and technological advances. The nature of the impacts is the same as that described under *Effects Common to All Alternatives*.

Under Alternative A, 322,200 acres of land would be managed as open to locatable mineral entry. In addition, 60,000 acres are withdrawn from mineral entry, and 0 acres would be recommended for withdrawal from locatable mineral entry. General impacts from mineral development are discussed under *Effects Common to All Alternatives*.

ROW exclusion and avoidance areas would indirectly benefit visual resources by preventing new developments that would create visual contrast. There are 58,500 acres managed as ROW exclusion and 11,300 acres managed as ROW avoidance under Alternative A. Of the remaining area, 312,200 acres of VRI Class II and Class III areas would be available for ROW authorization. Alternative A would have the least amount of ROW avoidance and exclusion areas, resulting in the greatest potential for adverse effects

on visual quality and character. General impacts from ROW management are discussed under *Effects Common to All Alternatives*.

Under Alternative A, 190 acres are open to cross-country OHV travel and 322,800 acres are limited to OHV travel on existing and designate routes. On the other hand, approximately 59,200 acres are closed to OHV travel. With Alternative A, five wilderness areas and three WSAs are managed under a variety of VRM classes ranging from VRM Class I to undesignated. While managing for less than VRM Class I might normally allow for degradation of scenic quality and allow modifications in high-sensitivity landscapes, interim management protection for wilderness areas and WSAs requires management as VRM Class I and is such that development that would impair the areas' suitability for wilderness designation would not be allowed, protecting the scenic quality of wilderness areas and WSAs. Alternative A would manage 58,490 acres as wilderness and WSAs. General impacts from OHV, wilderness and WSA management are discussed under *Effects Common to All Alternatives*.

Under Alternative A, no lands with wilderness characteristics would be managed to protect their wilderness characteristics, thus, none of those areas would receive management for wilderness characteristics that could benefit their visual character.

Designating ACECs to protect scenic values would maintain the natural character of the landscape and the scenic values that led to their designation. Approximately 3,470 acres in two areas (Deer Creek and Forks of Butte Creek) were determined to have relevant and important scenic values during the evaluation of nominated ACECs. Of these two ACECs, the visual resource inventory assigned a rating of VRI Class IV to the Deer Creek ACEC and VRI Class II to the Forks of Butte Creek ACEC. Under Alternate A, the Deer Creek ACEC would be managed as VRM Class I, and the Forks of Butte Creek ACEC would be VRM Class II. Managing these ACECs with scenic values as VRM Class I or Class II would maintain their scenic quality and it is unlikely that development would be permitted that would adversely impact the scenic quality of the area. General impacts from designation of ACECs are discussed under *Effects Common to All Alternatives*.

Scenic values of the 117 eligible WSR segments (totaling 201.7 miles) under Alternative A would be protected because actions that would impair their ORVs would be prohibited. This is especially true for the segments that have a scenic ORV or along stream segments eligible or suitable for inclusion in the NWSRS that have a scenic ORV. The BLM would not permit any actions that would have an adverse effect on the visual quality of the segment, protecting visual resources in these areas. Under Alternative A, no new WSR segments would be managed as suitable for inclusion in the NWSRS. General impacts from WSR management are discussed under *Effects Common to All Alternatives*.

Alternative A would continue the wildland fire management actions identified in the 1993 Redding RMP and the 1992 Arcata RMP and 1995 RMP Forest Plan Amendment. CAL FIRE is assigned responsibility for general fire suppression on lands managed by both the Arcata and Redding FOs. Under Alternative A, on lands within the Arcata FO jurisdiction, deviations from CAL FIRE's fire policy are made on a site-specific basis (wilderness, ACECs). Prescribed fire is generally allowed and is addressed on a site-specific basis through the demands of resource objectives. In areas managed by the Redding FO, any fire occurring on public lands is suppressed. ACECs, special RMAs, wilderness areas, WSAs, WSR corridors, and certain other public lands can require modified suppression techniques to protect the known values. Within the Redding FO jurisdiction, vegetation management may occur as a secondary benefit or impact in many BLM activities such as grazing, timber harvest, wetland construction, firefighting, mining, and special-status

species management. The impacts or benefits to vegetation will either be negligible or addressed in the site-specific EA for the parent action. Without a comprehensive wildfire management plan, Alternative A would provide fewer resource-balancing actions and would result in a greater potential for adverse effects to the visual environment throughout the decision area. General impacts from wildland fire management are discussed under *Effects Common to All Alternatives*.

Alternative A contains the least area of VRM Classes I and II (63,100 acres) and restrictions on resource uses that could otherwise increase light pollution and precedes the release of BLM Technical Note 457- Night Sky and Dark Environments: Best Management Practices for Artificial Light at Night on BLM-Managed Land (BLM 2023). General impacts from dark night sky management are discussed under *Effects Common to All Alternatives*.

Alternative B

As shown in **Table D-66**, under Alternative B there would be 70,600 acres (approximately 18 percent more than Alternative A) managed as VRM Class I, resulting in preservation of the existing visual character of those areas. An additional 72,400 acres (approximately 99 percent more than Alternative A) would be managed as VRM Class II, allowing for a low level of change; 237,800 acres (22 percent less than Alternative A) would be managed as VRM Class III and the existing character of the landscape would be partially retained; and 1,400 acres (as approximately 13 percent less than Alternative A) would be managed as VRM Class IV, allowing for major modification of visual character.

Table D-66
VRM Classes compared with VRI Classes - Alternative B

ALTERNATIVE B		Visual Resource Inventory (VRI) Class - Acres			
VRM Acres		VRI Class I²	VRI Class II³	VRI Class III³	VRI Class IV³
VRM Class I	70,600 ¹	58,500	37,700	26,800	6,100
VRM Class II	72,400	0	40,100	23,100	7,200
VRM Class III	237,800	0	147,100	49,700	38,900
VRM Class IV	1,400	0	1,100	0	400

Source: BLM GIS 2023

Notes:

¹ Acres account for VRI Class I and an additional 12,100 acres of VRI Class II, III or IV not shown in the table.

² VRI Class I accounts for management decisions associated with Wilderness and WSAs that occur as part of VRI Class II, III and IV within the decision area.

³ As inventoried acres.

Under Alternative B, approximately 77,800 acres of *as inventoried* VRI Class II (34 percent of the total VRI Class II acres) would be managed as VRM Class I or II (143,000 acres) which also account for management decisions associated with wilderness and WSAs (58,500 acres) allowing for the greatest preservation of visual values. Approximately 148,200 acres of VRI Class II (66 percent of the total VRI Class II acres) would be managed as VRM Class III or IV providing for lesser preservation of visual values and the opportunity for the greatest change in the visual environment. In comparison, approximately 13,300 acres of VRI Class IV (25 percent of the total VRI Class IV acres) would be managed as VRM Class I or II which would limit the amount of change to the characteristic landscape. Areas that inventory as VRI Class IV and are managed as VRM I or II may afford opportunities for natural rehabilitation or prevent additional change to the existing landscape character. Approximately 39,300 acres of VRI Class IV would be managed as VRM Class III or IV which would allow for management activities that would permit change to the characteristic landscape and may be more appropriate based on visual value information.

There would be 135,100 acres of ROW exclusion except for existing ROWs or existing designated corridors under Alternative B (79 percent more than Alternative A) and 135,900 acres of ROW avoidance (169 percent more than Alternative A). In the remaining area, 110,800 acres would be available for ROW authorization (35 percent less than Alternative A). 70,600 acres of VRM Class I acres would be classified as ROW exclusion and 46,800 acres of VRM Class II areas. 20,800 acres of VRM Class II would be classified as ROW avoidance with zero acres of VRM Class I. Alternative B would have the greatest amount of ROW avoidance and exclusion areas, resulting in the least potential for adverse effects on visual quality and character. General impacts from ROW management are discussed under *Effects Common to All Alternatives*.

Under Alternative B, 187,800 acres would be managed as closed to mineral leasing (206 percent more than Alternative A). In addition, 33,100 acres would be open to mineral leasing, subject to no surface occupancy stipulations (72 percent more than Alternative A); 161,300 acres would be open to mineral leasing only, subject to standard terms and conditions (47 percent less than Alternative A).

Alternative B would include 175,500 surface acres managed as open to mineral materials development (52 percent less than Alternative A); and 206,700 acres of land would be managed as closed to mineral materials development (87 percent more than Alternative A).

Under Alternative B, 322,200 acres would be managed as open to locatable mineral entry (the same as Alternative A); 60,000 acres are withdrawn from mineral entry (the same as Alternative A); and 104,700 acres would be recommended for withdrawal from locatable mineral entry. This compares with 0 acres recommended for withdrawal from locatable mineral entry under Alternative A. General impacts from mineral development for Alternative B are the same as those described under *Effects Common to All Alternatives*.

190 acres would be open to OHV travel (the same as Alternative A), and approximately 308,400 acres would limit OHV travel to existing and designated routes (less than 5 percent less than Alternative A). Approximately 73,600 acres would be closed to OHV travel (24 percent more than Alternative A). Mineral development trends over the past 20 years show little to moderate increases in mineral development activities, however the actual extent of future activities under Alternative B is unknown. General impacts from OHV management for Alternative B are the same as those described under *Effects Common to All Alternatives*.

Alternative B would manage wilderness areas and WSAs as VRM Class I (the same as Alternative A), which would protect the scenic quality and sensitive landscapes of those areas. Alternative B would manage five wilderness areas and four WSA, totaling 58,490 acres and under the same VRM classes as Alternative A. Under Alternative B, WSR corridors, National Historic Trails, and lands with wilderness characteristics managed as a priority would be managed as VRM Class II. Fourteen ACECs totaling 38,700 acres (820 percent more than Alternative A), would be managed as VRM Class II, allowing for a low level of change. However, 20 ACECs, along with certain WSR corridors and all SRMAs and ERMAs, would be managed as VRM Class III. Communication sites, utility corridors, Washington Mine, and Iron Mountain target-shooting area would be VRM Class IV. General impacts from designation of wilderness and WSAs are discussed under *Effects Common to All Alternatives*. The Class VRM III would partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic

landscape. VRM Class IV would provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements. As with all alternatives, the scenic values of the 117 eligible WSR segments (totaling 201.7 miles) would be protected under Alternative B since actions that would impair their ORVs would be prohibited (the same as Alternative A). This is especially true for the segments that have a scenic ORV. Along stream segments eligible or suitable for inclusion in the NWSRS that have a scenic ORV, the BLM would not permit any actions that would have an adverse effect on the visual quality of the segment. Alternative B would manage the Upper Klamath River as suitable for inclusion in the NWSRS. This alternative would manage all eligible WSR segments as suitable for inclusion in the NWSRS. Similar to Alternatives C and D, this alternative would manage both eligible and suitable segments with WSR scenic values as VRM Class II and would include additional measures to protect identified visual qualities. General impacts from WSR management are discussed under *Effects Common to All Alternatives*.

Alternative B would provide more prescriptive measures for wildland fire management than the other alternatives and would result in the greatest resource protection of visual resources. General impacts from wildland fire management are discussed under *Effects Common to All Alternatives*.

- Suppression lines would be restored to original contour and vegetation to minimize visual contrast.
- Interface Zone outcomes and actions would not be changed, even in areas where Interface Zone space and the essential connectivity corridors intersect.
- Treatments would be prioritized to protect special designations where special designations and Interface Zones conflict.
- In areas where WUI and essential connectivity corridors of high biological value intersect, modified outcomes and actions would be used to guide vegetation treatments for fuels reduction.

Alternative B contains the highest percent of VRM Classes I and II (143,00 acres) and would provide the most benefits to dark night skies (compared with Alternative A 83,600 acres). Alternative B is also the only alternative that would manage night sky resources for the NCIP area by setting management prescriptions on a site-specific basis, including prohibiting permanent outdoor lighting in VRM Class I areas, activity-level planning and NEPA review. Additionally impacts associated with Alternative B on dark night skies would be minimized through the application of BMPs from BLM Technical Note 457- Night Sky and Dark Environments: Best Management Practices for Artificial Light at Night on BLM-Managed Land (BLM 2023).

Alternative C

Under Alternative C, 58,500 acres (less than 1 percent less than Alternative A) would be managed as VRM Class I, resulting in preservation of the existing visual character of those areas. Additionally, 20,900 acres (398 percent more than Alternative A) would be managed as VRM Class II, allowing for a low level of change; 301,900 acres (approximately 5 percent less than Alternative A) would be managed as VRM Class III and the existing character of the landscape would be partially retained; and 900 acres (44 percent less than Alternative A) would be managed as VRM Class IV, allowing for significant modification of visual character (**Table D-67**).

Table D-67
VRM Classes compared with VRI Classes - Alternative C

ALTERNATIVE C		Visual Resource Inventory (VRI) Class -Acres			
VRM Acres		VRI Class I¹	VRI Class II²	VRI Class III²	VRI Class IV²
VRM Class I	58,500	58,500	37,400	20,200	800
VRM Class II	20,900	0	8,500	10,100	2,300
VRM Class III	301,900	0	181,400	69,300	49,100
VRM Class IV	900	0	500	0	400

Source: BLM GIS 2023

Notes:

¹ VRI Class I accounts for management decisions associated with Wilderness and WSAs that occur as part of VRI Class II, III and IV within the decision area.

² As inventoried acres.

Alternative C would manage approximately 104,400 acres of VRI Class I and II (36 percent of the total VRI Class I and II acres) as VRM Class I or II, which would allow for the greatest preservation of visual values. Approximately 181,900 acres of VRI Class II (80 percent of the total VRI Class II acres) would be managed as VRM Class III or IV, which would allow for lesser preservation of visual values and the opportunity for the greatest change in visual values. Comparatively, approximately 3,100 acres of VRI Class IV (6 percent of the total VRI Class IV acres) would be managed as VRM Class I or II which would limit the amount of change to the characteristic landscape. Areas that inventory as VRI Class IV and are managed as VRM I or II may afford opportunities for natural rehabilitation or prevent additional change to the existing landscape character. Approximately 49,500 acres of VRI Class IV would be managed as VRM Class III or IV which would allow for management activities that would allow for change to the characteristic landscape and may be more appropriate based on visual value information.

Under Alternative C, there would be 94,100 acres of ROW exclusion (47 percent more than Alternative A) except for existing ROWs or existing designated corridors and 166,400 acres of ROW avoidance (175 percent more than Alternative A). In addition, 121,300 acres would be available for ROW authorization (88 percent less than Alternative A), and 58,500 acres of VRM Class I acres would be classified as ROW exclusion and 14,500 acres of VRM Class II areas. A total of 6,400 acres of VRM Class II would be classified as ROW avoidance with zero acres of VRM Class I. General impacts from ROW management are discussed under *Effects Common to All Alternatives*. With Alternative C, 117,700 acres of land would be managed as closed to mineral leasing (92 percent more than Alternative A). In addition, 53,400 acres would be open to mineral leasing, subject to no surface occupancy stipulations (177 percent more than Alternative A); and 211,100 acres would be open to mineral leasing only, subject to standard terms and conditions (30 percent less than Alternative A).

Under Alternative C, 214,400 surface acres of land would be managed as open to mineral materials development (33 percent less than Alternative A). In addition, 167,800 acres of land would be managed as closed to mineral materials development (69 percent more than Alternative A). The nature of the impacts is the same as that described under *Effects Common to All Alternatives*.

Under Alternative C, 322,200 acres of land would be managed as open to locatable mineral entry (the same as Alternative A). In addition, 60,000 acres are withdrawn from mineral entry (the same as Alternative A), and 56,100 acres would be recommended for withdrawal from locatable mineral entry, compared with 0 acres recommended for withdrawal from locatable mineral entry under Alternative A. Although mineral development trends over the past 20 years show little to moderate increases in mineral

development activities, the extent of future activities under Alternative C is uncertain. General impacts from mineral development are the same as those described under *Effects Common to All Alternatives*.

Under Alternative C, 190 acres would be open to OHV travel (the same as Alternative A), and approximately 323,300 acres would limit OHV travel to existing and designated routes (approximately 1 percent less than Alternative A). Approximately 58,800 acres would be closed to OHV travel (approximately 1 percent less than Alternative A). These travel management values would be the same as Alternative D and the general impacts from OHV management are the same as those described under *Effects Common to All Alternatives*.

Under Alternative C, wilderness areas and WSAs would be managed as VRM Class I, which would protect the scenic quality and sensitive landscapes of the areas (the same as Alternative A). Alternative C would manage five wilderness areas and three WSAs, totaling 58,490 acres and under the same VRM classes as Alternative A. Under Alternative C, all WSR corridors and National Historic Trails, and lands with wilderness characteristics managed as a priority, would be managed as VRM Class II. Approximately 7,200 acres (48 percent less than Alternative A) in two ACECs, Gilham Butte and Eden Creek, would be managed as VRM Class II, allowing for a low level of change. With Alternative C, four additional ACECs, along with certain WSR corridors and all SRMAs and ERMAs, would be managed as VRM Class III. Communication sites, utility corridors, Washington Mine, and Iron Mountain target-shooting area would be Class IV. The Class III and Class IV VRM levels would not provide the same level of visual resource protection as the higher visual management classes. General impacts from designation of wilderness and WSAs are discussed under *Effects Common to All Alternatives*.

The scenic values of the 117 eligible WSR segments (totaling 201.7 miles) would be protected under Alternative C because actions that would impair their ORVs would be prohibited. Alternative C also would manage three new river segments (totaling 14.2 miles) as suitable for inclusion in the NWSRS. Similar to Alternatives B and D, this alternative would manage suitable segments with WSR scenic values as VRM Class II and would include additional measures to protect identified visual qualities.

Alternative C would be minimally more prescriptive for wildland fire and would result in increased visual resource protection compared with Alternative A. General impacts from wildland fire management are discussed under *Effects Common to All Alternatives*.

- As appropriate, suppression lines would be maintained as long-term strategic fire breaks.
- Treatments would be prioritized to protect Interface Zones where special designations and Interface Zones conflict.

Alternative C (79,400 acres) includes the second largest amount of VRM I and II management acreage to limit light pollution (compared with Alternative A, 63,100 acres).

Alternative D

As shown in **Table D-68**, Alternative D would include 59,000 acres (the same as Alternative A), would be managed as VRM Class I, resulting in preservation of the existing visual character of those areas. An additional 61,600 acres (86 percent more than Alternative A) would be managed as VRM Class II, allowing for a low level of change; 260,800 acres (13 percent less than Alternative A) would be managed as VRM

Table D-68
VRM Classes compared with VRI Classes- Alternative D

ALTERNATIVE D		Visual Resource Inventory (VRI) Class - Acres			
Visual Resource Management (VRM) Acres		VRI Class I²	VRI Class II³	VRI Class III³	VRI Class IV³
VRM Class I	59,000 ¹	58,500	37,700	20,500	800
VRM Class II	61,600	0	32,300	19,100	10,200
VRM Class III	260,800	0	157,500	60,000	41,200
VRM Class IV	800	0	500	0	400

Source: BLM GIS 2023

Notes:

¹ Acres account for VRI Class I and an additional 500 acres of VRI Class II, III or IV not shown in the table.

² VRI Class I accounts for management decisions associated with Wilderness and WSAs that occur as part of VRI Class II, III and IV within the decision area.

³ As inventoried acres.

Class III, potentially resulting in only partially retaining the character of those lands; and 800 acres (67 percent less than Alternative A) would be managed as VRM Class IV, potentially resulting in a high level of change in those areas.

Under Alternative D, approximately 70,000 acres of *as inventoried* VRI Class II (31 percent of the total VRI Class II acres) would be managed as VRM Class I or II, (120,600 acres), which also accounts for management decisions associated with wilderness and WSAs (58,500 acres) allowing for the greatest preservation of visual values. Approximately 158,000 acres of VRI Class II (69 percent of the total VRI Class II acres) would be managed as VRM Class III or IV allowing for lesser preservation of visual values and the opportunity for the greatest change in visual values. Comparatively, approximately 11,000 acres of VRI Class IV (21 percent of the total VRI Class IV acres) would be managed as VRM Class I or II which would limit the amount of change to the characteristic landscape. Areas that are as VRI Class IV and are managed as VRM I or II may provide opportunities for natural rehabilitation or prevent additional change to the existing landscape character. Approximately 41,600 acres of VRI Class IV would be managed as VRM Class III or IV which would allow for management activities that would allow for change to the characteristic landscape and may be more appropriate based on visual value information.

Alternative D would provide 108,100 acres of ROW exclusion (60 percent more than Alternative A) except for existing ROWs or existing designated corridors and 165,200 acres of ROW avoidance (174 percent more than Alternative A). Under Alternative D, 108,600 acres would be available for ROW authorization (65 percent less than Alternative A). A total of 59,000 acres of VRM Class I acres would be classified as ROW exclusion and 22,600 acres of VRM Class II areas. 20,500 acres of VRM Class II would be classified as ROW avoidance with zero acres of VRM Class I. Alternative D would provide greater visual protections than Alternatives A and C, and less protection to the visual environment than Alternative B. General impacts from WSR management are discussed under *Effects Common to All Alternatives*.

Under Alternative D, 190 acres would be open to OHV travel (the same as Alternative A), and approximately 320,000 acres would limit OHV travel to existing and designated routes (approximately 1 percent less than Alternative A). In addition, 62,000 acres would be closed to OHV travel (5 percent more than Alternative A). These travel management values would be the same as Alternative C. General impacts from OHV management are the same as those described under *Effects Common to All Alternatives*.

Although mineral development trends over the past 20 years show little to moderate increases in mineral development activities, the extent of future activities under Alternative B is uncertain. Under Alternative D, 164,200 acres of land would be managed as closed to mineral leasing (91 percent more than Alternative A). Also, 87,900 acres would be open to mineral leasing, subject to no surface occupancy stipulations (128 percent more than Alternative A); and 130,100 acres would be open to mineral leasing only, subject to standard terms and conditions (43 percent less than Alternative A). All stipulations for fluid mineral leasing and other surface-disturbing activities would provide direct or indirect protection for visual resources. The nature of the impacts is the same as that described under *Effects Common to All Alternatives*.

Alternative D would manage 172,600 acres as open to mineral materials development (54 percent less than Alternative A), and 209,600 acres would be managed as closed to mineral materials development (88 percent more than Alternative A). The nature of the impacts on mineral materials development is the same as that described under *Effects Common to All Alternatives*.

Under Alternative D, 322,200 acres would be managed as open to locatable mineral entry (the same as Alternative A). In addition, 60,000 acres are withdrawn from mineral entry (the same as Alternative A), and 86,600 acres would be recommended for withdrawal from locatable mineral entry, compared with 0 acres recommended for withdrawal from locatable mineral entry under Alternative A. General impacts from mineral development are the same as those described under *Effects Common to All Alternatives*.

Wilderness areas and WSAs would be managed as VRM Class I (the same as Alternative A), which would protect the scenic quality and sensitive landscapes of the areas. Alternative D would manage five wilderness areas and four WSAs, totaling 58,490 acres and under the same VRM classes as Alternative A. Similar to Alternative C, under Alternative D, all WSR corridors and National Historic Trails, and lands with wilderness characteristics managed as a priority, would be managed as VRM Class II. Seven ACECs totaling 27,230 acres (48 percent less than Alternative A), Deer Creek, Beegum Creek Gorge, Sheep Rock, North Fork Eel, South Spit, Ma-le'l Dunes, and Grass Valley Creek, would be managed as VRM Class II, allowing for a low level of change. Twenty other ACECs, along with certain WSR corridors and all SRMAs and ERMA, would be managed as Class III. Communication sites, utility corridors, Washington Mine, and Iron Mountain target-shooting area would be Class IV. The Class III and Class IV VRM levels would allow degradation of visual quality in those areas. General impacts from designation of wilderness and WSAs are discussed under *Effects Common to All Alternatives*.

The scenic values of the 117 eligible WSR segments (totaling 201.7 miles) would be protected under Alternative D because actions that would impair their ORVs would be prohibited. Alternative D also would manage 56 new river segments (totaling 135.2 miles) as suitable for inclusion in the NWSRS. Similar to Alternatives B and C, this alternative would manage suitable segments with WSR scenic values as VRM Class II and would include additional measures to protect identified visual qualities. General impacts from WSR management are discussed under *Effects Common to All Alternatives*.

Alternative D management actions for wildland fire would provide a moderate amount of visual resource protection. These actions would provide more preservation of scenic values than Alternative A, but would lack of a more comprehensive post-fire strategy would result in less visual resource protection than Alternative B. General impacts from wildland fire management are discussed under *Effects Common to All Alternatives*.

- Manage Interface Zones (WUI and non-WUI), as described in *Management Common to All*, even if it intersects with the essential connectivity corridor.
- Determination of treatments would be on a case-by-case basis in areas of overlap where WUI and special designations conflict. Where Interface Zone and special designations overlap, Interface Zone goals and objectives would take priority
- During implementation-level planning, modify treatments on a case-by-case basis in WUI and non-WUI to meet resource objectives in essential connectivity corridors of high biological value.
- As appropriate, suppression lines would be maintained as long-term strategic fire breaks.

General impacts from wildland fire management are discussed under *Effects Common to All Alternatives*.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions and conditions in this area that have affected, and would likely continue to affect, visual resources are land use authorizations and access, recreation, livestock grazing, vegetation management, and energy and mineral development.

Naturally occurring events, such as some wildfires, could also alter the landscape with effects on visual resources in the planning area. Many of these actions and events have altered vegetation and landforms and have introduced artificial elements into the natural landscape. Some past developments are being reclaimed, and visual impacts are lessening, but not as fast as new developments are happening.

The BLM's VRI, completed in 2015, provides the BLM with a means for determining visual values and is an indicator of past and present actions that may have influenced visual change based on the type of action and location within VRM Classes as managed under Alternative A. In the VRI, cultural modifications are typically human-caused change in landform, water, or vegetation or the addition of a structure that creates a visual contrast in the basic elements (form, line, color, texture) of the naturalistic character of a landscape.

Any reasonably foreseeable future actions or projects that would change the characteristic landscape can affect the scenic quality. For example, proposed surface-disturbing projects, such as energy and mineral development, vegetation management and treatments, and transmission lines, can introduce cultural modifications or change the landform, vegetation, color, and adjacent scenery. Depending on the location and scale of the activities and modifications comparing the basic design principles of form, line, color, and texture, the scenic quality of an area could be degraded if BMPs and/or mitigation measures to reduce contrast through the contrast rating process are not applied.

Urbanization is expected to continue to result in residential and commercial development expanding incrementally closer to BLM-administered lands. Development of lands in the vicinity could also increase demand for energy resources, building materials, utilities, and minerals, all of which could spur development that would affect visual resources. These demands generally involve surface disturbances.

Under Alternative A, the BLM would continue to manage visual resources on all BLM-administered lands in the planning area on a case-by-case basis. When combined with past, present, and reasonably foreseeable future actions or projects described above, Alternative C would have the greatest adverse influence on cumulative impacts on visual resources. This is because 302,800 acres would be managed under VRM Class III and Class IV objectives that could allow activities that have an increased potential to

change the scenic quality over time. Alternatives A and D would manage 298,600 acres and 261,600 acres, respectively, under VRM Class III and Class IV objectives. Alternative B would have the least adverse cumulative effect on visual resources; the BLM would manage 239,200 acres under VRM Class III and Class IV objectives, allowing fewer activities with potential to change the scenic quality over time.

D.2.12 Cave and Karst Resources

Issue Statements

- How would the alternatives affect cave and karst resources?

Affected Environment

Background

Features that are considered caves for the purposes of this document include any naturally occurring void, cavity, recess, or system of interconnected passages beneath the surface of the earth or within a cliff or ledge that is large enough to permit a person to enter, whether the entrance is excavated or naturally formed. Such terms include any natural pit, sinkhole, or other feature that is an extension of a cave entrance, or which is an integral part of the cave (BLM 2008c). Included in this definition are:

- Features commonly referred to as rock shelters, in which the size of the opening is larger than the interior dimensions of the feature
- Sea or littoral caves, which are formed primarily from erosion caused by waves
- Lava tubes

Karst is a landform developed in soluble rock types such as limestone or gypsum. Typical features and characteristics may include, but are not limited to, few surface streams where most of the drainage is underground, sinking streams, dolines (sinkholes), resurgences, and caves (BLM 2008c).

There are over 50 caves (almost all rock shelters) recorded within the archaeological database for the Redding FO and a handful of others for the Arcata FO area. In some cases, rock-shelters with Native American Indian remains have been looted or damaged by cattle use, as in the Sheep Rock area. Rock shelters in the southern Cascades have been prime targets for looters. Pluto Cave has both historical graffiti and modern graffiti on its walls, although much of this is on Forest Service portions of the cave system. Eight rock shelters in the southern Cascade foothills of the Redding FO area have been partially excavated through permitted activities as part of cooperative or mitigation-based research. At least one rock shelter in the Arcata FO area has been partially excavated.

Field inventories and assessments for caves with other resource values have not been office priorities in the past. Caves and karst lands are not well understood, and their management requirements are often not apparent. The management of the subsurface mineral estate (split estate) is largely dependent on the appropriate management of the surface, as the two are inextricably connected. In karst lands, what happens on the surface affects the subsurface mineral estate (split estate) and vice versa. Karst topography is a minimal part of the BLM-administered lands within the Redding FO area and absent within the Arcata FO area.

The prime indicators for the presence of caves, as defined, are locations of volcanic and limestone lithology, areas of rock mass wasting, tectonism, or differential weathering of rock units where cavities can be created, and water- or wind-formed caves, such as along the littoral fringe and where less-indurated

rock units may be deformed by aeolian action. Some of these caves may be difficult to access due to cliffs, dense vegetation, rock-fall, steep walls, and narrow entrances or passageways.

Areas of relative ecological importance, as identified by the BLM, include Sheep Rock caves and shelters (Siskiyou County), Bend ACEC shelters and caves, Deer Creek ACEC caves (Ishi country), Battle Creek shelters, karst caves in Interlakes, Pluto Cave, and Scott Mountain.

Regulations

In 1988, the United States Government passed the Federal Cave Resources Act of 1988 (16 USC 4301–4310) with the final rule presented in 1993 (43 CFR 37). This rule requires identification, protection, and maintenance, to the extent practical, of significant caves on lands administered by the federal government. According to the rule, “Cave means any naturally occurring void, cavity, recess, or system of interconnecting passages beneath the surface of the earth or within a cliff or ledge, and which is large enough to permit a person to enter, whether the entrance is excavated or naturally formed. Such terms include any natural pit, sinkhole, or other feature that is an extension of a cave entrance, or which is an integral part of the cave.” Furthermore, cave resources include, but are not limited to, biotic, cultural, mineralogic, palaeontologic, geologic, and hydrologic resources. Such resources occur in many parts of the Redding FO area due to geologic conditions and less so within the Arcata FO area due mainly to lithological circumstances.

The BLM 8380 Manual sets overall policy and direction for cave and karst resources. A resultant handbook (BLM 2008c) provides users with a reference for resource identification, significance nomination and designation, inventory and monitoring, planning, outreach, and other aspects of the cave and karst management program. In both the Redding and Arcata FOs, this program has been administered ad hoc, primarily tied to the cultural resources program. With the NCIP, there is an opportunity to be proactive in managing known caves and those to be discovered in the future. The rule (43 CFR 37) also states that each agency FO will retain appropriate documentation for all significant caves within its administrative boundaries, including a statement of finding signed and dated by the Authorized Officer, and the information used to make the determination. Such documentation exists, in part, for caves with cultural resource values.

Significant Cave Designation

Caves, as they are discovered or recognized from existing records, can be nominated as significant following the Federal Cave Resources Protection Act. Nominations are evaluated using the criteria for significant caves. A significant cave on federal lands shall possess one or more of the following features, characteristics, or values: (1) biota, (2) cultural, (3) geologic/mineralogic/palaeontologic, (4) hydrologic, (5) recreational, or (6) educational or scientific. The purpose of designating caves as significant is to identify those caves that contain features or resources needing protection under the Federal Cave Resources Protection Act. In many instances, the fact that a cave or karst feature fits the definition of a cave is enough to qualify it as significant. The intent of designating a cave as “significant” is: 1) to verify that the feature is indeed a cave, 2) to form the basis of an inventory for the cave, and 3) to have it entered into the BLM records. The Significant Cave Inventory Criteria can be found in 43 CFR 37.11(c).

Environmental Consequences

Land management decisions resulting in impacts on cave and karst resources can be direct, indirect, or cumulative. Because caves are distinct as opposed to regional features, impacts from various land

management decisions can be measured by counting the numbers of known caves that may be impacted. If a cave is designated as significant and is known to have specific attributes, such as cultural resources or endangered species habitat, then impacts on those resources can, likewise, be quantified on a cave-by-cave basis.

Karst is a landform that develops on specific soluble bedrock units such as limestone and gypsum (BLM 2008c). To evaluate impacts on karst resources in general, land management options can be overlaid with the appropriate geologic units to measure potential impacts in acres. The BLM has developed cave and karst probability maps based on geologic outcrop information for some portions of the country, but not for northern California.

Location information of specific known caves within the decision area is not available for review and evaluation with respect to land management activities. Therefore, evaluations of impacts based on cave locations and probability maps were not possible. Geologic outcrop information available for evaluation through GIS applications is limited in the decision area.

Outcrop areas of limestone measured in acres are available and was overlaid with the proposed land management alternatives to provide insight into the potential for impacts on cave and karst. Other geologic formation outcrop areas (e.g., basalt, dacite, and rhyolite, which may be conducive for rock-shelter formation) were reviewed for similar evaluation as limestone but were not considered reliable enough to provide meaningful potential impact information. Therefore, limestone outcrop areas were the only geologic information used to assess potential impacts. Potential impacts for unknown caves were evaluated across the entire NCIP planning area; an additional evaluation of impacts on unknown caves just within limestone outcrop areas was conducted to provide additional information.

Impacts that occur to caves likely have potential impacts on cultural and natural resources within the caves, thus, management activities that increase protection of caves and karst are assumed to increase protection of the cultural and natural resources within the caves. Therefore, when quantifying potential impacts, the impacts on specific cultural resources or specific species found in caves and karst are not separately or specifically addressed in this section.

Impacts Common to All Alternatives

Cave visitation by humans for recreational purposes has the potential for direct impacts on cave and karst resources. Direct impacts include vandalism, graffiti, disturbance of cultural resources, looting, breakage of speleothems, and introduction of contaminants to air, soil, and water. Indirect impacts include potential impacts on bat populations through the spread of WNS, and disturbance of habitat of biological resources living within caves. Disturbance or compaction of sediments may indirectly impact cave invertebrates through habitat destruction.

General recreational use of areas where caves exist has the indirect potential to impact caves through incidental discovery of caves (whether known or unknown) by recreators. When recreational users discover a cave, they then have the potential to enter and cause damage, as described above. Closure of areas to recreation can eliminate the potential of incidental cave discovery. Establishment and management of SRMAs, ERMAs, and RMZs can increase visitation within those areas and increase the potential for impacts on cave and karst resources.

Cave visitation for scientific study (cultural resources, natural resource, or climatological) has similar direct and indirect potential impacts as cave recreation, although precautions are typically exercised by the scientists conducting the studies. It is important to note that study of one type of resource might have unintentional impacts on other resources. For example, excavation of cultural resources may impact species habitats. Disturbance of bats during hibernation periods could occur. Excavation to open new passages for exploration or study could impact cultural resources by damaging intact sediments and artifacts.

Livestock grazing has the potential to directly impact caves. Livestock may enter and seek shelter within rock shelters and trample sediments and associated cultural resources and could potentially break artifacts. Closure of areas to livestock grazing would eliminate potential impacts on cave and karst resources. Livestock grazing currently occurs in volcanic cliff areas where rock shelters occur. Entrances can be fenced to prevent livestock incursions.

When restricting access to caves to visitation or livestock grazing, installation of fencing or cave gates at cave entrances has the potential to damage cultural resources by disturbing intact sediments and artifacts. If cave gates are utilized to restrict access, the gates may impact bat access if not designed and constructed specifically with bat entrance and exit in mind.

OHV use provides access to areas that might not otherwise be reached by recreational users. This increases the chances of incidental discoveries of caves (whether known or unknown) by recreators. When OHV recreational users discover a cave, they then have the potential to enter and cause damage to cultural and natural resources through vandalism, graffiti, looting, breakage of speleothems, and introduction of contaminants, including the spread of WNS. Designating OHV open areas increases the potential for incidental cave discovery and damage. Closing areas to OHV use would eliminate the potential for incidental discovery of caves by travelers.

Development of leasable, locatable, and mineral materials has the potential to impact caves through direct excavation or destruction or collapsing of cave walls by mining or drilling operations. Infrastructure that supports mineral extraction includes roads, powerlines, and pipelines. Construction of this infrastructure also has the potential to damage cave and karst resources in the same manner as mining or drilling operations. Limiting or restricting mining or drilling operations in specific areas reduces the potential to impact cave and karst resources within those areas.

Forestry management activities would have very low potential to disturb cave and karst resources. Direct damage to cave entrances could occur if trees are located at cave entrances. If the management activities disturb soils and increase erosion, sediments could be deposited in caves or within other karst features like sinkholes and solution-enlarged fractures. Limiting or prohibiting timber production or management activities and utilizing BMPs to control/limit generation of sediment can eliminate impacts on cave and karst resources (see **Appendix F**).

Coastal resources are threatened by rising sea levels; the degree of threat may vary along the coast within the planning area. For example, coastal lands surrounding Humboldt Bay are highly vulnerable to rising sea level. This condition can be exacerbated by tectonic subsidence (natural geologic lowering of the land surface), which has been measured, in particular, in the Humboldt Bay area. Conversely, steep, rocky coastal areas may be less impacted by rising sea levels.

Rises in sea level from climate change have the potential to inundate or impact sea caves. Erosion is a common facet of the dynamic coastal environment. The sea caves, beaches, dunes, and coastal headlands are subject to a variety of erosive forces from storm surges, large wave events, tsunamis, earthquakes, changes in sediment deposition patterns due to jetties and river flooding, and rising sea levels. Climate change, which could result in more violent storms and increased wave activity, may increase erosion of sea caves.

Alternative A

Under Alternative A, there are no current management objectives, decisions, or actions for cave and karst resources in any of the existing planning documents. As management designed specifically to protect cave and karst resources does not exist, potential impacts on cave and karst resources may not be specifically avoided and subsequent damages would continue to occur.

No recreational opportunities specific to any known or significant caves are managed under Alternative A. Three SRMAs (Interlakes, Samoa Dunes, and Forks of Butte Creek SRMA) would remain in place under Alternative A, totaling 40,190 acres. Approximately 19,500 acres of that area (49 percent) is within limestone outcrops, continuing the current trends of recreational use in those areas and the potential for impacting cave and karst resources, as described above under *Impacts Common to All Alternatives*. No RMZs are managed under Alternative A.

Livestock grazing would remain available on 186,900 acres, however, only 62,600 acres are managed as active grazing allotments. Of these, 5,700 acres (3 percent) are within limestone outcrops, which would impact cave and karst resources in those areas as described above under *Impacts Common to All Alternatives*. The BLM anticipates that only a portion of the available acres would continue to be managed as grazing allotments under Alternative A and that these acres would remain consistent over the life of the RMP. Therefore, potential impacts to cave and karst resources from grazing could occur on less than 3 percent of limestone outcrop areas. However, under Alternative A, 195,300 acres of the decision area would be unavailable for livestock grazing. Of the areas unavailable for livestock grazing, 35,200 acres (18 percent) are within limestone outcrops, which would reduce potential impact cave and karst resources in these areas.

OHV travel would be open on 190 acres within the decision area and limited to existing and designated routes on 322,800 acres, 40,900 acres (69 percent) of which are within limestone outcrop areas, which would impact cave and karst resources in those areas as described above under *Impacts Common to All Alternatives*. However, 59,200 acres of the decision area would be closed to OHV travel, which would eliminate impacts on unknown cave and karst resources in these areas.

For locatable minerals (surface), there would be 322,200 acres (40,700 acres [13 percent] of which occur within limestone outcrop areas) open to locatable mineral entry, which would impact cave and karst resources in those areas as described above under *Impacts Common to All Alternatives*. However, 60,000 acres would be withdrawn from locatable mineral entry; 200 (less than 1 percent) of which are within limestone outcrop areas. This would eliminate impacts on unknown cave and karst resources in these areas.

For fluid and nonenergy mineral leasing (surface), 301,600 acres would be open to mineral leasing with potential surface occupancy, 40,900 acres (14 percent) of which are within limestone outcrop areas. This

activity has the potential to impact cave and karst resources, as described above *Impacts Common to All Alternatives*. A total of 61,300 acres, 200 acres (less than 1 percent) of which are within limestone outcrop areas, would be closed to mineral leasing, which would eliminate impacts on unknown cave and karst resources in these areas.

For mineral materials development (surface), 300,500 acres would be open to mineral materials development, 40,200 acres (13 percent) of which are within limestone outcrop areas, which has the potential to impact cave and karst resources. A total of 81,700 acres, 600 acres (less than 1 percent) of which are within limestone outcrop areas, would be closed to mineral materials development, which would eliminate impacts on unknown cave and karst resources in these areas.

Commercial timber harvest and forest management activities included under Alternative A have the potential to impact cave and karst resources to a very limited extent. The primary potential direct impacts on caves and karst resources would be the damage of cave entrances if trees located at cave entrances were removed. Alternative A would not include specific safeguards for cave and karst resources.

Alternative B

Management specific to cave and karst resources that would be conducted includes a number of actions: identification of caves and inventorying cultural, biological, and interpretive values; restricting access where bat populations are present and evaluating WNS occurrences; restricting livestock grazing, timber production, and mineral extraction around caves and karst areas; relocation of permitted developments; NRHP designations, when applicable; cave visitation limitation by permit or exclusion if impacts continue to occur; and species habitat management. These management actions would result in greater protection of known cave and karst resources than Alternative A, which has no such management actions.

Impacts from recreational land use on cave and karst resources would be similar to those described under Alternative A, except one SRMA and four RMZs would be managed on 45,590 acres (a 12 percent increase). About 13,300 acres of the SRMAs and RMZs would be within limestone outcrop areas (a 32 percent decrease from Alternative A). Because less limestone outcrop area would be managed as SRMAs and RMZs under Alternative B than under Alternative A, the potential for incidental discovery and damage to unknown caves and karst resources would be reduced.

Impacts from livestock grazing on cave and karst resources would be similar to those described under Alternative A, except livestock grazing would be available on 232,880 acres (a 25 percent increase from Alternative A) and unavailable on 149,400 acres (a 24 percent decrease). However, under Alternative B, 62,000 acres would be managed as grazing allotments at any given time; therefore, impacts would be limited to those areas where grazing allotments are active. This is similar to Alternative A, and therefore potential impacts on unknown cave and karst resources would be similar to those described under Alternative A. Within limestone outcrop areas, livestock grazing would be available on 21,100 acres (a 270 percent increase) and unavailable on 19,800 acres (a 44 percent decrease from Alternative A). For known and discovered caves and karst, management related to livestock grazing would include the control and, if necessary, prohibition of grazing in and around threatened caves and karst, as necessary to protect these resources, which would be more protective than Alternative A.

Impacts from OHV travel on cave and karst resources would be similar to those described under Alternative A, except OHV travel limited to existing and designated routes would be allowed on 308,500

acres (a 4 percent decrease from Alternative A) and prohibited on 73,600 acres (a 24 percent increase). The area open to OHV travel is the same as Alternative A (190 acres). Within limestone outcrop areas, 40,900 acres would be limited to existing and designated routes, which is the same as Alternative A.

The same number of acres would be open to and withdrawn from locatable mineral entry under Alternatives A and B. Therefore, impacts from locatable mineral extraction on cave and karst resources would be the same in both alternatives for unknown cave and karst resources.

Impacts from fluid and nonenergy mineral leasing on cave and karst resources would be similar to those described under Alternative A, except mineral leasing with surface occupancy would be allowed on 161,300 acres (a 47 percent decrease from Alternative A) and prohibited on 187,800 acres (a 206 percent increase). Within limestone outcrop areas, mineral leasing with surface occupancy would be allowed on 20,800 acres (a 49 percent decrease) and prohibited on 1,200 acres (a 5 times increase). Therefore, because more areas in total and within limestone outcrop areas would be closed to mineral leasing under Alternative B, potential impacts on unknown cave and karst resources would be less.

Impacts from mineral materials development on cave and karst resources would be similar to those described under Alternative A, except mineral materials development would be allowed on 176,200 acres (a 41 percent decrease from Alternative A) and prohibited on 206,00 acres (a 60 percent increase). Within limestone outcrop areas, mineral materials development would be allowed on 20,800 acres (a 48 percent decrease) and prohibited on 20,100 acres (an increase of 32.5 times). Therefore, because more areas in total and within limestone outcrop areas would be closed to mineral materials development under Alternative B, potential impacts on unknown cave and karst resources would be less.

Management for cave and karst resources related to forestry would include the restriction and, if necessary, prohibition of timber production around threatened caves and karst, as necessary, to protect these resources. Therefore, Alternative B would be more protective than Alternative A.

Alternative C

Because management specific to cave and karst resources would be the same as Alternative B, the related impacts on cave and karst resources would be the same as those described above under Alternative B.

Impacts from recreational land use on cave and karst resources would be similar to those described under Alternative A, except four SRMAs and four RMZs would be managed on 87,590 acres (a 118 percent increase). Also, 18,900 acres of the SRMAs and RMZs are within limestone outcrop areas (a 3 percent decrease). Therefore, because more areas would be managed as SRMAs and RMZs under Alternative C, the potential for incidental discovery and damage to unknown caves and karst resources would be greater.

Impacts from livestock grazing on cave and karst resources would be similar to those described under Alternative A, except livestock grazing would be available on 271,800 acres (a 45 percent increase) and unavailable on 110,400 acres (a 43 percent decrease). Under Alternative C, of the acres available for grazing, 64,500 acres would be managed as grazing allotments at any given time, therefore, impacts would be limited to those areas where grazing allotments are active. Within limestone outcrop areas, livestock grazing would be available on 21,400 acres (a 275 percent increase) and unavailable on 19,500 acres (a 45 percent decrease). Therefore, because more areas in total and within limestone outcrop areas would be managed as grazing allotments under Alternative C, potential impacts on unknown cave and karst resources would be slightly greater. For known and discovered caves and karst, management related to

livestock grazing would include the control and, if necessary, prohibition of grazing in and around threatened caves and karst to protect these resources, which would be more protective than Alternative A.

Impacts from OHV travel on cave and karst resources would be similar to those described under Alternative A, except OHV travel limited to existing and designated routes would be allowed on 323,300 acres (a 0.2 percent increase) and prohibited on 58,800 acres (a 0.7 percent decrease). The area open to OHV travel would be the same as Alternative A (190 acres). Within limestone outcrop areas, 40,900 acres would be limited to existing and designated routes, which is the same as Alternative A. Therefore, because less area would be open to OHV travel along existing and designated routes and more area would be closed to OHV travel under Alternative C, potential impacts on unknown cave and karst resources would be less.

The same number of acres would be open to and withdrawn from locatable mineral entry under Alternatives A and C. Therefore, impacts from locatable mineral extraction on cave and karst resources would be the same in both alternatives for unknown caves and karst resources.

Impacts from fluid and nonenergy mineral leasing on cave and karst resources would be similar to those described under Alternative A, except mineral leasing with surface occupancy would be allowed on 211,100 acres (a 30 percent decrease) and prohibited on 117,700 acres (a 92 percent increase). Within limestone outcrop areas, mineral leasing with surface occupancy would be allowed on 26,000 acres (a 36 percent decrease) and prohibited on 600 acres (a 2 times increase). Therefore, because more areas in total and within limestone outcrop areas would be closed to mineral leasing under Alternative C, potential impacts on unknown cave and karst resources would be less.

Impacts from mineral materials development on cave and karst resources would be similar to those described under Alternative A, except mineral materials development would be allowed on 214,400 acres (a 29 percent decrease) and prohibited on 167,800 acres (a 105 percent increase). Within limestone outcrop areas, mineral materials development would be allowed on 40,700 acres, which is the same as Alternative A. Therefore, because more areas in total would be closed to mineral materials development under Alternative C, potential impacts on unknown cave and karst resources would be less.

Management for cave and karst resources related to forestry would include the restriction and, if necessary, prohibition of timber production around threatened caves and karst to protect these resources. Therefore, Alternative C would be more protective than Alternative A.

Alternative D

Impacts from recreational land use on cave and karst resources would be similar to those described under Alternative A, except four SRMAs and seven RMZs would be managed on 86,990 acres (a 116 percent increase). Also, 20,000 acres of the SRMAs and RMZs are within limestone outcrop areas (a 3 percent increase). Therefore, because more areas would be managed as SRMAs and RMZs under Alternative D, the potential for incidental discovery and damage to unknown cave and karst resources would be greater.

Impacts from livestock grazing on cave and karst resources would be similar to those described under Alternative A, except livestock grazing would be available on 188,600 acres (a 1 percent increase) and unavailable on 193,600 acres (a 1 percent decrease). Within limestone outcrop areas, livestock grazing would be available on 5,700 acres and unavailable on 35,200 acres, which are the same as Alternative A.

Under Alternative D, 59,000 acres would be managed as grazing allotments at any given time, therefore, impacts would be limited to those areas where grazing allotments are active. Therefore, potential impacts on unknown cave and karst resources would be the same. However, for known and discovered caves and karst, management related to livestock grazing would include the control and, if necessary, prohibition of grazing in and around threatened caves and karst to protect these resources, which would be more protective than Alternative A.

Impacts from OHV travel on cave and karst resources would be similar to those described under Alternative A, except OHV travel limited to existing and designated routes would be allowed on 320,600 acres (a 0.7 percent decrease) and prohibited on 61,500 acres (a 4 percent increase). The area open to OHV travel would be the same as Alternative A (190 acres). Within limestone outcrop areas, 40,900 acres, OHV travel would be limited to existing and designated routes, which is the same as Alternative A.

The same number of acres would be open to and withdrawn from locatable mineral entry under Alternatives A and D. Therefore, impacts from locatable mineral extraction on cave and karst resources would be the same in both alternatives for unknown caves and karst resources.

Impacts from fluid and nonenergy mineral leasing on cave and karst resources would be similar to those described under Alternative A, except mineral leasing with surface occupancy would be allowed on 277,500 acres (a 5.7 percent decrease) and prohibited on 2,800 acres (a 6 time increase). Within limestone outcrop areas, mineral leasing with surface occupancy would be allowed on 20,600 acres (a 50 percent decrease) and prohibited on 900 acres (a 3.5 times increase). Therefore, because more areas in total and within limestone outcrop areas would be closed to mineral leasing under Alternative D, potential impacts on unknown cave and karst resources would be less.

Impacts from mineral materials development on cave and karst resources would be similar to those described under Alternative A, except mineral materials development would be allowed on 172,600 acres (a 43 percent decrease) and prohibited on 209,600 acres (a 156 percent increase). Within limestone outcrop areas, mineral materials development would be allowed on 40,700 acres, which is the same as Alternative A). Therefore, because more areas would be closed to mineral materials development under Alternative D, potential impacts on unknown cave and karst resources would be less.

Management for cave and karst resources related to forestry would include the restriction and, if necessary, prohibition of timber production around threatened caves and karst to protect these resources. Therefore, Alternative D would be more protective than Alternative A.

Cumulative Impacts

Recreation and visitor use levels are anticipated to increase within the planning area on BLM-administered and non-BLM-administered lands. These activities include hiking, backpacking, mountain biking, horseback riding, rock climbing, riding OHVs, hunting, fishing, panning for gold, whitewater rafting, kayaking, rowing, surfing, hang gliding, camping, sightseeing, photography, wildlife viewing, and historical site visitation. Continued development of trail systems and the linking of trails to the City of Redding's recreational areas will further increase use of BLM-administered lands. The BLM is constructing 7 miles of new motorized trails in the Chappie-Shasta OHV area. The construction of these new hiking and motorized vehicle trails and the anticipated use level increases could result in an increase in discovery of unknown cave and karst resources. The proposed alternatives would have more land designated for SRMAs, ERMAs, and RMZs

than the existing management plan. The action alternatives would implement management actions to protect cave and karst resources that would not be included under Alternative A. Therefore, the contribution from the action alternatives to cumulative impacts on cave and karst resources from increased visitation would be low.

The decision area consists of many small, isolated tracts of BLM-administered land that may or may not be suitable for livestock grazing. It is unclear if environmental factors, such as water availability and demand, will affect future trends. It is also unknown if livestock grazing on BLM-administered land will continue or change due to changes in environmental factors. More acres of the decision area would be available for livestock grazing under the action alternatives than under Alternative A. However, restricting livestock grazing within threatened cave and karst resources would occur under all the action alternatives. Therefore, there would be no contribution from the action alternatives to cumulative impacts on cave and karst resources from livestock grazing.

Leasable mineral development data shows there are no existing leases or applications for oil and gas leasing on BLM-administered land or mineral estate in the planning area, nor have there been in over 20 years. More land would be restricted from mineral leasing under the action alternatives than under Alternative A. Therefore, the contribution from the action alternatives to cumulative impacts on cave and karst resources from leasable mineral development would be low.

There has been a very low level of locatable mineral development activity within the Arcata FO portion of the planning area over the past 25 years. Within the Redding FO, exploration and mining activities have been more common; there are currently 482 active mining claims. However, most of these claims have little, if any, mineral development occurring on them. No more land would be available for locatable mineral entry under the action alternatives than under Alternative A. Because of the lack of mineral development, the contribution from the action alternatives to cumulative impacts on cave and karst resources from locatable mineral development would be low.

For mineral materials development, the 20-year trend has shown an increase in the number and size of FUPs. The BLM has authorized two FUPs in the Arcata FO. Only one is still authorized, and no sales have occurred within the last 20 years. Within the Redding FO portion of the planning area over the last 20 years, the BLM has authorized 18 FUPs, seven of which are still active. Eight of the FUPs were for reclamation fisheries restoration projects. There are several large aggregate mines on private land within the planning area. Increases in mineral materials development have the potential to cumulatively impact caves and karst. However, the sand and gravel deposits typically targeted for extraction are not usually the same units conducive to cave and karst development. The action alternatives would implement management actions to protect cave and karst resources that would not be included under Alternative A. Therefore, the contribution from the action alternatives to cumulative impacts on cave and karst resources from mineral materials development would be low.

Forestry and vegetation treatments implemented by the BLM and other agencies within the planning area, particularly by the Forest Service, that include mechanical removal and thinning of trees and vegetation are expected to increase in magnitude and frequency in the future. These activities have the potential to impact undiscovered cave and karst resources. Mechanical removal and thinning could cause direct impacts by damaging a cave entrance. At the same time, damage to caves from tree ignition may be lessened by removal of trees in front of caves. However, the development of a cave and karst management plan that would occur under all action alternatives includes the restriction and, if necessary, prohibition of timber

production around threatened caves and karst. The contribution from the action alternatives to cumulative impacts on cave and karst resources from forestry and vegetation treatments would be low.

D.3 RESOURCE USES

D.3.1 Forestry

Issue Statements

- How would the alternatives affect forest health?

Affected Environment

The lands within the planning area are diverse in nature. They consist of many different forest types that include Sierra Nevada mixed conifer, oak woodland, riparian forests, chaparral, and coastal forests (see **Map 3-16**, Forestry Classes, in **Appendix A**). BLM-administered lands exist within a landscape matrix composed of private land and other federal and state lands administered by the Forest Service, NPS, USFWS, Bureau of Indian Affairs, and California State Parks. Neighboring private timber lands are predominately owned by Sierra Pacific Industries, Humboldt Redwood Company, Mendocino Redwood Company, Green Diamond and Landvest. Wildfires have considerably altered the vegetation landscape in the planning area, resulting in substantial changes to forests and woodlands (**Map 3-17**, Wildfire Impacted Areas and Abandoned Mine Lands, in **Appendix A**). See **Section D.2.8**, Wildland Fire Management, for additional information on recent fires within the planning area.

Current Conditions

Vegetation Structural Groups within the Planning Area

Forest inventory data for the planning area are available as part of a forest inventory database. The inventory data are correlated to the Forest Service's Forest Inventory and Analysis program.⁵ Under this program, the Forest Service collects, analyzes, and reports information on the status and trends of forests.

Table D-69 summarizes lands in the planning area by vegetation structural groups. Classes are generally broad; vegetation is classified according to four major structural groups: barrens or sparsely vegetated areas, grasslands, shrublands, and forests and woodlands. Vegetation cover types across the planning area are described in more detail in **Section D.2.4**, Vegetation (also see **Map 3-2**, Vegetation Cover Types).

Table D-69
Vegetation Structural Groups within the Planning Area

Vegetation Structural Group	NCIP Planning Area (Acres)	BLM-Administered Land (Acres)	Percentage of the Planning Area
Barrens	166,400	2,700	1
Grasslands	1,799,400	20,100	5
Shrublands	1,112,800	74,500	20
Forest and woodlands	10,939,000	280,800	73
Other (water, urban areas, non-forest)	352,900	3,900	1

Source: BLM GIS 2023

⁵ More information is available at <https://www.fia.fs.fed.us/>.

Across the planning area, forestry activities occur primarily within the forest and woodlands vegetation structural group, and all 112,100 acres of LSR in the decision area are within this vegetation structural group. Of these forested areas, conifer-dominant forests and oak woodland forests are the most commonly harvested.

Conifer-Dominant Forest Resources

Within the conifer-dominant forest, commercial forest are areas that may be able to sustain a commercial harvest (removal of trees greater than 8 inches DBH; DBH is defined as the diameter at breast height, or 4.5 feet from the ground level on the uphill side of the tree), while the noncommercial forest may need precommercial thinning (removal of trees less than 8 inches DBH).

The coniferous commercial species present within the conifer-dominant forest are sugar pine (*Pinus lambertiana*), ponderosa pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii*), incense-cedar (*Calocedrus decurrens*), coast redwood (*Sequoia sempervirens*), white fir (*Abies concolor*), Port Orford cedar (*Chamaecyparis lawsoniana*), and red fir (*Abies magnifica*).

Oak Woodland and Non-Merchantable Timber Resources

Oak woodland and areas with non-merchantable conifer species is a common forest type in the planning area. Active management has occurred, including both commercial and non-commercial harvest. These activities include but are not limited to fuels reduction, removal of encroaching conifers, firewood cutting, and/or pruning hardwoods to dominant stem post fire. Work has occurred in conifer-dominated forests to restore some forest openings, and thinning has occurred to focus on restoration of hardwood species; however, in the oak woodland forest type that is dominant in the planning area, little has been done. While oak woodland forests are the dominant type in the decision area, conifer-dominant forests are the type with the most potential for commercial harvest.

Trends

Declining Forest Health

A healthy forest is resilient to natural disturbances such as wildfire, insect infestations, and disease outbreaks. Most of the forests in the planning area show one or more indicators of poor health, including too many small-diameter trees, small crown ratios, moderate to high fuel accumulations, limited herbaceous production, and increased insect and pathogen activity. Overall, unmanaged forests and woodlands are in decline in the planning area.

Insects and disease are native drivers of disturbance that can elevate stand-scale mortality above typical background mortality rates associated with competition and stand development. Endemic disease and mortality are expected in forests with high ecological integrity. However, climate change and other stressors, including drought, may interact with insects and disease, resulting in uncharacteristic levels of tree mortality.

Native insects and pathogen activity are expected to increase as trees experience more stress associated with climate change and drought conditions; however, the effects are likely to be variable and differ geographically as well as among species (Chmura et al. 2011; Kolb et al. 2016; Sturrock et al. 2011). In addition to affecting host species, climate change will also affect population dynamics and geographic distributions of pathogen and insect species. Pathogen activity is likely to increase in areas where pathogens typically infect drought-stressed host species, while the effects of climate change on pathogens that

proliferate under moist conditions may be more variable and difficult to predict (Sturrock et al. 2011). Warmer winters and hotter droughts are expected to enable insects to move into previously unsuitable habitats (Bentz et al. 2010).

Other native pathogens affecting vegetation in the region are laminated root rot (*Phellinus sulphurascens*; formerly *P. weirii*), which affects Douglas-fir, true firs (*Abies* spp.), and mountain hemlock (*Tsuga mertensiana*). Armillaria (*Armillaria ostoyae*) affects Douglas-fir, hemlocks, pines, and other species. Annosus root disease (*Heterobasidion annosum*) affects true firs, pines, hemlocks, and other species. Black stain root disease (*Leptographium wageneri*) affects Douglas-fir and ponderosa pine. Several other types of pathogens are also present, including rusts (*Cronartium* spp.) and mistletoes (*Arceuthobium* spp. and *Phoradenron* spp.).

Several species of insects, including bark beetles and defoliators, are also native to the planning area. Insects are more prevalent in drier vegetation zones. Mountain pine beetle (*Dendroctonus ponderosae*) has the potential to cause extensive mortality in lodgepole pine and also affect other species of pines, including ponderosa pine, sugar pine, and western white pine (*Pinus monticola*). Defoliating insects are also common; though they often do not result in mortality, they may reduce growth and make trees more susceptible to other insect infestations. Several species of pine are susceptible to outbreaks of pandora moth (*Coloradia pandora*), and ponderosa pine is also susceptible to pine butterfly (*Neophasia menapia*). Douglas-fir is also susceptible to Douglas-fir beetle (*Dendroctonus pseudotsugae*), especially after blowdown from wind events.

Nonnative, invasive plants, insects; and disease can have economic and ecological effects on forests (Lovett et al. 2016). One issue facing forests within the planning area is SOD caused by the pathogen *Phytophthora ramorum*. Sudden oak death is of particular concern because it has caused extensive mortality of tanoak, coastal live oak, California black oak, and several other species of oaks in coastal forests of Northern California and Southern Oregon.

Meentemeyer et al. (2004) presents a model for predicting the spread and establishment of SOD in plant communities in California. The California Oak Mortality Task Force is already using this model to target early detection monitoring and predict oak and tanoak mortality. Based on the combined effects of spatial variability in climate (that is, 30-year monthly averages [1961–1990]), and host vegetation (using the USDA CALVEG dataset) for each month of the pathogen's general reproductive season (December–May), the model predicts the risk of continued spread and establishment. The five predictor variables are a host species index and four temperature and moisture variables (that is, precipitation, relative humidity, and minimum and maximum temperature). This model is used for lands within the planning area to help manage and identify at-risk lands. **Table D-70** displays the acreages at risk for SOD on the BLM-administered lands in the planning area, most of the higher-risk areas are in the Arcata FO and in the larger planning area. **Map 3-3** in **Appendix A** depicts current SOD mortality locations and the areas where SOD may spread. Warmer and wetter winters intensify the risk of infection. The area affected by SOD is predicted to increase tenfold by the 2030s under projected warmer and wetter conditions (Meentemeyer et al. 2011).

The invasive pathogen white pine blister rust (*Cronartium ribicola*) is a major threat to both western white pine and sugar pine (Goheen and Goheen 2014). Port Orford cedar is susceptible to a lethal, nonnative root pathogen (*Phytophthora lateralis*) that can be spread over long distances via organic matter carried on boots, vehicles, and animal hooves as well as by water (Jules et al. 2002).

Table D-70
Acres at Risk for Sudden Oak Death

Sudden Oak Death Risk	Planning Area (acres and percent)	Arcata Field Office (acres and percent)	Redding Field Office (acres and percent)
Very High	81,100 (<1)	1,200 (<1)	—
High	1,156,600 (8)	30,100 (23)	—
Moderate	1,554,600 (11)	28,900 (22)	13,600 (5)
Low	6,193,500 (43)	60,300 (45)	173,200 (68)
Very Low	5,471,400 (38)	12,900 (10)	67,600 (27)

Source: BLM GIS 2023

Note: Acres are rounded to the nearest 100.

Past Management

The current conditions of lands within the decision area are affected by past management trends, including on BLM-administered lands that were formerly under different ownership, and lands within the planning area adjacent to BLM-administered lands where activities such as clear cutting, or the removal of all trees in an area, have influenced forest health and the trajectory of forest succession.

Forestry Projects

Forestry projects are important to the condition of forests on BLM administered lands. **Table D-71** details forestry projects that occurred in 2011–2020 in the portion of the planning area administered by the Redding and Arcata FOs. Past treatment objectives varied. In general, treatments have been designed to reduce hazardous fuels, reduce the chances of a stand-replacing wildfire, increase forest health, promote restoration of late-succession forest characteristics, restore native grasslands, and reduce conifer encroachment in prairie habitat. Restoration treatments have also yielded commercial timber and alternative forest products such as biomass or firewood.

Table D-71
Forestry Projects Occurring within the Planning Area 2011–2020

Year	Field Office	Sale Name	Acres Treated	Firewood Removed (Cords)	Biomass Offered (Green Tons)	Biomass Removed (Green Tons)	MBF Removed (Thousand Board Feet)	Type of Treatment
2011	Arcata	Dingman Ridge Precommercial Thin	101	—	—	—	—	Precommercial thinning
2011	Arcata	Lacks Creek Oak Woodland Restoration	12	—	—	—	—	Oak woodland restoration
2011	Arcata	Faulkner Prairie	9	—	—	—	—	Restoration harvest
2011	Redding	Union Hill Dead Pine Removal	5	20	—	—	—	Salvage

Year	Field Office	Sale Name	Acres Treated	Firewood Removed (Cords)	Biomass Offered (Green Tons)	Biomass Removed (Green Tons)	MBF Removed (Thousand Board Feet)	Type of Treatment
2011	Redding	Mining District (Weaverville Community Forest Stewardship)	135	—	—	200	—	Commercial thin
2011	Redding	Hoadley Biomass	3	—	—	100	—	Cull decks sold
2011	Redding	Jennings Ridge	62	—	—	670	440	Forest health thin
2011	Redding	Bureau of Reclamation County Line	14		—	50	29	Salvage
2011	Redding	Jennings Ridge Plantation Thinning	20	—	—	—	—	Hand cut and pile
2011	Redding	Interlakes Sale	201		—	1,000	555	Commercial thin
2011	Redding	Washington Mine Free Use	1	3	—	—	—	Trees for mining timbers
2011	Redding	Southfork Mountain Salvage	20	240	—	—	—	Salvage
2011	Redding	Turnpike	77	—	—	—	290	Forest health thin
2011	Redding	Goose Ranch	23	—	—	350	—	Biomass
2011	Redding	Rattlesnake Fire	13	—	—	—	100	Salvage
2012	Arcata	Lacks Thin Pile and Slash	8	—	—	—	—	Hand cut and pile
2012	Arcata	Lacks Creek Thin Pile and Slash	101	—	—	—	—	Hardwood thinning
2012	Redding	Highland Ridge VI	66	20	434	400	140	Commercial thin
2012	Redding	Indian Creek	44	—	—	—	102	Commercial thin
2012	Redding	Butte Thin	133	—	1,883	1,200	1,275	Forest health thin
2012	Redding	Hoadley Commercial Firewood	3	30	—			Cull decks sold
2012	Redding	Bureau of Reclamation Steiner Flat Sale	25	—	—	100	15	Commercial thin
2012	Redding	Bohemotash Thin	90	—	—	—	—	Hand cut and pile
2013	Arcata	Beaver Ridge Handpile	25	—	—	—	191	Oak woodland restoration

Year	Field Office	Sale Name	Acres Treated	Firewood Removed (Cords)	Biomass Offered (Green Tons)	Biomass Removed (Green Tons)	MBF Removed (Thousand Board Feet)	Type of Treatment
2013	Arcata	Pine Ridge Firewood Piling	48	—	—	—	—	Hardwood thinning
2013	Arcata	Stormy Saddle Oak Woodland Restoration	37	—	—	—	—	Oak woodland restoration
2013	Redding	Flat Creek II	109	—	—	872	—	Biomass
2013	Redding	Jennings Ridge II	62	—	—	670	—	Biomass
2014	Arcata	Beaver Ridge	50	—	—	—	191	Restoration harvest
2014	Arcata	Pine Ridge Hardwood Thin	58	—	—	—	—	Hardwood thinning
2014	Arcata	Lacks Creek Tan Oak Sprout Control	28	—	—	—	—	Hardwood thinning
2014	Arcata	Lake Mountain Precommercial Thin	60	—	—	—	—	Precommercial thinning
2014	Arcata	Lacks Creek Sudden Oak Death Mitigation Unit A	142	—	—	—	—	Hardwood thinning
2014	Redding	Caltrans Buckhorn Capstone Harvest	12	100	—	424	68	ROW clearing
2014	Redding	Cambelville II	114	—	1,200	1,200	1,680	Forest health thin
2014	Redding	SPI Bully Fire Salvage ROW	3	14	24	—	17	Commercial thin
2015	Redding	Caltrans Emergency	2	41	—	—	10	ROW clearing
2015	Redding	Caltrans Buckhorn Slide Harvest	2	7	12	—	17	ROW clearing
2015	Redding	Green Cherry	11	—	—	—	15	Commercial thin
2016	Arcata	Lacks Creek sudden oak death Unit B	156	—	—	—	—	Hardwood thinning

Year	Field Office	Sale Name	Acres Treated	Firewood Removed (Cords)	Biomass Offered (Green Tons)	Biomass Removed (Green Tons)	MBF Removed (Thousand Board Feet)	Type of Treatment
2016	Arcata	Prosper Ridge Mattole Restoration Council Agreement	40	—	—	—	—	Prairie restoration
2016	Redding	Baker Cypress ROW	6	—	—	—	26	ROW clearing
2016	Redding	Brown's Fire Bulk Firewood	1	50	—	—	—	Salvage
2017	Arcata	Lacks Creek sudden oak death Unit C	41	—	—	—	—	Hardwood thinning
2017	Arcata	Lacks Creek Trailhead Thin & Tanoak Sprout Removal	32	—	—	—	—	Hardwood thinning
2017	Redding	GVC Mainline Thin	64	—	—	—	452	Thinning
2018	Arcata	King Peak Road	65	—	—	—	—	Shaded fuel break
2018	Arcata	Lacks Creek Pine Ridge Thinning	100	—	—	—	—	Hardwood thinning
2019	Arcata	Lacks Creek University of California Cooperative Extension	184	—	—	—	—	Forest health thinning
2019	Redding	Hoadley Peak Salvage	122	—	2,202	—	1,220	Salvage
2020	Arcata	Gilham Butte	81	20	—	—	—	Forest health thinning
2020	Arcata	Lacks Creek Landscape Restoration	438	—	17,670	—	—	Forest health thinning
2020	Arcata	Alicia Pass Mastication	60	—	—	—	—	Forest health thinning
2020	Redding	Eastside Salvage Negotiated Biomass	0	—	10,000	—	—	None
2020	Redding	Dean Road Salvage Negotiated Sale	9	—	700	—	55	Salvage
2020	Redding	Camp Fire Salvage	197	—	9,300	—	1,883	Regeneration
—	—	Totals	3,841	579	43,425	7,036	8,109	—

Source: BLM 2021a

Many types of forestry projects have been undertaken in the last decade, including various types of thinning (that is, the removal of only some trees from the forest), salvage, restoration, and ROW clearing. Precommercial thinning focuses on trees too small to be made into lumber. In commercial treatments, trees large enough to be made into boards are removed. Timber salvage occurs where disturbances such as wildfire or windstorm damage create the need for trees to be removed and an opportunity for removal of forest products such as lumber, firewood, or biomass. The goals of forest restoration projects are biodiversity recovery and environmental protection. While effective on a local scale, past treatments are typically not sufficient to meet the pace and scale of current ecological needs in the planning area.

Timber Harvest

Timber harvest takes place across the planning area, including on BLM-administered lands. Of the 382,200 acres of BLM administered surface land in the planning area, on average 384 acres (0.1 percent of the decision area) were treated each year by forestry projects from 2011-2020. The average annual timber harvest in the planning area from 2017 through 2020 was approximately 983,298 thousand board feet (BF) per year (UMBBER 2023). The average annual amount of timber harvested from BLM-administered lands in the planning area (only 3 percent of the total planning area) from 2017 through 2020 was approximately 901 MBF per year, representing an average of 0.1 percent of the overall timber harvest in the planning area (BLM GIS 2023, UMBBER 2023). The quantity of acreage treated and the relatively low number of board feet removed relative to the rest of the planning area is a reflection of the fact that BLM-administered land makes up only a small part of the planning area, and not all BLM lands in the planning area are suitable for timber harvest.

Special Forest Products

Special forest products (SFPs) is a term used to describe non-industrial timber and non-timber vegetative material, such as mushrooms, seeds, berries, greenery, biomass, and fuelwood. SFPs are not calculated in the typical board foot (a piece of wood measuring 12 inches by 12 inches by 1 inch) style of measurement. SFPs may be harvested on BLM-administered lands for recreation, personal use, or income.

Biomass also plays an important role in the SFP portfolio of the planning area. Biomass can be used for the development of wood pellets, which can be used as a source of heat, for power, and for soil amendments (biomass can be turned into biochar, which is an effective soil amendment). River restoration projects are also using biomass material to help better mimic natural stream large woody debris conditions.

Other SFPs are part of the portfolio of forest products for which permits are issued in the planning area; these SFPs include, but are not limited to manzanita burls and branches, walnuts, pine nuts, mushrooms, boughs, wildings, and Christmas trees. **Table D-72** lists SFP sales within the planning area from 2016 to 2020.

Table D-72
Special Forest Product (SFP) Sales for the Planning Area 2016–2020

Field Office	Category	FY1 2016 Received	FY 2016 Permits	FY 2017 Received	FY 2017 Permits	FY 2018 Received	FY 2018 Permits	FY 2019 Received	FY 2019 Permits	FY 2020 Received	FY 2020 Permits
Arcata	Floral and Greenery	\$0	0	\$0	0	\$20	1	\$20	1	\$0	0
Arcata	Mushrooms—Fungi	\$870	36	\$475	19	\$150	7	\$0	0	\$0	0
Arcata	Native Seed—Misc.	\$0	0	\$712	1	\$0	0	\$60	1	\$0	0
Arcata	Seed and Seed Cones	\$0	0	\$0	0	\$0	0	\$661	1	\$0	0
Arcata	Transplants	\$0	0	\$0	0	\$0	0	\$120	1	\$0	0
Arcata	Wood Products	\$82,150	96	\$1,960	93	\$2,300	110	\$820	40	\$870	35
Arcata	Total	\$3,020	132	\$3,147	113	\$2,470	118	\$1,680	44	\$870	35
Redding	Boughs—Coniferous	\$0	0	\$0	0	\$0	0	\$100	1	\$0	0
Redding	Burls and Miscellaneous	\$160	2	\$0	0	\$109.99	4	\$39	2	\$0	0
Redding	Edibles and Medicinals	\$0	0	\$9,944.00	4	\$13,328	1	\$0	0	\$10,000	1
Redding	Floral and Greenery	\$0	0	\$55	2	\$0	0	\$0	0	\$200	2
Redding	Native Seed—Misc.	\$0	0	\$100	1	\$0	0	\$0	0	\$110	1
Redding	Seed and Seed Cones	\$0	0	\$0	0	\$0	0	\$60	2	\$0	0
Redding	Wood—Biomass	\$0	0	.05	1	\$0	0	\$0	0	\$11	3
Redding	Wood—Fuelwood	\$3,041	11	\$5,4789	62	\$869	25	\$1,983	64	\$330.00	16
Redding	Wood—Other (MBF)	\$0	0	\$0	0	\$0	0	\$10,226	5	\$2,644	4
Redding	Total	\$3,201	13	\$15,578	70	\$14,307	30	\$12,408	74	\$13,295	27

Source: BLM GIS 2023

¹ FY stands for Fiscal Year

Forestry Agreements and Partnerships

Stewardship projects have played a role in the past management of the planning area lands. These stewardship projects are defined by BLM Manual 5920 as “a tool that allows for the value of timber and other vegetative products removed to offset the cost of service work within a single contract to achieve land management goals” (BLM 2022c). Stewardship agreements are used to assist the BLM in the management of its public lands through partnerships with local entities. These mechanisms also assist the BLM with increased scoping of project-level decision-making and enable the exchange of goods (timber, firewood, and biomass) for services on public lands. These mechanisms allow money to be used from timber receipts to improve public lands through the activities listed above. **Table D-73** describes the six stewardship agreements that the Arcata and Redding FOs entered into from 2011 to 2020.

Table D-73
Stewardship Agreements in the Planning Area 2011–2020

Stewardship Agreement	Year Entered	Year Expired/Expires	Acres	Partner	MBF Removed
Weaverville Community Forest	2005	2015	1,000	Trinity County Resource Conservation District	1,700
Interlakes	2009	2019	54,000	Western Shasta Resource Conservation District	775
Lacks Creek Restoration	2010	2020	8,673	Hoopa Valley Tribe	0
Grass Valley Creek Watershed	2012	2022	16,000	Trinity County Resource Conservation District	0
Weaverville Community Forest II	2015	2025	3,000	Trinity County Resource Conservation District	0

Source: BLM GIS 2023

The BLM engages in other non-stewardship forestry agreements and contracts with partner organizations; these agreements and contracts support reforestation, fuels reductions, watershed stabilization, and noxious weed treatments. **Table D-74** describes non-stewardship forestry agreements and partnerships in the planning area entered into from 2014 to 2020.

Through forestry agreements and partnerships like those described above, the close proximity and cultural connection of BLM-administered forest lands to Indigenous communities in the planning area (see **Section D.5.3**, Tribal Interests) offers an opportunity to integrate local community members, perspectives, and knowledge into the management of forests. Indigenous communities in the region have a history of silvicultural practices focused on different objectives; the most well-documented practice is cultural burning or prescribed burning (Long et al. 2016; Pullen 1996). The goals and objectives relating to forestry in the NCIP (**Table B-1** in **Appendix B**, Forestry) can benefit from incorporating these communities

Table D-74
Non-Stewardship Forestry Agreements and Partnerships in the Planning Area 2014–2020

Agreement or Contract Name	Year Entered	Year Expired/Expires	Acres	Partner	Project Focus
Sudden Oak Death Detection	2014	N/A	400	University of California Cooperative Extension	Monitoring
Coastal Prairie Encroachment	2016	N/A	40	Mattole Restoration Council	Restoration
Lacks Creek Greenhouse Gas Reduction and Monitoring	2019	N/A	200	University of California Cooperative Extension	Forest health and fuels reduction and monitoring
Good Neighbor Authority Service Agreement—Carr Fire Watershed Stabilization and Weed Treatments	2019	2022	20	Western Shasta Resource Conservation District	Watershed stabilization and weed treatments
California Camp Fire Climate Resilient Reforestation Project	2019	2025	2,000	American Forests	Reforestation
Gilham Butte	2020	N/A	81	Mattole Restoration Council and Save the Redwoods League	Forest health and fuels reduction
Good Neighbor Authority Service Agreement—Lewistown Community Protection	2020	2025	250	Trinity County Resource Conservation District	Fuels reduction
Good Neighbor Authority Service Agreement—Post Carr Fire Trail and Cultural Site Restoration and Hazard Mitigation	2020	2025	713	Western Shasta Resource Conservation District	Fuels reduction

Source: Personal communication with Leana Weissberg, forest specialist, BLM Redding FO, on January 4, 2020

and any Traditional Ecological Knowledge they can share. Traditional Ecological Knowledge refers to the evolving knowledge acquired by Indigenous and local peoples since time immemorial through direct contact with the environment (USFWS 2011). When Tribes collaborate with the BLM and other parties on forestry activities, Tribal culture, Native and nonnative people, and the forest ecosystems can all benefit. These types of partnerships are increasingly common in the region and the planning area (for example, the 2010 Lacks Creeks Restoration stewardship agreement entered into with the Hoopa Valley Tribe [Table D-74] and the Rogue Basin Cohesive Forest Restoration Strategy [Metlen et al. 2017]).

Environmental Consequences

For this resource management plan, management direction that may alleviate or intensify impacts relating to forestry is evaluated at a programmatic level. The plan does not authorize site-specific projects or activities; therefore, there would be no direct effects from adopting the plan. Direct and indirect site- and project-specific effects will be analyzed when future projects are proposed. Although potential short-term consequences may be described, where appropriate, from implementing the programmatic approach, this evaluation focuses on longer-term indirect and cumulative effects that may occur over the life of the plan.

The BLM identified potential effects of decisions and management actions on the harvest of forest products (timber and other SFPs) and related activities, such as site preparation and reforestation, by reviewing the best available science and using qualitative and quantitative data related to impact indicators. To best reflect the scale and magnitude of these effects, the BLM used acres or miles whenever possible. The BLM also used a GIS data set and overlays of resources and resource uses to quantify effects when available.

Impacts Common to All Alternatives

Riparian Management Areas Management

Under all alternatives, the BLM would require that management actions, including those for forestry, would not retard attainment of the Northwest Forest Plan (USDA and USDI 1994) Aquatic Conservation Strategy objectives. In general, silvicultural practices in these areas—including practices to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics—would be designed to meet the Aquatic Conservation Strategy objectives. As a result, forest management activities including but not limited to, forest health treatments to promote late seral conditions and improve riparian health, would likely result in more resilient riparian forests throughout the decision area. Riparian management area widths would differ across the alternatives based on the type of aquatic feature and other factors, meaning that the size of the area that would be subject to these effects would also vary across the alternatives. Ultimately, there would not be an appreciable difference between the alternatives in the magnitude of these effects.

Wild and Scenic River Management

Under all alternatives, 52 miles of designated WSRs would continue to be managed as such. Large-scale harvest of any forest products would continue to be unlikely in these areas; this is because habitat enhancement and vegetation management projects would be allowed only where they would protect and enhance river values. This would continue to result in a decreased pace and scale of forest restoration management activities including but not limited to, decreased harvest of timber and SFPs, and less resilient forests in designated WSR segment corridors compared with other areas.

Wilderness Area Management

Under all alternatives, 50,040 acres would continue to be managed as designated wilderness. Under all alternatives these areas are subject to management with the goal of preserving wilderness character per BLM Manual 6340. Forest product removal and forestry activities would continue to be limited in these areas, as fuels treatments and restoration would continue to be implemented based on analysis using the Minimum Requirements Decision Guide. These restrictions would continue to result in a decreased pace and scale of forest restoration management activities including but not limited to, decreased harvest of timber and SFPs, and less resilient forests in designated wilderness compared with other areas. Since these effects would not differ between the alternatives, effects from designated wilderness management are not discussed further.

Wilderness Study Area Management

Under all alternatives, 8,450 acres would continue to be managed as Section 603 wilderness study areas, to preserve wilderness characteristics so as not to impair the suitability of such areas for designation by Congress as wilderness per BLM Manual 6330. Forest product removal and forestry activities would continue to be limited in these areas, as described for designated wilderness, above. These restrictions would continue to result in a decreased pace and scale of forest restoration management activities and less resilient forests compared with other areas.

Alternative A

Forestry Management

Under Alternative A, goals and objectives for resources and resource uses would continue to be based on the applicable portions of the 1992 Arcata RMP and 1993 Redding RMP, along with associated amendments. While existing management directions are often in agreement with the forestry goals and objectives set forth in the NCIP (see **Table B-1** in **Appendix B**, Forestry), these goals and objectives are often not explicit or as well developed, and guidance is not always consistent across existing management plans.

Under Alternative A, current management direction under the existing plans would remain in effect across the decision area, and the trends and forecast as described in the affected environment section would persist. Management directions concerning where activities such as vegetation treatment, prescribed burns, site preparation, timber harvest, and reforestation are prioritized or restricted would continue as they are currently. The pace of forestry activities designed to increase resilience to adverse effects from wildfire, pests, pathogens, and climate change would continue to be inadequate for the pace and scale of current ecological needs in the decision area.

Late successional reserves would continue to be managed to protect and enhance late successional forest conditions. As such, timber harvest would not be allowed inside LSRs, but thinning or other silvicultural treatments in stands up to 80 years of age could be done if these treatments would benefit late successional conditions. The pace and scale of forestry management trends in LSRs would continue as described in the affected environment. As above, this would continue to be inadequate to address current ecological needs in the decision area.

ACEC Management

Under Alternative A, 26,700 acres of LSRs would continue to be present within ACECs. ACEC management directions would vary by unit and generally restrict forestry activities, making harvest of forest products unlikely in these areas.

Wild and Scenic Rivers Management

Under Alternative A, managing 117 river segments (totaling 201.7 miles) as eligible for inclusion in the National Wild and Scenic River System would provide protection of resources in the managed corridors. These protections would restrict forestry activities in these areas as described under *Impacts Common to All Alternatives*, and result in little to no harvest of timber or SFPs in the managed corridors.

Impacts Common to All Action Alternatives

Forestry Management

Under all action alternatives, the BLM would continue to manage 78,600 acres of LSRs to protect and enhance late successional conditions in the decision area. There would be goals and objectives to enable forests in the decision area to recover from inadequate past management and respond beneficially to climate driven stresses, including wildfire—in other words, to increase the resiliency of forests. As such, under all action alternatives, the BLM would prioritize forest health and fuels treatments to increase resilience of stands from disturbance events, improve forest health and stand complexity, and consider climatic shifts when planning such management, especially in areas of mapped LSRs and ACECs that contain late successional conditions. Forestry management actions under all action alternatives would share a great deal of overlap in purpose and methods of management; however, the priorities under each alternative would differ and are examined by alternative in the sections below. Forestry management directions under all action alternatives would present the same explicit criteria on how and where firewood gathering could be permissible. This would lead to increased gathering of firewood in compliance with policy and in support of the management plan's goals, resulting in more resilient forests.

Under all action alternatives, management direction related to forestry is likely to result in more active forest management across the decision area and an increase in timber and SFP harvest throughout the decision area, compared with Alternative A.

Tribal Interests Management

Management direction under all action alternatives encourages continued use of forestry agreements and partnerships, co-stewardship, and co-management of BLM lands with Indigenous communities, which would increase the opportunities to integrate local community members, perspectives, and knowledge into the management of forests. Forestry goals and objectives would benefit from incorporating these communities and any Traditional Ecological Knowledge they can share. Compared with Alternative A, working cooperatively with Tribes to conduct appropriate vegetation and wildlife management treatments (including cultural burning) would facilitate increased forest resiliency throughout the decision area and SFP harvest in support of the management plan's goals, especially for Indigenous community gathering and use of traditional plants.

Vegetation Management

Under all the action alternatives, management would prioritize forest health and fuels treatments to protect these areas from wildfire in cases of insect and disease infestations and outbreaks resulting from

declining forest health and tree mortality. All action alternatives would implement forest health and fuels treatments that promote fire resiliency, recognizing the role that natural fire regimes historically played in protecting forest stands from catastrophic fire.

Management activities in line with the overarching goals of the management plan are detailed by vegetation cover type in **Table B-1** in **Appendix B**, Vegetation (Including Special Status Species and Invasive, Nonnative Species), including for all forest cover types. These actions are consistent across all action alternatives. Compared with Alternative A, this would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area.

Wildland Fire Management

Under all action alternatives, wildland fire management actions would emphasize community engagement and partnerships, vegetation management (including development of programmatic NEPA products to address hazardous fuel reduction needs), data collection and reporting, and supporting the achievement of multiple resource objectives. Wildland fire management actions specific to special designation areas are also detailed in **Table B-1** in **Appendix B**, Wildland Fire Management. Compared with Alternative A, this would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area.

Under all action alternatives, wildland fire management actions would be carried out according to specific direction within three fuels management zone categories (WUI, non-WUI, and interface zones) as well as post-fire treatments. The interface zone, WUI, and non-WUI would have different vegetation desired outcomes and management actions, described by vegetation cover type in the Wildland Fire Management section of **Table B-1** in **Appendix B**. Vegetation treatments for fuels management in the interface zone and WUI would be prioritized over treatments in non-WUI. Vegetation treatments would be designed to reduce fuels, mitigate wildfire risk, increase wildfire suppression effectiveness, and promote wildland fire resiliency while considering other resource values. Compared with Alternative A, this would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area. This is because such management activities could generally be used to move vegetation in the fuels management zones toward desired conditions.

Soils Management

Under all action alternatives, surface-disturbing permitted activities, including forestry management, would be required to comply with the BMPs (**Appendix F**) meant to minimize impacts on other resources. While these BMPs would limit or restrict how forestry activities are carried out, particularly around ecologically sensitive areas, they would not preclude the types of forestry activities likely to be proposed in these areas. While BMPs could complicate the design and implementation of forestry projects, implementation of BMPs would be part of forestry projects being carried out to further movement toward the desired condition of forested lands in the decision area. Overall, this would result in more resilient forests and aid in mitigating undesirable changes in the vegetation cover type. Compared with Alternative A, this would not result in changes to the pace and scale of forest restoration management activities or changes to the amount of resilient forests throughout the decision area.

Lands with Wilderness Characteristics Management

Under all action alternatives, forestry activities, including timber harvest, forest and fuels management treatments, specialty forest product collection, and fuels treatments, would be allowed within lands managed to protect wilderness characteristics as a priority over other multiple uses, provided the treatments are designed to protect the identified wilderness characteristics of the area over the long term. These areas are open to timber harvest if it can be implemented without affecting the identified wilderness characteristics. Additionally, treatments that are specifically designed to provide resource benefits, such as threatened and endangered species habitat protection, would be considered in these areas. These management directions are the same under all action alternatives; however, the acreage of proposed lands with wilderness characteristics varies and will be discussed further by alternative.

Special Designations Management

Under all action alternatives, there are differences in the total acreage and nature of special land designations, compared with Alternative A, as well as among the different action alternatives. Some special designations (that is, ACECs, Wild and Scenic Rivers, designated wilderness areas, and wilderness study areas) could potentially limit or restrict forestry activities in these areas for the protection of other resources. However, under all action alternatives, these designations are not in and of themselves likely to stop forestry projects that are supportive of the goals, objectives, or desired future conditions identified in the plan (see **Table B-1** in **Appendix B**, Forestry). Forestry activities like fuels treatments or timber sales targeted to improve forest health within special designation areas are integral to all action alternatives, as the alternatives explicitly prioritize forest health and fuels treatments in many of these areas.

Special designations management may be an obstacle to purely commercial timber harvests or other forestry activities in the decision area. Comparing the total volume of timber removed from BLM-administered lands in the planning area during recent years (**Table D-70**, Timber Harvest in the Planning area in MBF 2017–2021) with the volume of forest products removed by past forestry projects, agreements, and partnerships in the planning area (**Table D-71**, Forestry Projects Occurring within the Planning Area 2011–2020; **Table D-74**, Non-Stewardship Forestry Agreements and Partnerships in the Planning Area 2014–2020; and **Table D-73**, Stewardship Agreements in the Planning Area 2011–2020), purely commercial forestry projects are already exceedingly rare on BLM-administered lands, compared with other lands within the planning area.

Under all action alternatives, special management designations, in particular how they are managed as opposed to the exact acreage by alternative, would increase the acreage where forestry activities, such as vegetation treatments, prescribed burns, site preparation, timber harvest, and reforestation, are allowed. Under all action alternatives, these activities would be designed to result in greater movement toward the desired condition of forested lands in the decision area. Compared with Alternative A, this would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area. Where effects on forestry from special designations management would differ between the alternatives, the effects are discussed in more detail in the following sections.

ACEC Management

Under all action alternatives, forest health and fuels treatments around and in ACECs would be prioritized to protect these areas from wildfire, insect and disease infestations, and declining forest health and tree

mortality. Ground-disturbing activities would only be allowed if they are consistent with the ACECs' relevant and important values. The use of heavy equipment would require approval by the BLM Authorized Officer, and fire and fuels management would be conducted to maintain the ACEC's relevant and important values. Compared with Alternative A, this would result in more resilient forests and better mitigation of undesirable changes in the vegetation cover type as well as more acreage where forestry activities are permitted, likely leading to an increase of forest restoration management activities including but not limited to, increased harvest of timber and SFPs.

Wild and Scenic River Management

Under all action alternatives, the BLM would manage all suitable WSR segments to protect and enhance the free-flowing character and identified river values in coordination with the tentative classification and subject to prior existing rights. Effects on forestry would be similar to those described under *Impacts Common to All Alternatives*. In summary, protective restrictions for river values would result in decreased pace and scale of forest restoration management activities and less resilient forests in suitable WSR segment corridors compared with other areas.

Alternative B

Forestry Management

Under Alternative B, the main priorities emphasized regarding management of forested areas outside of LSRs would be to promote or speed the development of late-seral characteristics by increasing stand growth and decreasing density, and managing for and promoting a web of ecological benefits that support aquatic health and wildlife and botanical species. Compared with Alternative A, this would result in more complex, resilient forests. Compared with Alternative A, management to emphasize or speed the development of forests with late seral characteristics would result in increased timber and SFP harvest and likely lead to an increase of forest restoration management activities including but not limited to, increased harvest of timber and SFPs.

In LSRs, the primary goal(s) of all thinning treatments must be to maintain or protect wildlife habitat and corridors or plant habitat, which could include increasing stand heterogeneity. Mechanical treatments would be allowed only as needed to maintain or protect wildlife habitat and/or corridors or plant habitat, including promotion of stand heterogeneity. Post-treatment canopy cover would be maintained to promote late-seral characteristics and wildlife habitat. Management actions would maintain sufficient snag and downed woody debris to provide nesting, roosting, and foraging habitat for federally listed species as well as maintain complexity of habitat types within stands and across the landscape. Uniform treatment of stands would be avoided. Compared with Alternative A, these additional restrictions within LSRs would result in a decreased pace and scale of forest restoration management activities including but not limited to, decreased harvest of timber and SFPs.

Wildland Fire Management

Under Alternative B, interface zone outcomes and actions would not be changed, even in areas where the interface zone space and the essential connectivity corridors intersect. Management actions aim to restore suppression lines to the original contour and vegetation to minimize visual contrast. Where special designations and interface zones conflict, the BLM would prioritize treatments to protect special designations. In areas where the WUI and essential connectivity corridors of high biological value intersect, modified outcomes and actions would be used to guide vegetation treatments for fuels reduction. These modified outcomes and actions would aim to balance multiple resource needs while still prioritizing

wildland fire management. The pertinent modified outcomes and actions are detailed by vegetation cover type in the Wildland Fire Management section in **Table B-1** in **Appendix B**. Compared with Alternative A, this would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area.

Soils Management

Under Alternative B, pretreatment assessments for biological soil crusts (BSCs) would be required for all BLM-permitted activities. If the assessment determines the presence of these BSCs, the BLM may require mitigation to address impacts on these soils. While soil assessments and any potential mitigation could complicate the design and implementation of forestry projects compared with Alternative A, implementation of these assessments would be part of forestry actions being carried out to further movement toward the desired condition of forested lands in the decision area. This would result in a decreased pace and scale of forest restoration management activities including but not limited to, decreased harvest of timber and SFPs.

Wilderness Study Area Management

Under Alternative B, an additional 12,090 acres would be designated as Section 202 WSAs. Like the Section 603 WSAs managed under all alternatives, these areas would be subject to management with the goal of maintaining wilderness values and character per BLM Manual 6330. Forest product removal and forestry activities would become more restricted in these areas, as fuels treatments and restoration would be implemented based on analysis using the Minimum Requirements Decision Guide. These restrictions would result in a decreased pace and scale of forest restoration management activities including but not limited to, decreased harvest of timber and SFPs, and less resilient forests in these areas compared with Alternative A.

Lands with Wilderness Characteristics Management

The nature and types of impacts associated with lands managed to protect wilderness characteristics as a priority over other multiple uses under Alternative B would be the same as those described under *Impacts Common to All Action Alternatives*. Under Alternative B, 21,970 acres would be managed as such. Compared with Alternative A, this would result in a decreased pace and scale of forest restoration management activities including but not limited to, decreased harvest of timber and SFPs.

Wild and Scenic River Management

Under Alternative B, managing 117 river segments (totaling 201.7 miles) as eligible for inclusion in the NWSRS would infer protections on resources in the managed corridors.

While this is the same length of rivers as under Alternative A in these areas, permitted surface-disturbing activities that are compatible with and that fully protect identified values would be allowed within scenic and recreational river corridors; however, these activities would not be permitted on wild river corridors. In all types of river corridors, vegetation management projects would only be allowed where they can protect and enhance river values. For wild river corridors, these projects must be compatible with the area's essentially primitive condition. These limitations are noteworthy; however, under Alternative B, this would likely result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area.

ACEC Management

Under Alternative B 30,300 acres of LSRs, 12 percent more acres than Alternative A, would be present within ACECs. While this would result in more acreage under ACEC-related restrictions on forestry activities in these areas as compared with Alternative A, this would likely result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area.

Alternative C

Forestry Management

Under Alternative C, the main priorities emphasized regarding management of forested areas outside of LSRs would be to manage for wildfire resiliency as a priority in areas where public health and safety or critical infrastructure are at risk. The BLM also would manage forested lands outside of LSRs on a sustainable basis for multiple uses, including wildlife and riparian habitats, recreational needs, cultural resources, community stability, and commodity production, including merchantable timber and other forest products. Forest management outside WUI areas would still prioritize increased wildfire resiliency of stands while also prioritizing other stand conditions. Compared with Alternative A, this would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area.

in LSRs, the emphasis for management would be to improve resilience to wildfire, pests, pathogens, and climate change. Management activities could include commercial timber harvest and harvest of SFPs to ensure late successional forest remain resilient to wildfire, pests, pathogens, and climate change. Late successional forest would be managed to increase wildfire resiliency through the reduction of canopy bulk density and an increase in the height to live crown. When thinning green trees, canopy cover would be maintained for recreation and wildfire resilience, and, when necessary, for infrastructure protection. Vertical and horizontal heterogeneity would be maintained, and spatial heterogeneity, including gap creation, would be developed. Compared with Alternative A, this would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area. Under Alternative C, management activities aim to maintain, as appropriate, suppression lines as long-term strategic fire breaks. Where special designations and interface zones conflict, treatments to protect interface zones would be prioritized. Compared with Alternative A, this would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area.

Wildland Fire Management

Under Alternative C, management activities aim to maintain, as appropriate, suppression lines as long-term strategic fire breaks. Where special designations and interface zones conflict, treatments to protect interface zones would be prioritized. Compared with Alternative A, this would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area.

Soils Management

Under Alternative C, pretreatment assessments for BSCs would not be required. Any permitted surface-disturbing activities conducted within decomposed granite soils, ultramafic/serpentine soils, and BSCs

would require a stormwater management plan or need to implement appropriate BMPs. While implementation of a stormwater management plan and BMPs could complicate the design and implementation of forestry projects compared with Alternative A, implementation of these actions would be undertaken as part of forestry actions being carried out to further movement toward the desired condition of forested lands in the decision area. Compared with Alternative A, this would result in a decreased pace and scale of forest restoration management activities including but not limited to, decreased harvest of timber and SFPs.

Lands with Wilderness Characteristics Management

The nature and types of impacts associated with lands managed to protect wilderness characteristics as a priority over other multiple uses under Alternative C would be the same as those described under *Impacts Common to All Action Alternatives*. Under Alternative C, 5,840 acres would be managed as such. Compared with Alternative A, this would result in a decreased pace and scale of forest restoration management activities including but not limited to, decreased harvest of timber and SFPs.

Under Alternative C, the BLM would also manage 28,220 acres as lands managed to minimize impacts to wilderness characteristics while emphasizing other uses. In these areas, impacts on wilderness characteristics from forestry management would be considered and minimized to the extent practical while emphasizing forest management objectives. Compared with Alternative A, this may result in a slightly decreased pace and scale of forest management activities, though not to the extent as in areas managed to protect wilderness characteristics as a priority over other multiple uses, described above.

Wild and Scenic River Management

Under Alternative C, three river segments (totaling 14.2 miles) would be managed as suitable for inclusion in the NWSRS, while the remaining eligible river segments identified in Alternative A would be released from further consideration. In the segments managed as suitable, management directions would be the same as under Alternative B, having the same type of effects on forestry in these areas. Under Alternative C, there would be fewer river segments and miles that would be managed to protect and enhance river values, compared with Alternative A. This would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area compared with Alternative A.

ACEC Management

Under Alternative C, 5,200 acres of LSRs, 80 percent less than under Alternative A, would be present within ACECs. This would result in less acreage under ACEC-related restrictions on forestry activities in these areas compared with Alternative A. This would likely lead to an increase of forest restoration management activities including but not limited to, increased harvest of timber and SFPs.

Alternative D

Forestry Management

Under Alternative D, the main priority emphasized regarding management of forested areas other than LSRs would be to promote late-seral characteristics that collectively benefit wildlife and riparian habitats, recreational needs, cultural resources, community stability, and commodity production, including merchantable timber and other forest products. Compared with Alternative A, this would result in an

increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area.

In LSRs, timber harvest would only be allowed as a byproduct of restoration projects that would be done to ensure LSRs remain resilient to fire, pests, pathogens, and climate change. Similarly, thinning treatments must maintain or protect wildlife habitat and corridors or plant habitat, which could include increasing stand heterogeneity. Actions would maintain sufficient snag and downed woody debris to provide nesting, roosting, and foraging habitat for federally listed species. Management would maintain the complexity of habitat types within stands and across the landscape. Compared with Alternative A, this would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the decision area.

Wildland Fire Management

Under Alternative D, management actions aim to manage the interface, WUI, and non-WUI zones, as described in the management common to all alternatives, even if they intersect the essential connectivity corridor. Appropriate treatments would be determined on a case-by-case basis in areas of overlap where the WUI and special designations conflict. Where the interface zone and special designations overlap, interface zone goals and objectives would take priority. During implementation-level planning, treatments would be modified on a case-by-case basis in WUI and non-WUI zones to meet resource objectives in essential connectivity corridors of high biological value. Suppression lines as long-term strategic fire breaks would be maintained, as appropriate. Compared with Alternative A, this would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs.

Soils Management

Under Alternative D, the effects on forest management from soils management would be the same as those described under Alternative B. Compared with Alternative A, this would result in an decreased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs.

Wilderness Study Area Management

Under Alternative D, an additional 6,040 acres would be designated as Section 202 WSAs. Like the Section 603 WSAs managed under all alternatives, these areas would be subject to management with the goal of maintaining wilderness values and character per BLM Manual 6330. Forest product removal and forestry activities would become more restricted in these areas, as fuels treatments and restoration would be implemented based on analysis using the Minimum Requirements Decision Guide. These restrictions would result in a decreased pace and scale of forest restoration management activities including but not limited to, decreased harvest of timber and SFPs, and less resilient forests in these areas compared with Alternative A.

Lands with Wilderness Characteristics Management

The nature and types of impacts associated with lands managed to protect wilderness characteristics as a priority over other multiple uses under Alternative D would be the same as those described under *Impacts Common to All Action Alternatives*. Under Alternative D 11,570 acres would be managed as such. Compared with Alternative A, this would result in a decreased pace and scale of forest restoration management activities including but not limited to, decreased harvest of timber and SFPs.

Under Alternative D, the BLM would also manage 21,950 acres as lands managed to minimize impacts to wilderness characteristics while emphasizing other uses. In these areas, impacts on wilderness characteristics from forestry management would be considered and minimized to the extent practical while emphasizing forest management objectives. Compared with Alternative A, this may result in a slightly decreased pace and scale of forest management activities, though not to the extent as in areas managed to protect wilderness characteristics as a priority over other multiple uses, described above.

Wild and Scenic River Management

Under Alternative D, 62 river segments (totaling 147.2 miles) would be managed as suitable for inclusion in the NWSRS, while the remaining eligible river segments identified in Alternative A would revert to management direction provided in the Plan. In the segments managed as suitable, management directions would be the same as under Alternative B, having the same type of effects on forestry in these areas. Compared with Alternative A, under Alternative D there would be fewer river segments and miles that would be managed to protect and enhance river values by maintaining eligibility for inclusion in the NWSRS. However, river values would continue to be protected and enhanced in these areas by other management direction in the Plan, including for ACECs, and by following existing regulations and BLM policy). This would result in a similar pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, compared with Alternative A.

ACEC Management

Under Alternative D, ACEC designations and the associated impacts would be the same as those under Alternative B.

Cumulative Impacts

The cumulative impacts analysis area for forestry includes the entire planning area, regardless of surface administration or ownership. Past and present actions within the planning area directly related to silviculture are largely made up of woodland restoration, habitat enhancement, fuels treatments (see **Appendix B**), and timber harvest.

Table D-75 lists the total timber harvest in the eight counties in the planning area from 2017 through 2020. The table shows the total MBF harvested from the counties included in the planning area as well as a breakdown of the harvest based on landownership/administration. Due to the division of land administration in the planning area (BLM-administered lands make up only 3 percent of the total) and suitability of BLM-administered lands for timber harvest, lands administered by entities other than the BLM have had a greater impact on overall timber harvest in the planning area than activities on BLM-administered lands, which is expected to continue.

As populations increase in and around the planning area, more stress could be placed on forested lands in and around the planning area to meet the associated needs. Reasonably foreseeable future actions under all alternatives are similar in nature to the past and present actions. Due to explicit management guidance better detailing how and where forestry activities would take place under all action alternatives, including in late successional forests, many special designation areas like ACECs, and riparian management areas, forestry activities related to improving the condition of forested lands are more likely to occur. This would lead to the harvest of more forest products and greater impacts on moving forested lands toward the desired condition under all action alternatives, compared with Alternative A.

Table D-75
Timber Harvest in the Planning Area in MBF 2017–2020

Year	Ownership (% of planning area administered) ²					Total
	Private and Tribal (55.8%)	State (1.9%)	Forest Service (37.5%)	BLM (3.2%)	County and Municipal (0.01%)	
2017	882,129	18,914	108,643	452	193	1,009,945
2018	950,488	19,626	98,511	0	553	1,069,177
2019	867,119	12,577	- ¹	1,220	260	880,656
2020	886,122	22,367	62,336	1,933	654	973,412

Source: UMBBER 2023, BLM 2021a

¹ Accurate data for Forest Service lands were not available for 2019, as of February 24, 2023.

² Percentages do not add up to 100, as not all land owners/administrators in the planning area participate in timber harvest.

Current and future foreseeable actions are largely expected to increase timber production and harvest. However, market variability within the timber industry can be difficult to predict, making evaluation of cumulative impacts of past, present, and future actions challenging. For instance, the viability of future forest restoration projects involving private partners might largely depend on market demand for timber or SFPs, such as biomass. If demand for forest products increases, a greater potential for restoration work could be expected, resulting in beneficial impacts through a restored landscape. If demand decreases, existing milling infrastructure may close, and less restoration work could be completed. This would move the landscape away from desired conditions. Restoration projects, in particular, might also be limited by operational costs. This could influence the overall scale of restoration work. Completed restoration projects would provide the greatest benefit to timber production and harvest; consequently, those projects would be critical to a continuous and sustainable supply of timber products from BLM-administered lands in the planning area.

Under Alternatives B, C, and D, timber production and harvest in the decision area is anticipated to be greater than under Alternative A and greatest under Alternative D. While the acreage treated by forestry projects and quantity of forest product removed in the decision area are small relative to the planning area, cumulative impacts from the adoption of Alternatives B, C, and D would likely result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs and more resilient forests throughout the planning area compared with continued management under Alternative A.

D.3.2 Land Tenure

Issue Statements

- How would alternatives affect prioritization for retention or acquisitions given current regional land use and population trends, wilderness goals, species recovery goals, and anticipated climate change impacts?
- How would the alternatives affect the prioritization of lands to be considered for withdrawal given current and anticipated future conditions?

Affected Environment

In 1976, the passage of FLPMA fundamentally changed the BLM's mission concerning land tenure. Prior to passage, the BLM's primary land tenure goal and before that, the General Land Office, was to dispose of

lands to allow development. Sections 102 and 202 of FLPMA require the Secretary of the Interior to develop land use plans for all public lands under the BLM's administration. After the passage of FLPMA, public land is to be retained in federal ownership unless disposal serves national interests. Past land use planning efforts, particularly for the lands under the Redding RMP, identified land tenure areas where the BLM would acquire and retain lands to meet specific management goals and other areas where disposal would best meet the public interest. Since the Redding and Arcata RMPs were approved, the BLM has actively worked toward acquisition and disposal actions to consolidate landownership patterns.

Since completion of the previous planning documents, the BLM has made substantial changes to the pattern of public landownership in the planning area by acquiring available lands from willing sellers, while also disposing of lands that are identified as suitable for disposal. Acquisitions and exchanges were focused on management areas designated by the plans, such as the Sacramento River Bend ACEC and Mill Creek area. The primary method of achieving these changes during this period was through land exchanges.

Table D-76 shows a summary of surface landownership in the planning area.

Table D-76
Surface Landownership within the Planning Area

Landowner	Total Acres
BLM	457,200
Other federal	5,864,900
State	273,300
Local government	1,800
Private/other	7,861,300
Total	14,458,500

Source: BLM GIS 2023

Acquisition

Acquisitions through exchange, purchase, or donation make up an important component of the BLM's land management strategy. Within the planning area, the BLM has acquired approximately 36,050 acres of surface lands and 17,099 acres of split-estate since the previous planning documents were adopted in 1993. The BLM acquires land from willing sellers when it is in the public's interest and is consistent with land use plans. Acquisition through purchase is focused on those areas identified for acquisition in planning documents and where funding is available through federal (congressionally appropriated funds) programs or state grants. For this reason, it is important for planning efforts to consider the federal designation (for example, ACEC or SRMA) associated with each potential acquisition area and how it may affect future funding when making determinations of special designations. Pre-acquisition title and boundary work necessary to identify title or boundary defects is conducted by the BLM Cadastral Survey Program in accordance with Department of Justice title standards (U.S. Department of Justice 2016) and BLM Standards for Boundary Evidence (BLM 2014). Various types of acquisition are described below.

Fee Simple Acquisition

Lands are typically acquired in "fee simple" ownership, which offers the highest level of control of the surface estate. This is typically the desired form of ownership for most acquisition goals; however, in some cases, other forms of ownership are more appropriate. Although owned in fee, some parcels may contain deed restrictions that limit the use of the lands in perpetuity. These deed restrictions are carefully considered and reviewed, with assistance from the Solicitor's Office, to ensure compliance is met with

FLPMA and the Department of Justice title standards. Some parcels may contain antiquated, unsurveyed, or misrepresented boundary locations that raise significant title or boundary issues. Parcels are carefully considered and reviewed by the BLM Cadastral Survey Program to ensure compliance is met with FLPMA and the BLM Standards for Boundary Evidence (BLM 2014).

Access Easements

Several forms of legal access rights may be obtained through the acquisition process. Acquisitions may either acquire full access rights, to include the right of public access, or be limited to access needed for administrative purposes (e.g., non-exclusive easements), as discussed below. The rights acquired depend on each particular situation and what the private party is willing to transfer.

Public Access—Exclusive Easements

In addition to access routes constructed on public lands, the United States has also acquired access rights from private parties. Exclusive easements convey full control of the easement to the United States for the purposes stated in the easement document. They can provide access to public lands for the BLM, its permittees and licensees, and/or the general public.

Public access to public lands can also exist where access is maintained by the county or local municipality. The BLM has worked to acquire and maintain public access since the previous RMPs. Public access has improved as a result of acquisitions that consolidate the ownership pattern and are located in such a way as to connect with public access routes. Many BLM-administered parcels in the planning area lack legal public access.

Administrative Access—Non-Exclusive Easements

Occasionally, sellers are not willing to provide exclusive access that would allow for public use of the access route. This may be because they are concerned about the potential impacts on other private lands in the vicinity, changing the pattern of public use, the resulting loss of solitude and privacy, and potential liability issues. In some cases, the BLM has acquired administrative access only (i.e., no public access), so at a minimum, BLM staff, contractors, and other designated parties can access the lands and conduct government business.

Many lands the BLM has acquired came with access easements to the property. While most of these easements are not exclusive easements, some can be interpreted to include public access. Generally, these easement interpretations are done in coordination with the Solicitor's Office. Many of these easements come with uncertain geographic location. These easement boundaries are surveyed and marked, when needed, by the BLM Cadastral Survey Program.

Conservation Easements

Another form of partial ownership (i.e., less than fee simple) acquired by the BLM on non-federal lands is in the form of conservation easements. Conservation easements are a tool used to preserve and protect resource values on non-federal lands by restricting certain uses and types of future development of those lands. These easements often address permitted and prohibited uses and practices of the private landowner. These properties often present their own unique management challenges, particularly relating to enforcement of provisions within the conservation easement. The Arcata FO acquired one conservation easement over the South Spit of Humboldt Bay in 2003. The Redding FO acquired two conservation easements (one agricultural and one riparian) in the Upper Sacramento Bend Area ACEC.

Exchanges

Land exchanges are a viable option when the exchange proponent holds lands identified for acquisition and has an interest in acquiring BLM-administered lands identified for disposal with approximately equivalent market value. The exchange must be in the public interest and, as such, typically only involves considerable acreage of nonfederal lands with recognized resource or public values. However, exchanges can require a large investment of time and resources, which make them a less viable option compared with other land tenure adjustments. Exchanges focused on ecologically sensitive lands tend to be facilitated by conservation organizations, such as The Nature Conservancy or the American Land Conservancy, which are able to obtain purchase options or purchase properties outright to facilitate transactions. Facilitation by nonprofit conservation organizations provides a level of responsiveness to the market and available properties that the BLM alone is unable to provide.

One of the goals of the 1993 Redding RMP was to transform the scattered land base of the Redding Resource Area into consolidated resource management units to meet the needs of public land users. The primary mechanism to meet this land tenure adjustment goal was through the use of land exchanges. Major consolidation of public land in the planning area from exchanges include the Sacramento River Bend ACEC, Grass Valley Creek, Clear Creek, and the Interlakes Special Recreation Management Area (SRMA). Land exchanges resulted in the acquisition of over 43,000 acres and the disposal of 38,000 acres.

Disposal

Lands may be disposed of when they are identified for disposal through the land use planning process and meet criteria identified in Section 203 of FLPMA. Disposals are authorized pursuant to Section 203 of FLPMA, 43 CFR 2710, and BLM Sales Manual 2710. See **Appendix J** for lands proposed for disposal from BLM ownership. Sales of public lands will not be less than fair market value; they will require an appraisal to be completed that conforms to established appraisal principles and standards in place at the time of the sale. The BLM may also dispose of lands in the form of Recreation & Public Purposes (R&PP) Act patents. The regulations provide guidelines and procedures for transfer of certain public lands under the R&PP Act, as amended (43 USC 869 et seq.), to federally recognized Tribes, states or their political subdivisions, and nonprofit organizations and associations for recreational and public purposes. Under the R&PP Act, the Arcata FO has patented 1,312 acres through 16 separate transactions to address community needs. The Redding FO has patented 1,898 acres through 27 separate transactions. R&PP lease sales within the planning area include those listed below. Lease renewals are also ongoing:

- French Gulch Transfer Site
- Two Siskiyou County Transfer sites
- Junction City Shooting Range
- Douglas City School.

Historically, the primary method of land tenure adjustment was through the use of land exchanges (FLPMA Section 206) and R&PP Act leases and patents. Disposal of small-acreage, low value parcels were considered in some cases to resolve inadvertent trespass or when parcels could not be reasonably exchanged. The Redding RMP was amended in 2005 to allow land sales that meet criteria under Section 203 of FLPMA to be considered as another land tenure adjustment option for consolidating the scattered land base. This amendment also considered the applicability of the Federal Land Transaction Facilitation

Act, which allowed sale proceeds to be held in a special fund for future use in acquiring properties by the BLM, Forest Service, USFWS, and NPS.

Under previous planning guidance, disposals could occur anywhere outside of identified management areas, which are designated as “retain and acquire.” Specific identification of parcels or areas suitable for disposal is necessary to prevent a need for amendments and plan maintenance to clearly identify parcels.

Withdrawals

Withdrawals are authorized in accordance with FLPMA Section 204 and 43 CFR 2300. Withdrawals can dedicate public lands for a specific purpose or can restrict the use of public land and segregates the land from the operation of some or all public land laws and/or mineral laws. This can include closing certain areas to settlement, sale, location, or entry under some or all of the general land laws. They can also be used to transfer jurisdiction of the management of public lands from one agency to another. There are four major categories for withdrawals: administrative, presidential proclamations, congressional withdrawals, and Federal Power Act or FERC withdrawals. Withdrawal actions including new proposals, modifications, extensions, or revocations are recommended to the Secretary in accordance with Section 204 of FLPMA and 43 CFR 2300. All withdrawals are analyzed on a case-by-case basis (BLM 2014). Withdrawals issued under Section 204 of FLPMA shall not exceed 20 years from the date the order is signed. The BLM’s ability to dispose of land may be constrained by the existence of withdrawals. Withdrawals must be for the purpose of protecting specific existing or proposed uses when other applicable laws and regulations will not provide the opportunity for protection of the surface resources and uses.

FLPMA/Recreation/Wilderness Act Withdrawals

- Trinity River and Clear Creek Acquisition Areas (344 acres): This area is withdrawn from location and entry under the United States mining laws (30 U.S.C. Ch. 2 (1994)), but not from leasing under the mineral leasing laws or the Materials Act of 1947. These lands were withdrawn under Public Land Order 7308 in 1998. This withdrawal expired in January 2018.
- Trinity WSR/Indian Creek (3,123 acres): This area is withdrawn from location and entry under the United States mining laws (30 U.S.C. Ch. 2 (1994)), but not from leasing under the mineral leasing laws or the Materials Act of 1947. These lands were withdrawn under Public Land Order 7839 in 2015.
- Forks of Butte Creek (2,070 acres): This withdrawal from mineral entry protects water quality. These lands were withdrawn in perpetuity under Public Land Order 5329 in 1973. This withdrawal only covers a portion of the Forks of Butte ACEC subsequently created in the 1993 Redding RMP. The prior planning direction was to withdraw all acreage within the Forks of Butte ACEC; however, a large portion of the ACEC is still in private ownership.
- South Fork Eel River Wilderness (12,868 acres): These lands were withdrawn under the Northern California Coastal Wild Heritage Wilderness Act (Public Law 109-362) in 2006.
- Elkhorn Wilderness (11,001 acres): The Elkhorn Wilderness became a designated wilderness area in 2011 under the Northern California Coastal Wild Heritage Wilderness Act (Public Law 109-362). For watershed restoration activities to be completed, this wilderness did not officially become a wilderness area until 5 years after the passage of Public Law 109-362b.
- Yuki Wilderness (53,389 acres): The Yuki Wilderness became a designated wilderness area in 2006 under the Northern California Coastal Wild Heritage Wilderness Act (Public Law 109-362).

- Yolla Bolly-Middle Eel Wilderness (8,600 acres): The Yolla Bolly-Middle Eel Wilderness Area became a designated wilderness area in 1964 under the Wilderness Act. Approximately 109,000 acres of primarily Forest Service-administered lands were withdrawn at the time the legislation was passed. As a result of the California Wilderness Act of 1984 (Public Law 98-425) and the Northern California Coastal Wild Heritage Wilderness Act (Public Law 109-362) in 2006, an additional 69,000 acres have been withdrawn, including approximately 8,600 acres of BLM-administered land.

Power Site Withdrawals

Power site withdrawals are made under the authority of the Federal Power Act of June 10, 1920. These withdrawals are made when a qualified application for a power site development is made with the FERC and a FERC license is issued. There are a total of 65 existing power site withdrawals in the planning area. These withdrawals are relatively small in acreage and are concentrated along the Trinity, Eel, Klamath, Battle Creek, and Shasta River systems. Additional information regarding non-FERC hydropower is provided in **Section D.3.4**.

Environmental Consequences

Impacts Common to All Alternatives

Disposal

Lands not identified for retention would be identified for disposal in accordance with the criteria for disposal found in Section 203 of FLPMA and the criteria identified under each alternative: (1) such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another federal department or agency; or (2) such tract was acquired for a specific purpose and the tract is no longer required for that or any other federal purpose; or (3) disposal of such tract will serve important public objectives, including but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in federal ownership. All lands identified for disposal meet one or more of these criteria.

The BLM would pursue disposals through State selections, cadastral survey boundary adjustments, Recreation and Public Purpose Act patents, sale of public lands at a price not less than their fair market value as determined by the Secretary under Section 203 of FLPMA and 43 CFR 2710, reservation and conveyance requirements and procedures for mineral interests under Section 209 of FLPMA, and leases under Section 302 of FLPMA. Land exchanges may also be considered; however, land exchanges would not be used as a primary method for land tenure adjustments because they limit the BLM's ability to dispose of lands freely and would not necessarily be the most viable option for land disposals.

The following criteria would be considered:

- Disposal of the land would not adversely impact the manageability of remaining BLM-managed lands or interest in lands. If it is determined that a disposal parcel contains a valid mining claim, the Authorized Officer will determine whether to continue with the disposal. Under certain circumstances as outlined in Section 209 of FLPMA and 43 CFR 2720, the BLM may convey Federally owned mineral interests to prospective or current surface owners.

- Disposal of the land would not adversely impact recreational public access to remaining BLM-administered lands.
- Parcels or portions thereof, which have survey or inadvertent trespass related issues that cannot be resolved through enforcement actions or other means.
- R&PP Act leases that are pending patenting (i.e., Junction City Firing Range, French Gulch Transfer Site, Siskiyou County Dropbox Disposal Site, Hornbrook Disposal Site).
- Reversionary interest in a R&PP Act patents would be disposed of under Section 203 of FLPMA and would require a compliance review.
- Lands that pose environmental liability to BLM due to existing contamination from past or present activities.
- Isolated BLM parcels fully surrounded by private lands.

Prior to any decision to dispose of public land, the BLM would review the proposed disposal with an interdisciplinary team, complete NEPA, conduct any required resource surveys, conduct any required Standards for Boundary Evidence Certificate(s), complete any environmental site assessment for hazardous materials, and follow other requirements in the disposal process. BLM will consider the following on a case-by-case basis when evaluating surface lands for disposal, criteria including but not limited to:

- Resource values as described in the retention and acquisition sections.
- Amount of public investment in facilities or improvements and the potential for recovering those investments
- Difficulty or cost of administration (manageability)
- Suitability of the land for management by another government agency or Tribe
- Encumbrances, including:
 - Recreation and public purposes
 - Withdrawals
 - ROWs
 - Other leases or permits
- Consistency of the decision with cooperative agreements and plans or policies of other agencies
- Suitability and need for change in landownership or use for such purposes as community expansion or economic development, such as industrial, residential, or agricultural (other than grazing) development.

Disposal of lands containing resources of high national interest, including WSAs, research natural areas, and ACECs, to nonfederal agencies or nonprofit organizations (for example, county and state agencies or The Nature Conservancy) would be considered only if the protection and conservation that would be afforded the parcel following transfer of title would equal or exceed the level afforded by BLM ownership.

Patent restrictions may be used in certain cases to protect special status species, important cultural resources, or other public interests associated with parcels of land subject to disposal. If it is determined that adverse impacts would result if resources were removed from BLM ownership, then the BLM would

not continue with the disposal action, or the BLM would apply mitigation requirements under federal law, regulation, or BLM policy. This would minimize potential adverse impacts on those lands and resources.

One of the objectives for land tenure is to acquire lands that provide public access and dispose of lands identified as difficult/uneconomic to manage for public use. Disposal of lands that are difficult to manage would consolidate management and reduce fragmented surface ownership, thereby improving the cost effectiveness and overall manageability and access of public lands within the decision area. Designating lands for disposal would enhance the BLM's ability to acquire lands with better opportunities for resource protection or public access. Certain lands would not be considered for disposal unless exchanged with lands of equal or greater monetary or resource value, such as lands containing forestland, water and wetland resources, vegetation, sensitive wildlife and plant species, wilderness areas, and areas of special designations. Focusing exchanges on areas that meet specific resource management objectives would result in an overall beneficial impact on these resources by affording them additional protections and facilitating management.

Retention

Under all alternatives, the BLM would retain all public lands or interests (such as easements) in land that enhance multiple-use management and all lands not identified for disposal. Under all action alternatives, the following criteria would be considered when designating land for retention:

- WSR designated management corridors
- Lands within or adjacent to recreation management areas that contain developed recreation facilities and land that enhances recreation access or opportunities
- Developed administrative sites
- Heritage areas (TCPs), unless transferred to another federal agency or Tribe
- Contains high sensitivity cultural resources (NRHP listed or eligible sites and landscapes)
- Contains high sensitivity paleontological resources (unique or unusual fossil-bearing zones)
- Habitat for proposed, candidate, and federally listed species; BLM sensitives species; or imperiled plant communities
- LSRs
- Lands identified in the Dingell Act
- Lands meeting the criteria in the Dingell Act that would provide access points from public roads that would aid resource management and/recreational public access
- Lands within or adjacent to ACECs, wilderness, WSAs, national scenic or historic trails, monuments, NCAs, and similar designations
- Lands within or adjacent to lands managed for wilderness character as a priority
- Lands adjacent to other federal or state lands that are managed for conservation or recreation purposes
- Identified important wildlife habitat (for example, critical deer winter range)
- Lands with riparian areas and/or perennial surface water
- Lands to improve water quality and quantity
- Essential corridors of connectivity
- Acquired lands or interest (such as easements)

Under all action alternatives, the areas above would be retained for long-term management unless the resource values and public objectives that were the basis for designation as a retention area and the related management opportunities would be maintained or enhanced if the lands left public ownership. Designating lands for retention results in beneficial impacts because it allows the BLM to better serve the public interest by maintaining public access and recreational opportunities and ensuring continued protection of natural resources.

Acquisition

The BLM's goal under all alternatives would be to acquire lands or interests in land that complement important resource values and further management objectives. For all action alternatives, the criteria for land acquisition include but are not limited to:

- Habitat for proposed, candidate, and federally listed species, BLM sensitives species, imperiled plant communities, or provides for habitat connectivity.
- Contains key riparian corridors that improve riparian connectivity and maintain riparian habitat integrity.
- Contains WSR corridors that support anadromous fish habitat, recreational resources, and cultural resources. This would apply to both designated and suitable segments.
- Contains sensitive habitats such as vernal pools, riparian woodland, wetlands, or land that has high potential for restoration of sensitive habitats.
- To address sea level rise, dune migration, or manage tidal wetlands areas.
- Lands that enhance recreation access or opportunities.
- Improves access to lands which meet recreation priorities identified in the Dingell Act.
- Improves public and administrative access to existing federal land identified for retention.
- Lands within or nearby special designation areas that exhibit the pertinent qualities of the special designation areas.
- Lands needed to improve efficiency for long-term resource management of other BLM-administered areas
- Lands that meet the intent of the LWCF or FLTFA.
- Lands that improve water quantity or water quality.
- Provides for scientific research opportunities.
- Contains high sensitivity cultural resources (NRHP listed or eligible sites and landscapes, TCPs).
- Contains high sensitivity paleontological resources (unique or unusual fossil-bearing zones).

Acquisition of lands meeting these criteria would result in beneficial impacts to the overall manageability of BLM lands for public access and limit adverse impacts on natural resources found on non-federal lands. These criteria are not intended to be an exhaustive list of every acquisition target. Not all property recommended for acquisition will be acquired. The BLM would manage acquired lands similarly to adjacent BLM-administered lands unless the BLM determines specific management needs that are unique to those acquired lands. For all acquisitions, the BLM would coordinate with county Boards of Supervisors and the public during the initial outreach stage of the acquisition process to gain local support and understanding for the action. However, acquisitions are not contingent upon the support or approval of non-federal

stakeholders. Public and stakeholder support of an acquisition is important in order to get more support at the national level with regard to securing funding for the proposed acquisition.

Withdrawals

Under all alternatives, the following existing withdrawals would be recommended to be continued and renewed, where appropriate:

- Trinity WSR
- Forks of Butte Creek
- Existing FERC withdrawals (65 total throughout the planning area), unless the use would result in impacts that cannot be mitigated

New withdrawal proposals would continue to be analyzed and recommended to the Secretary of the Interior on a case-by-case basis. This process would include a public participation process and coordination with agencies, as applicable. If additional lands are identified outside of special designation areas or protections by other Acts, which contain special or sensitive resources, or lands containing government investments (e.g. developed campgrounds or river restoration sites) are identified for withdrawal after completion of the RMP, the BLM will pursue plan maintenance or plan amendments for new proposed withdrawals.

When lands or interests in lands are no longer needed for the purpose for which they were withdrawn, these lands would be recommended for relinquishment or revocation (in accordance with 43 CFR 2370) by the BLM or other agencies. If determined suitable to return to the BLM and in accordance with criteria identified in 43 CFR 2372 and 2374, the BLM would manage these lands typically in accordance with the management described in this document for adjacent or nearby BLM lands unless the BLM determines specific management needs. If these lands or interests are determined non-suitable for return to the BLM as a result of a substantial change in character by improvements or otherwise, then these lands may become subject to disposal under the general public land laws.

The BLM will not dispose of withdrawn land until the withdrawal segregation has been lifted. For BLM lands included in a withdrawal (that is, from a Public Land Order, executive order, secretarial order, or older agency orders) that are subsequently identified to be disposed of in order to resolve survey or trespass-related issues that cannot be resolved otherwise, the BLM would recommend a partial revocation of the withdrawal to remove those lands from the withdrawal and open them to disposal under the general public land laws, if other special designations allow.

Under all alternatives, other agency requests for withdrawal, relinquishment, extension, or modification will be considered on a case-by-case basis. In some cases, withdrawals may transfer jurisdiction from one Federal agency to another. Withdrawals designated by Congress, executive order, or other method that are not within BLM jurisdiction to modify would be unaffected (i.e., national monuments, wilderness areas, military purposes, Forest Service withdrawals).

Under all alternatives, these withdrawal actions would result in a beneficial impact on BLM's ability to meet management goals and objectives. Withdrawals would have a beneficial impact on BLM's administration of public lands by transferring (a portion or all) administrative jurisdiction to other Federal agencies; segregating public lands under all or some general land laws or mineral laws; and dedicating

public lands for specific purposes. Maintaining or improving protections for valuable resources and facilities would result in beneficial impacts on those resources.

Section D.3.5, Nonrenewable Energy and Minerals, discusses new withdrawals from mineral entry and location recommendations.

Alternative A

The analysis area for land tenure includes all land within the planning area, regardless of surface ownership.

Disposal

Under Alternative A, approximately 101,000 acres (26 percent of the decision area) would be identified as potentially suitable for disposal in accordance with the previous RMPs (see **Map 2-11** in **Appendix A**). This represents the highest acreage recommended for disposal of any alternative. The BLM would consider the disposal of small-acreage, low-value parcels only in some cases to resolve inadvertent trespass or when subject parcels cannot reasonably be exchanged. As discussed under *Impacts Common to All Alternatives*, designating lands for disposal affords the BLM the opportunity to exchange these lands with better opportunities for resource protection and public access. However, disposed lands would no longer be afforded the protections of BLM regulations and policies, resulting in a potential adverse impact on natural and recreational resources.

Retention

Under Alternative A, 281,400 acres (74 percent of the decision area) would be identified for retention; this amount is the least of all the alternatives. Impacts related to retention would be similar to those discussed under *Impacts Common to All Alternatives*.

Acquisition

Under Alternative A, impacts related to acquisition would be similar to those discussed under *Impacts Common to All Alternatives*.

Withdrawals

Under Alternative A, the BLM would manage withdrawals as discussed under *Impacts Common to All Alternatives*.

Alternative B

Disposal

Under Alternative B, 6,000 acres (2 percent of the decision area) would be identified as potentially suitable for disposal (see **Map 2-12** in **Appendix A**); this is approximately 95,000 fewer acres than under Alternative A. Lands suitable for disposal would include four parcels adjacent to and within Tribal lands that would be made available for transfer or disposal to the appropriate Tribe(s).

Retention

Under Alternative B, the following additional retention criteria would be applied:

- Retain small or isolated parcels that provide natural resource refugia and contribute to climate change resiliency, are in Essential Connectivity Corridors of High Biological Value, or are important wildlife habitat.
- Retain lands with a high sensitivity for potential cultural resources.
- Retain BLM inholdings within Forest Service land or isolated parcels immediately adjacent to Forest Service lands, where appropriate. Coordinate with the Forest Service in the management of those lands.

After applying the criteria for retention common to all alternatives and the additional retention criteria above, a total of 376,500 acres (99 percent of the decision area) would be identified for retention under Alternative B. Impacts related to retention would be similar to those discussed under *Impacts Common to All Alternatives*. Due to the high acreage of land identified for retention, Alternative B would further limit the BLM's ability to consolidate public land and acquire additional public resources through exchange, compared with Alternative A.

Acquisition

Under Alternative B, in addition to the acquisition criteria common to all alternatives, the following additional acquisition criteria would be applied:

- Prioritize acquisition of lands within Essential Connectivity Corridors of High Biological Value
- Prioritize acquisition of lands that provide refugia, unique habitat value, or resiliency
- Acquire lands along suitable WSR and riparian corridors, to support fish values
- Use land tenure adjustments to increase the functional size of areas managed for corridors for genetic flow and climate-induced species shifts

Acquisitions meeting these criteria would improve management and protection of natural, cultural, and recreational resources found on nonfederal lands, resulting in greater beneficial impacts on climate, wildlife, vegetation, water resources and wetlands, fish and aquatic species, coastal resources, cave and karst resources, visual resources, and wilderness resources compared to Alternative A.

Withdrawals

Under Alternative B, the BLM would manage existing withdrawals as discussed under *Impacts Common to All Alternatives*. New withdrawal from mineral entry and location recommendations, in accordance with Section 204 of FLMPA, would preserve or increase protection for the following resources:

- Baghdad Cemetery/Helena Site and Indian Creek Townsite
- All developed recreation sites and communication sites
- Identified TCPs
- Clear Creek withdrawal to be continued; proposed for withdrawal from settlement, sale, location, exploration or mining under the Mineral Leasing Act (1920) and Materials Act (1947), and entry under the general public land laws, including the mining laws (1872).

- Trinity River withdrawal would be continued; proposed for withdrawal from location or entry under the mining laws, but not the mineral leasing laws.
- New river segments managed as suitable for inclusion in the NWSRS categorized as Wild.
- Wilderness/WSA: Development work, extraction, and patenting for locatable minerals would be allowed in designated wilderness areas, Section 603 WSAs, and Section 202 WSAs only on valid claims existing before designation.
- Lands with wilderness characteristics managed as a priority.
- Forks of Butte Creek ACEC
- Ma-le'l Dunes ACEC
- Grass Valley Creek ACEC
- Eel River WSR (Mainstem Eel, North Fork Eel, Middle Fork Eel, South Fork Eel, Van Duzen)

Alternative C

Disposal

In addition to the disposal criteria common to all alternatives, the following additional disposal criteria would be applied under Alternative C:

- Dispose of isolated parcels without access to consolidate BLM land management into larger manageable tracts of land.
- Dispose of lands that are too small to manage effectively.
- Dispose of BLM inholdings within Forest Service land or isolated parcels immediately adjacent to Forest Service lands. Disposal would be to the Forest Service only to consolidate management.
- Dispose of BLM-administered lands adjacent to NPS boundaries only to the NPS to consolidate management.
- R&PP Act lease applications for low-income or homeless housing or other associated facilities would be considered on a case-by-case basis on lands identified for disposal. The proposed use would need to comply with this RMP; Section 212 of FLMPA; and 43 CFR 2740 and 2912.

After applying the criteria for disposal common to all alternatives and the additional disposal criteria above, a total of 49,400 acres (13 percent of the decision area) would be identified as potentially suitable for disposal under Alternative C (see **Map 2-13** in **Appendix A**); this would be 51,600 fewer acres than under Alternative A.

The transfer of BLM properties to adjacent federal landowners such as the National Park Service and Forest Service would result in a greater degree of consolidation of federal landownership and the related beneficial impact on manageability, compared with Alternative A.

Retention

No additional retention criteria beyond those common to all alternatives would be applied under Alternative C. A total of 333,100 acres (87 percent of the decision area) would be identified for retention under Alternative C; this would be 51,600 more acres than under Alternative A. Impacts related to retention would be similar to those discussed under *Impacts Common to All Alternatives*.

Acquisition

Under Alternative C, in addition to the acquisition criteria common to all alternatives, the following additional acquisition criteria would be applied:

- Prioritize acquisition of lands that provide open space in or around communities
- Acquire access easements or lands from willing sellers that would provide access to public land
- Acquisitions would proceed with the support of BOS

By increasing access to BLM-administered land, Alternative C would therefore result in greater beneficial impacts on recreational and visitor services, travel and transportation, and other public uses than Alternative A. However, increased access and visitation to these areas could result in an increased demand for community services and recreational opportunities as well as additional ROWs for utilities, transportation, and access. These could potentially result in adverse impacts on recreational and natural resources due to increased use and degradation.

Withdrawals

Under Alternative C, the BLM would manage withdrawals as discussed under *Impacts Common to All Alternatives* with similar impacts. New withdrawal from mineral entry and location recommendations would be the same as Alternative B.

Alternative D

Disposal

Under Alternative D, similar criteria for disposal would be applied as under Alternative B.

This would result in 5,900 acres (2 percent of the decision area) identified as potentially suitable for disposal (see **Map 2-14** in **Appendix A**). This would be 95,100 fewer acres than under Alternative A. Impacts related to disposal would be similar to those discussed under Alternative B.

Retention

Retention criteria under Alternative D would be similar to those applied under Alternative B, with the exception that BLM inholdings within USFS land or isolated parcels immediately adjacent to USFS lands would either be retained or transferred to USFS, where appropriate. A total of 376,600 acres (99 percent of the decision area) would be identified for retention under Alternative D; this is 95,200 more acres than under Alternative A. Impacts related to retention would be similar to those discussed under Alternative B.

Acquisition

Under Alternative D, in addition to the acquisition criteria common to all alternatives, the additional criteria discussed under Alternatives B and C would also be applied, with the exception of the support of the BOS. This would result in similar beneficial and adverse impacts on natural resources, recreation and visitation, and use authorizations as Alternatives B and C.

Withdrawals

Under Alternative D, the BLM would manage withdrawals as discussed under *Impacts Common to All Alternatives* with similar impacts. New withdrawal from mineral entry and location recommendations would be the same as Alternative B.

Cumulative Impacts

Land tenure decisions will continue to focus on consolidating BLM administration of lands where public values, such as conservation of important resources, recreation and public access, and integration with the needs of local communities, are most pronounced and often overlap. This trend will increase the complexity of land management decisions regarding which values should be primary in determining where to expend scarce resources. Disposal actions are expected to continue to address primarily community needs.

The most crucial community needs, such as fire stations operated by CAL FIRE or volunteer fire departments, water supply facilities, transfer bin facilities, shooting areas, and others, have already been identified and in many cases developed through application of the R&PP Act. Under the R&PP Act, the BLM has patented 3,210 acres within the planning area through 43 separate transactions to address community needs. The need for further R&PP Act patents and leases is expected to decrease as basic community needs are met. The BLM will depend on local entities and public input to further identify areas where BLM-administered lands adjacent to these communities are needed for recreation, public purposes, or community expansion.

Under all alternatives, but particularly under Alternative C, the disposal of lands that would potentially be converted to low-income, high-density residential developments or other developed uses would incrementally contribute to population growth in the planning area, when combined with other past, present, and reasonably foreseeable development. Subsequently, there would be an increased demand for community services and recreational opportunities as well as additional ROWs for utilities, transportation, and access. BLM-administered lands adjacent to these communities may be needed for recreation, public purposes, or further community expansion. These activities would continue to encroach upon natural and cultural resources and protected areas within the planning area, ultimately resulting in adverse cumulative impacts on those resources.

The America the Beautiful Initiative and the California 30x30 initiative (see **Section 1.5.1**) are both initiatives that focus on conserving lands and waters across the nation and state, respectively. While the California 30x30 initiative has developed a definition for a Conservation Area, the America the Beautiful Initiative does not currently have a published definition of what to consider “conserved.” **Table 1-3** in **Chapter 1** identifies the BLM-administered land by alternative that the BLM determined would contribute to both initiatives.

Under all alternatives, disposal of BLM-administered lands that are currently considered to contribute to the America the Beautiful Initiative (**Table 1-3**) could potentially result in reduced protection of those areas. Alternative A proposes the greatest acreage of land potentially suitable for disposal, followed by Alternative C. Alternatives B and D would therefore be the most consistent with the America the Beautiful Initiative. However, as discussed under *Impacts Common to All Alternatives*, the BLM would not dispose of conservation lands unless they could be transferred to another federal agency.

The BLM would consider disposing of lands containing sensitive resources to nonfederal agencies or nonprofit organizations (for example, county and state agencies or conservation organizations) only if the protection and conservation that would be afforded the parcel following transfer of title would equal or exceed the level afforded by BLM ownership. Therefore, all alternatives would result in an incremental beneficial impact on conservation and recreation lands that would support both conservation initiatives. Alternatives B and D would result in the greatest beneficial contribution toward conservation.

D.3.3 Land Use Authorizations

Issue Statements

- How would the alternatives affect land use authorizations?

Affected Environment

FLPMA provides authority for the issuance of use authorizations under various sections, depending on the activity to be authorized (for example, ROWs versus leases, easements, and permits) and who is applying (for example, private entities and municipalities versus federal agencies). Most use authorizations issued after October 21, 1976, particularly ROWs, are issued under the authority of Title V of the FLPMA. Other authorizations are issued pursuant to Sections 302 of the FLPMA (43 CFR 2920) and pre-FLPMA authorities.

Rights-of-Way

The ROW program's primary objectives are to issue ROWs that direct and control use in a manner that protects natural resources and prevents undue and unnecessary degradation, and to promote the use of ROWs in common, in coordination with applicable laws and regulations (43 CFR 2801.2).

Currently, the BLM typically issues ROWs under the authority of the FLPMA (Title V, Section 501). ROWs grant the right to construct, operate, maintain, and terminate facilities on public lands. Exceptions can include authorization of oil and gas transmission lines, which are issued under the authority of the Mineral Leasing Act of 1920, and certain federally funded highway uses pursuant to the interagency agreement between the BLM and the Federal Highway Administration (FHWA). In accordance with the interagency agreement (AA-851-IA2-40) between the BLM and the FHWA, federal lands may be appropriated for highways and highway material purposes.

In addition, the BLM currently administers ROWs that were granted prior to passage of the FLPMA in 1976 under repealed authorities. Although the FLPMA is the primary authority, there may be other authorities under which rights are held; some are repealed, some are partially repealed, and some are still valid authorities, unchanged by the passage of the FLPMA. **Table D-77**, below, summarizes the number of active ROWs administered by the BLM by use.

Most of the current ROWs administered by the BLM in the planning area allow road access and utility service to adjacent private parcels typically developed with a single-family residence. Common uses authorized on BLM-administered lands are described, but not limited to, those listed below.

Table D-77
Active Rights-of-Way Administered by the BLM within the Planning Area

Field Office	Roads and Rail	Power Line	Water Facility/Irrigation	Communication Lines/Sites	Other¹	Total
Arcata	112	10	7	23	21	173
Redding	413	148	130	105	83	879

Source: BLM 2023

¹ Includes miscellaneous case types, such as highway material sites, oil and gas transmission, federal reservations, and irrigation projects

Roads/Access

Access ROWs exist under a variety of different authorities and are held by federal, state, local, and private entities. Together, these ROWs form a road system that provides critical access needs to the public.

Two federal highways and several state highways serve the various communities within the planning area. Interstate 5 is the major north–south route within California. US Route 101 is also a north–south route that connects coastal communities in Humboldt, Mendocino, and Del Norte Counties. The major federal highways are connected to a system of state highways that traverse the seven counties within the planning area. This highway system further connects to municipal and county-maintained road systems that provide access to the public lands described within this planning document.

These systems are subject to change over time, as new roads are constructed, segments are realigned, and existing roads are removed through a formal abandonment process. The presence or absence of these roads not only affects the general public’s ability to access public lands, but also affects the ability of holders and applicants of access road ROWs to legally connect to public road systems.

Revised Statute (R.S.) 2477, enacted under Section 8 of the Mining Law of 1866, entitled, “An Act Granting Right of Way to Ditch and Canal Owners over the Public Lands, and For Other Purposes,” allowed Congress to grant ROWs for the construction of highways over public lands not reserved for public uses. Under this authority, many state and county highways were constructed over federal lands; for these types of ROW, no action was required by the Secretary of the Interior in regard to the processing. Acceptance was normally demonstrated by continuous public use over a specified period of time. R.S. 2477 was repealed by FLPMA in 1976; however, thousands of miles of highway and county roads were established under this authority and continue to be used and maintained without any other form of authorization. In some cases, R.S. 2477 roads play an important role in providing public access to private lands and public lands within management areas, such as Iron Mountain Road and the Interlakes SRMA. Since this authority predates FLPMA, roads constructed under this authority that are claimed R.S. 2477 ROWs may be maintained by counties as they existed in 1976, but must consult with BLM before undertaking any activities beyond maintenance (such as road improvements).

Tehama, Trinity, Mendocino, and Siskiyou Counties have asserted maintenance and use of roads under R.S. 2477. The remaining counties covered by the NCIP have not asserted R.S. 2477 claims. No claim asserted by any county is known to have been adjudicated by the courts. The California Department of Transportation (Caltrans) has also not asserted R.S. 2477 claims for portions of State Route 299W, but portions of the highway were likely constructed under the authority of R.S. 2477. Caltrans continues to maintain portions that are not covered under an existing Federal Aid Highway grant (issued under the authority of the Act of August 27, 1958 [U.S.C. 317]) or FLPMA grant.

Historically, the Redding and Arcata FOs have worked with Caltrans in issuing FLPMA ROWs or Letters of Consent for areas needed for highway realignment projects, disposal areas for the placement of excess soil and earthen materials, drainage improvement projects, or slope failure areas. An example is a portion of State Route 299W known as Buckhorn Grade, where Caltrans has completed major highway realignment activities over the past 10 years, known as the Buckhorn Grade Improvement Project. This was a joint project between Caltrans and the FHWA to realign approximately 10 miles of highway, disturbing an area of approximately 101 acres. The project's purpose was to improve interregional travel, improve safety and traffic along Buckhorn Grade, and provide improved access between Highway 101 and Interstate 5 for Surface Transportation Assistance Act trucks and the general public.

The Redding and Arcata FOs have been working toward issuing FLPMA ROWs (when state funds are used) and Letters of Consent (when federal funds are used) in accordance with an interagency agreement (AA-851-1A2-40) for new highway-related authorizations or previously unauthorized infrastructure. This is a larger planning issue; eventually, the FHWA and Caltrans would need to work toward including applicable portions of State Route 299 that cross BLM-administered land to be included under a FLPMA ROW or Letter of Consent.

Since the passage of FLPMA, federal access rights on BLM-administered lands are typically established under a federal reservation under Section 507 of FLPMA. Access rights under Section 507 are technically ROWs that are noted to the Land Status Records system and may be preserved as an exception in a future patent document. Prior to passage of FLPMA, federal access routes were noted in accordance with a letter of instruction found in Volume 44 Land Decisions, Page 513. As such, access roads established prior to the FLPMA are sometimes referred to as 44 L.D. 513 roads. However, Volume 44 Land Decisions, Page 513 was primarily used to protect federal investments in facilities prior to the FLPMA and was not usually associated with roads.

The Arcata FO currently administers 44 federal access ROWs, including 7 ROWs under FLPMA. The remaining 45 cases were established under Volume 44 Land Decisions, Page 513 guidance. The Redding FO administers 83 federal access ROWs, with 68 ROWs established under Volume 44 Land Decisions, Page 513. In many cases, the extents of federal access exceptions are limited due to the large areas of lands subject to patents (primarily in the form of railroad grants) prior to the formulation of policy or the recognition of a general need to reserve federal access.

Power Lines and Energy-Related Facilities, Including Renewable Power Generation

The Arcata and Redding FOs collectively administer 168 power lines and related facilities, such as substations, within the planning area. These facilities are typically aerially constructed pole lines and range from small capacity distribution lines (12 kilovolts) to larger transmission paths (500 kilovolts). FLPMA has been amended to include Section 512, "Vegetation Management, Facility Inspection, and Operations and Maintenance Relating to Electrical Transmission and Distribution of Facility Rights-of-Way." This section was added to enhance the reliability of the electric grid and to reduce the threat of wildfire damage by acknowledging it might be necessary to address conditions outside the ROW limits in an effort to prevent the incidence of wildfire.

Water Facilities

Water facilities within the planning area are typically small in scale and serve a single residence through issuance of a small-diameter pipeline (3 inches or less) ROW to transport water from a riparian source

(such as the Trinity River, which is the predominant location for water developments within the planning area) or from springs on public land. Water storage tanks are also typically associated with these ROWs and range in size from tanks to serve a single-family residence (as small as 1,200 gallons or less) to tanks for small communities (Centerville Community Services District [685,000 gallons]). ROW holders are responsible for reporting their use and ensuring they have the proper permits through the California State Water Resources Control Board.

Communication Lines

The Arcata and Redding FOs collectively administer 128 ROWs for communication use within the planning area. Many are fiber-optic cables underhung on existing power lines. Several buried lines are also present.

In a recent effort to improve internet accessibility to the public living in rural communities, Executive Order 13821, Streamlining and Expediting Requests to Locate Broadband Facilities in Rural America, was signed on January 8, 2018. A presidential memorandum, Supporting Broadband Tower Facilities in Rural America on Federal Properties Managed by the Department of the Interior, was also issued to the Secretary of the Interior, directing the Secretary of the Interior to develop a plan to increase access to communication tower facilities and other infrastructure. The Department of the Interior later released a report, Connectivity in Rural America Leveraging Public Lands for Broadband Infrastructure, in response to the presidential memorandum for the Secretary of the Interior in July 2018.

The BLM has seen an increase in ROWs in the planning area related to broadband service and the associated infrastructure (for example, communication uses) to bring high-speed internet to those living in rural communities that currently lack high-speed internet.

Reservations to Other Federal Parties

Other federal agencies may apply for and receive a ROW under Section 507 of the FLPMA. These ROWs differ from other ROWs because they may not be terminated without the consent of the head of the holding agency.

ROW Corridors

ROW corridors can be designated in accordance with FLPMA Section 503. In 1977, the Western Utility Group was formed as an ad hoc organization, primarily to support federal land use planning efforts. It was recognized that the various land management agencies in the West had widely different approaches to planning for large-scale infrastructure development projects, such as gas and power transmission lines, communication lines, highways, and ditches and canals. To facilitate consistent planning, including ROW corridors that meet at jurisdictional boundaries, the Western Utility Group published a series of Western Regional Corridor Studies (WRCSs).

Prior planning for the Arcata FO did not designate any ROW corridors, although the Arcata FO planning area had two occupied east–west corridors and one occupied north–south corridor (Western Utility Group 1986). The Redding RMP states that “designated corridors include all existing or occupied corridors delineated in the WRCS of 1986” (BLM 1993). The WRCS recommended several corridors, including a main north–south route along Interstate 5, as an occupied corridor and one unoccupied corridor through the Sacramento River Bend ACEC. This WRCS-recommended route was different from the path of the Western Area Power Administration transmission line that also travels through the

Sacramento River Bend ACEC. Currently, no recommended ROW corridors, other than the two Section 368 corridors described below, have been officially designated in the planning area.⁶

Section 368 of the Energy Policy Act of 2005 directed the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to designate energy corridors on federal lands within 11 western states (Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming) for oil, gas, and hydrogen pipelines and electricity transmission and distribution infrastructure. Accordingly, the BLM considered whether to designate locations of utility corridors for the placement of ROWs for energy transmission infrastructure during the land use planning process in a programmatic EIS (West-Wide Energy Programmatic EIS). The BLM signed the ROD in 2009, designating approximately 5,000 miles of Section 368 energy corridors on BLM-administered lands (BLM 2009). Although the corridors are considered preferred locations for energy transport projects on land managed by the BLM and the Forest Service, they are not required for use by future energy transport projects. As a result of a legal settlement that was finalized in 2012, the BLM published the West-Wide Energy Corridor Guidebook (BLM 2020a); the BLM is also required to conduct periodic corridor reviews, update agency guidance, update agency training, and complete a corridor study.

There are two designated Section 368 corridors partially or fully within the planning area: the 101-263 Eureka to Redding corridor and the 261-262 Mount Shasta corridor. The 101-263 corridor has a width of 3,500 feet, and its designated use has been identified as multimodal for electric transmission and pipelines. The 261-262 corridor has a width of 2,000 feet, and the designated use includes electric only in Redding FO's administrative boundaries. An existing transmission line and a natural gas pipeline are within the 101-263 corridor and adjacent to the corridor. Multiple electric transmission lines are within and next to the corridor. However, currently there are no authorized or pending ROWs on BLM lands that are included in the 101-263 or 261-262 corridors. Based on the BLM's last review of the Section 368 energy corridors in Regions 4, 5, and 6, which was completed in November 2020, a potential revision to the 101-263 corridor was identified to consider shifting the corridor south from milepost 14 to milepost 18, with an existing transmission line as the northern border of the corridor. The rationale for the revision is to minimize impacts on the Trinity WSR while maintaining a preferred route for potential future energy development collated within existing infrastructure (BLM 2020a).

ROW Exclusion and Avoidance Areas

The Yolla Bolly-Middle Eel wilderness area and all eligible WSR study corridors with a preliminary classification as "scenic" or "wild" are considered exclusion areas pending the conclusive action of the U.S. Congress. In certain areas, it may be advisable to designate lands as ROW avoidance or exclusion areas to protect sensitive resources. For example, the following are potential areas for consideration as ROW avoidance areas (see **Table 2-2**):

- Identified TCPs
- Ultramafic/serpentine soils
- Decomposed granite
- Biological soil crusts
- Late successional forests

⁶ Personal communication between Katie Shaw, realty specialist, BLM Redding FO, and Laura DeLio, SWCA planner, January 31, 2023

- Federally listed critical habitats
- Essential Connectivity Corridors of High Biological Value (unless specifically called out as exclusion for specific special designation areas)
- WSR “Scenic” and “Recreational” designations
- Coastal Strip
- Certain ACECs and SRMAs

Potential exclusion areas to be considered include (see **Table 2-2**):

- Designated wilderness areas and Section 603 and Section 202 WSAs
- Stringtown Mountain
- Certain ACECs
- Lands managed for wilderness characteristics as priority

Communication Site Leases—Existing Communication Sites

BLM authority and administration of communication sites is outlined in Title 43 CFR Part 2800 Subpart 2806, and the BLM Handbook 2860-I, along with application BLM Instructional Memoranda. Although administered under the ROW program, communication site uses are authorized under a “lease” document (i.e., form 2800-18 rather than form 2800-14), typically for a 20-year term. The BLM developed the communication site lease in conjunction with the Forest Service in an effort to have a unified process on federally administered sites, including rental calculation methods. Communication site leases can be issued for a variety of uses, including cellular communications, high- and low-power AM and FM radio and television broadcasting, and commercial mobile radio service. Communication sites should have their own activity-level plan for the orderly development and efficient use of space. This prevents incompatible uses, establishes technical standards to minimize cross-site interference; manages radio frequency hazards; and minimizes the encroachment of the site and related ROWs on avoidance and exclusion, restriction, and closure areas.

Prior planning documents for the planning area did not formally designate communication sites, despite the existence of past communication site plans. The following communications sites are located within the planning area:

- Cahto Peak
- South Fork Mountain
- Inks Ridge
- Hoadley Peaks
- Rattlesnake Point
- Rocky Gulch
- Crowfoot Peak
- Helena
- Sweetbriar

Other Uses

Use authorizations issued pursuant to Sections 302 of the FLPMA (43 CFR 2920) are generally used for short-term (not to exceed 3 years) uses not covered under other regulations (for example, 43 CFR 2800) and those uses that cannot be authorized under Title V of the FLPMA. Uses are granted under a lease, permit, or easement. Permits are revocable, and they are typically used to authorize activities such as filming, apiaries, and geotechnical testing.

In the planning area, a filming permit is typically short term (1–2 days) and conducted by small crews (less than 10 persons). Filming activities that meet the criteria listed in **Table 2-2** qualify for a low impact permit, or may be considered casual use and may not require a permit. The BLM processes a small volume of these case types, typically two per year, within the planning area. If a film proposal on BLM-administered lands is determined to potentially cause high impact, film permits are issued on a case-by-case basis.

The BLM currently administers four active apiary permits within the planning area. These are minimum-impact permits; they are usually for a term of 3 years and are seasonal, but they involve multiple sites. Apiary uses have the potential to conflict with high-density recreation uses; as such, they may necessitate planning to designate avoidance areas for apiary uses. The current plans do not address these potential conflict areas.

Occasionally (less than once per year), the BLM may receive a short-term permit application for soil sampling, depth-to-water testing, piezometers, or other forms of geotechnical research. This use qualifies for a minimum-impact permit; it has not presented any known conflicts and is not addressed by the current plan.

Environmental Consequences

Impacts Common to All Alternatives

Under all alternatives, land use authorizations, including ROWs, permits, and leases for power lines, pipelines, wind and solar projects, communication uses, and other uses would continue to be considered on a case-by-case basis throughout the decision area, except in areas designated as exclusion and avoidance areas. The designation of ROW (including communication site leases and ROW) exclusion and avoidance areas would identify areas within the decision area where new authorizations would not be permitted or would only be permitted with special stipulations. These designations would help to reduce the proliferation of ROWs throughout the decision area, thereby preventing unnecessary degradation to public lands and resources and allowing for improved management and protection of these natural resources.

However, the designation of ROW avoidance and exclusion areas may also result in adverse impacts on mineral development, renewable energy resources, recreation and visitor services, and travel and transportation management. Projects needing to avoid these areas would potentially require long reroutes and/or placement in areas that are more difficult or costly to develop. ROW applications could still be submitted in ROW avoidance areas; however, these projects may require special stipulations and mitigation measures to limit impacts, including but not limited to, alternatives analyses to determine that avoidance is not possible, resource surveys and reports, Standards for Boundary Evidence certificate(s), construction and reclamation engineering, long-term monitoring, special design features and limitations, special siting requirements, timing limitations, and rerouting. For applications located within TCPs and culturally important areas, the decision on whether to approve the project would need to be informed by

government-to-government consultation with appropriate Tribal governments, as applicable. These increased regulatory, design, and permitting requirements would increase the costs, level of effort, and time to process proposals, which may be schedule- or cost-prohibitive for some users.

Under all alternatives, BLM would formally designate existing communication sites that are not currently designated. Communication site plans and communication site management of land boundary plans, when needed, would also be developed for existing communication sites not currently covered under a communication site plan. Communication uses would be prohibited on Black Mountain and Stringtown Mountain under all alternatives.

Under all alternatives, the BLM would continue to manage authorized uses located within the 101-263 Eureka to Redding and 261-262 Mount Shasta Section 368 West-Wide Energy Corridors in accordance with the West-Wide Energy Programmatic EIS, Settlement Agreement, and the West-Wide Energy Corridor Guidebook. Applicants for new ROWs that meet the designated uses for the Section 368 corridors would continue to be encouraged to route their ROWs within those designated corridors. The BLM would evaluate if co-location is possible. This represents a continuation of existing management and therefore would have no impact on use authorizations.

Under all alternatives, all management actions would be subject to valid existing rights. The BLM will continue to monitor existing and future leases and/or patents to ensure the lands are used for the purposes for which they were leased and/or patented. At the discretion of the BLM Authorized Officer, the applicant would be required to submit a plan of development to include standards for boundary evidence certificate(s) and construction, operation, maintenance, and termination (removal and restoration) of the proposed facilities; the applicant would have to be bonded for such activities, if deemed necessary. Unless otherwise stated by the BLM, any activity that requires permanent or temporary roads would require construction and maintenance of those roads per the Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (commonly referred to as the Gold Book; USDI and USDA 2007), specifications in the Updated Handbook for Forest, Ranch, and Rural Roads (Pacific Watershed Associates, 2015) as necessary, and BLM specifications. If it is determined that crossing private lands is required to construct and/or operate a proposed authorized activity, the applicant/holder would be required to provide proof of secure legal access across those private lands.

If a film proposal on BLM-administered lands is determined to potentially cause high impacts, issuing a film permit would be considered on a case-by-case basis. Low-impact filming activities may be considered a casual use activity and may not require a permit if they meet certain criteria. These actions represent a continuation of existing management and therefore would have no impact on land use authorizations.

Alternative A

As shown in **Table 2-1**, under Alternative A, a total of 69,800 acres (18 percent of the decision area) would be offered some protection from ROW development, including 58,500 acres (15 percent of the decision area) managed as ROW exclusion areas and 11,300 acres (3 percent of the decision area) managed as ROW avoidance areas. Exclusion areas would include the Ishi Wilderness Area, the Yolla Bolly Contiguous WSA, and all eligible WSR study corridors with a preliminary classification of scenic or wild. Avoidance areas include all other designated WSRs, Butte Creek, and portions of the Sacramento River Management Area.

Under Alternative A, no formal process or policy encouraging co-location of ROWs would be applied. No existing communications sites would be formally designated. Communication site applications would continue to be considered on a site-specific basis on land suitable for disposal until such time as an exchange agreement is signed. Communication site plans would be developed on acquired or retained lands. The BLM would continue to authorize apiary activities, filming, and geotechnical activities on a case-by-case basis similar to how the BLM currently processes these authorizations. Therefore, no impact on these uses is anticipated.

No changes would be made to BLM's application process for water ROWs. No restrictions on new water ROWs or wells would be implemented in impaired watersheds or groundwater priority areas. The lack of protection from new water ROW development represents an adverse impact to these resources.

Alternative B

Under Alternative B, a total of 271,000 acres (71 percent of the decision area) would be offered some protection from ROW and communication site development; this is the highest acreage of any alternative and 201,200 more acres than Alternative A. The BLM would manage 135,100 acres (35 percent of the decision area) as ROW exclusion areas; this is the highest of any alternative and 76,600 more acres than Alternative A, including all the features designated under Alternative A. ROW exclusion areas proposed under Alternative B are listed in **Table 2-2**. The BLM would manage 135,900 acres (124,600 more acres than Alternative A) as ROW avoidance areas, including essential connectivity corridors of high biological value, as defined in **Section D.2.5** (Wildlife), most ACECs, and other features listed in **Table 2-2**; however, with the exception of the Chappie-Shasta OHV Area SRMA, the BLM would not manage SRMAs as ROW avoidance areas (see **Table 2-2**).

The greater acreage of ROW exclusion areas under Alternative B would help to reduce the proliferation of ROWs throughout the decision area, thereby preventing unnecessary degradation to public lands and resources and allowing for improved management and protection of these natural resources. However, Alternative B would result in the greatest impact of all alternatives on mineral development, renewable energy resources, recreation and visitor services, and travel and transportation management due to the limited acreage available for development of those uses and ROWs.

Under Alternative B, the existing communications sites listed above would be formally designated (see **Table 2-2**). Under Alternative B, ROW avoidance and exclusion areas would be applied to communication sites. Furthermore, new communication site leases or ROWs would also be prohibited outside existing sites or ROWs in VRM Class I and II areas, LSRs, and known Northern Spotted Owl site 0.5-mile buffer zones (unless the applicant can show that activities would not have adverse impacts on these resources) (see **Table 2-2**). These prohibitions would result in increased protections and therefore a beneficial impact on these resources. Restricting the allowable locations for new communication site leases would reduce land use conflicts by grouping similar facilities and activities in specific areas and away from conflicting developments and activities, resulting in a beneficial impact on the manageability of BLM lands.

Under Alternative B, ROW and communication site applicants would be encouraged to first consider co-location of new ROWs within existing communications, utility, or transportation ROW corridors and sites with compatible use. This would reduce the proliferation of ROWs and communications sites across the landscape to a greater degree than Alternative A. Encouraging new ROWs and communications sites

to be located along existing ROWs, existing communications sites, designated corridors, and preferred roads and trails would clearly define for applicants where such uses are desired, therefore reducing costs, timelines, and regulatory barriers for applicants. Co-locating ROWs and communications sites could also ease the process for construction and maintenance. However, the existence of ROW corridors could limit options on design or more preferable locations, would place additional requirements on ROW applicants, and would increase management efforts and costs related to proposals submitted by ROW applicants.

Under Alternative B, new water ROW authorizations would be considered on a case-by-case basis. Applicants would need to comply with guidance from other applicable regulatory agencies. No new consumptive water ROWs would be issued in watersheds designated as impaired under the Clean Water Act section 303(d). No new wells would be authorized in areas where groundwater has been determined to be contaminated by the Regional Water Quality Control boards or in areas designated as High or Medium priority under the Sustainable Groundwater Management Act unless Groundwater Sustainability Plans have been developed and proposed wells are able to conform with these plans. Therefore, impaired waters and groundwater would be offered greater protection from new water ROWs under Alternative B, resulting in a greater beneficial impact to water quality and groundwater compared to Alternative A.

Under Alternative B, the BLM would continue to authorize apiary activities on a case-by-case basis, which is similar to under Alternative A. However, additional restrictions would be applied to prohibit new apiary activities on dunes, within essential connectivity corridors of high biological value, within 2.5 miles of sensitive species habitat or large populations of nonnative and invasive species, or within 2.5 miles of critically imperiled vegetation. These restrictions would result in less available acreage for apiary authorizations compared with Alternative A.

Alternative C

Under Alternative C, a total of 260,500 acres (68 percent of the decision area) would be offered some protection from ROW and communication site development; this is 190,700 more acres than under Alternative A. The BLM would manage approximately 94,100 acres (25 percent of the decision area) as ROW exclusion areas (35,600 more acres than Alternative A) and 166,400 acres (44 percent of the decision area) as ROW avoidance areas (155,100 more acres than Alternative A). Areas such as essential connectivity corridors and certain ACECs would be offered less protection from ROW and communication site development under Alternative C.

The higher acreage of avoidance areas compared with other alternatives would potentially result in a greater impact on ROW applicants because a larger portion of the planning area would be subject to increased regulatory, design, and permitting requirements as discussed under Impacts to All Alternatives.

Under Alternative C, apiary activities would continue to be authorized on a case-by-case basis, which is similar to under Alternative A. However, additional restrictions would be applied to prohibit new apiary activities within OHV open areas, within 300 feet of designated trails and trailheads, within campgrounds, and within recreation facilities, resulting in less available acreage for apiary authorizations compared with Alternative A.

Under Alternative C, new water ROW authorizations would be considered on a case-by-case basis, similar to Alternative B. Applicants would need to comply with guidance from other applicable regulatory

agencies. No restrictions on new water ROWs or wells would be implemented in impaired watersheds or groundwater priority areas. Therefore, impacts to water resources and groundwater would be similar to those under Alternative A.

Under Alternative C, the same existing communications sites would be formally designated as described under Alternative B. Applications for communications sites would be considered on a case-by-case basis, with the exception of Black Mountain and Stringtown Mountain, where communication uses would be prohibited. Alternative C would be less restrictive and more open to land use authorizations than Alternative B. Alternative C would encourage, but not necessarily require, co-location of new communication uses with existing sites within VRM Class I and II areas, LSRs, and known northern spotted owl buffer zones. This would result in a potentially greater adverse impact on these resources compared with Alternative B.

Alternative D

Under Alternative D, 273,300 acres (72 percent of the decision area) would be offered some protection from ROW development and communication site development; this is 203,500 more acres than under Alternative A. Approximately 108,100 acres (28 percent of the decision area) would be managed as ROW exclusion areas (49,600 more acres than under Alternative A). This includes the same areas listed under Alternative B, with the following exceptions: Gillham Butte ACEC would be managed as a ROW avoidance area rather than exclusion, and newly acquired lands contiguous to the publicly owned dune properties in the Ma-le'l area would not be included in the Ma-le'l Dunes ACEC, and therefore would not be included in the ROW exclusion area (see **Table 2-2**). Approximately 165,200 acres (43 percent of the decision area) would be managed as ROW avoidance areas (153,900 more acres than Alternative A), including Gilham Butte ACEC; most other ACECs; four SRMAs, and other features listed in **Table 2-2**. Alternative D would result in similar impacts as Alternative B.

Under Alternative D, apiary activities would continue to be authorized on a case-by-case basis with the same restrictions and impacts as under Alternative C, with the exception that existing permits would be terminated if applicants no longer use those sites. Therefore, less available acreage would be available for apiary activities, compared with Alternative A.

Alternative D would have the same impacts with regard to new and existing communications sites as Alternative B.

Under Alternative D, new water ROW authorizations would be considered on a case-by-case basis, similar to Alternative B. Applicants would need to comply with guidance from other applicable regulatory agencies. BLM would consider the impact to quality and quantity of water in downstream affected resources. Therefore, impaired waters and groundwater would be offered greater protection from new water ROWs under Alternative D, resulting in a greater beneficial impact to water quality and groundwater compared to Alternative A.

Cumulative Impacts

The cumulative impact analysis area for use authorizations consists of the planning area. Past, present, and reasonably foreseeable future actions to be considered include those occurring since 1990 through the life of the proposed plan (**Appendix B**).

The Arcata and Redding FOs receive 30 to 40 new applications for linear ROWs and other uses (for example, residential driveways, utility lines, access roads, and waterlines) within the planning area each year. Of this total, approximately 20 are applications for new access ROWs (roads) per year. Some of these are new authorizations for existing roads that were previously unauthorized. It is likely that improvements to major transportation infrastructure will be ongoing. This may include but is not limited to bridge replacements, disposal sites (excess fill materials generated from highway improvement projects or naturally occurring slides), and drainage improvements. The number of new developments related to residential use that would precipitate small access ROWs is expected to remain static.

The FOs are likely to see an increase in ROWs relating to broadband service and the associated infrastructure (for example, communication uses) to bring high-speed internet to those living in rural communities that currently lack high-speed internet. Broadband projects, such as the Digital 299 Broadband Project, the Middle Mile Initiative, and the Klamath River Rural Broadband Initiative, as well as utility undergrounding projects, may contribute to additional ROW proliferation across the landscape within the planning area. However, these projects will be encouraged to co-locate along existing roadways, ROWs, and easements consistent with the BLM's policies under all alternatives. Therefore, the implementation of any alternative would result in minimal incremental impacts when combined with present and future broadband and utility undergrounding projects.

Trespass cases that involve linear features, such as roads or power lines, and temporary improvements that are non-linear, such as agricultural plantings, may be resolved by authorizing the activity through issuance of ROWs or leases. The need to use these forms of authorizations to resolve trespass cases will continue; however, this need will represent a relatively small percentage of the overall demand (one to two cases per year).

Applications for new communication sites will likely be located within existing communication sites, and it is BLM policy to encourage this co-location. Applications for uses outside these established sites are not anticipated. Each site will likely receive one to three applications for new and separate uses in the foreseeable future. This demand is somewhat mitigated by the ability of current users to sublease and thereby host additional users within existing facilities. If new communication site plans are developed for the existing sites (South Fork Mountain and Hoadley Peak), this would increase co-location opportunities, thereby reducing the construction of new communication sites that would reduce potential impacts on natural resources on BLM lands.

The FOs will continue to receive a moderate demand for short-term land use authorizations for filming, apiary, and geotechnical survey permits. This demand is anticipated to average approximately three to five cases per year.

D.3.4 Renewable Energy

Issue Statements

- How would the alternatives affect biomass resources?
- How would the alternatives affect solar resources?
- How would the alternatives affect wind resources?
- How would the alternatives affect hydropower resources?
- How would the alternatives affect geothermal resources?

Affected Environment

Land use authorizations for renewable energy such as wind, solar, hydropower, and biomass are analyzed separately from land use authorizations (**Section D.3.3**) due to the potential scale and complexity of these activities. Prior BLM planning documents that cover the planning area did not specifically address renewable energy. Factors that impact renewable energy include potential use or avoidance areas, general planning guidance for the various types of renewable energy authorizations, and specific actions related to biomass harvesting. The factors that determine the potential for use are the proximity of renewable power resources (for example, sun, wind, water, and geothermal) to transmission infrastructure or areas of concentrated local demand, such as residential and commercial uses.

The analysis area for renewable energy consists of all BLM-administered lands in the planning area (the decision area).

Biomass

According to the National Renewable Energy Laboratory (NREL), the planning area has several counties with an ability to produce over 100 tons/per acre/per year of forest residues, such as unused portions of trees and other removable material left behind after carrying out silviculture operations (NREL 2014). This estimate includes the portion of residue resulting from silvicultural operations or site conversion (65 percent logging removal and 50 percent removal of other materials) while maintaining sufficient biomass to maintain ecological function. Despite this high level of production and a local market for the product at the Wheelabrator Shasta wood-fired power plant (58-MW generating capacity) located near Anderson, California, there only has been minimal delivery of biomass from public lands for power production. There are also three idle biomass power plants located in Humboldt County (DG Fairhaven Power—Samoa, Blue Lake, and Scotia Plants). Typically, biomass is supplied from public lands as a result of forest health projects or similar activities, not through an authorization from the lands and realty program. Biomass utilization is not limited to biomass-specific sites. Other sites, such as local sawmills, could also take in biomass from forest product sales. Activities such as silviculture, commercial forest product harvesting, forest development projects, and fuels reduction that involve vegetation clearing/modification create opportunities for residual biomass production, resulting in a beneficial impact on biomass production.

Solar

The Approved Resource Management Plan Amendments/ROD for Solar Energy Development in Six Southwestern States (BLM 2012a) identify 32 categories of BLM-administered lands that are excluded from utility-scale (greater than 20 MW capacity) solar energy development, including areas with solar insolation levels less than 6.5 kilowatt hours per square meter per day (BLM 2012a). Lands administered by the Redding FO are almost completely mapped as areas with the potential to provide 5.5 to 6.0 kilowatt hours per square meter for photovoltaics, according to the NREL (NREL 2018). Lands administered by the Arcata FO range from 4.5 to 5.5 kilowatt hours per square meter, depending on topography and distance from the coast. Based on the 2012 Solar PEIS and ROD, all lands within the planning area are excluded with regard to variance areas; there are no lands identified as developable acreage areas in solar energy zones (BLM 2012a).

In 2018, the Redding FO received an application for a small-scale solar project in Butte County, but the application was later denied for not providing additional information. Other than the 2018 application, the FOs have received no other applications for solar-power facilities or related testing. No solar ROWs have been issued or are pending within the planning area.

Wind

No wind energy ROWs have been issued or are pending within the planning area. The BLM received one application for multiple wind power testing locations from Padoma Wind Power LLC in 2010. The application was withdrawn later that year and no testing or development was authorized. Lands within the planning area have the potential for commercial wind power development according to mapping by NREL (NREL 2017). These lands are primarily on upper elevations of north-south running ridgelines. The highest potential locations on BLM-administered lands are in Siskiyou County west of Gazelle.

In 2005, the BLM, with assistance from the Department of Energy, completed the Final Programmatic EIS on Wind Energy Development on BLM-Administered Lands in the Western United States (Wind PEIS) and the ROD (BLM 2005d), which identified BLM-administered lands in 11 western states, including California, to administer the development of wind energy resources and evaluate associated land use plan amendments. In the analysis, it was identified that none of the land use plans in California were proposed for amendment under the Wind PEIS (BLM 2005d). The lands within the planning area have been classified as having a low wind resource level with some exclusion areas, according to the NREL-prepared maps at that time.

In 2016, the BLM, with assistance from Argonne National Laboratory, prepared the West-Wide Wind Mapping Project. The project report identified wind exclusion areas (represented as ROW exclusion areas for the purposes of this analysis), lands with potentially developable wind resources (that is, lands with wind speeds of 5 meters per second or greater), and low wind resources on BLM-administered lands (Argonne National Laboratory 2016a). Based on data from the West-Wide Wind Mapping Project, approximately 78,600 acres (21 percent) of the decision area contain potentially developable wind resources (Argonne National Laboratory 2016b). The project further identified additional BLM-administered lands with potentially developable wind resources where the presence of certain environmental resources or land use restrictions may require relatively more extensive levels of review of proposed wind energy projects. These lands are represented as ROW avoidance areas for the purposes of this analysis.

Hydropower/FERC Ancillary ROWs

The FERC issues licenses for nonfederal hydropower projects over 10 MW pursuant to the Federal Power Act. FERC also has an exemption process for projects under 10 MW and can license ancillary facilities, such as power lines, tunnels, and roads, on public lands. These ancillary facilities would typically be documented through a Federal Power Act withdrawal. Over the years, some FERC-licensed ancillary facilities have been converted to FLPMA ROWs, where appropriate.

There are several areas where FERC-licensed activity has been located with a concentration of use in the Forks of Butte Area. The Arcata FO administers one FERC ancillary transmission line, and the Redding FO has six nonfederal hydropower facilities.

Hydropower has numerous benefits, such as power production with few to no greenhouse gas emissions, cost efficiency, and flexible power generation. Hydropower can also result in changes in flow regime, water quality, and water temperature, which can result in adverse or, in some cases, beneficial impacts to fisheries, fish migration patterns, and biological diversity depending on the operational parameters adopted (NREL 2012). For example, the hydropower project on South Fork Battle Creek is currently being decommissioned to increase fish migration and improve habitat as part of the larger Battle Creek Salmon

and Steelhead Restoration Project. The project is restoring 42 miles of habitat on Battle Creek and an additional 6 miles on Battle Creek tributaries. Conversely, some hydropower projects are designed to return water to source streams at lower temperatures than would occur naturally or augment return flows with diversions from other water sources, which can create favorable conditions for certain fish species (NOAA Fisheries 2024). FERC and other resource agencies strictly regulate hydroelectric facilities to ensure that any environmental impacts are minimized.

In addition to small nonfederal hydropower projects, there are large-scale projects constructed under a FERC license to the State of California (Oroville) or under federal authorities, such as the Newlands Reclamation Act of 1902, and operated by the Bureau of Reclamation. These large projects have a combination of ancillary facilities or inundation zones located on public lands. These activities are generally located in the vicinity of the Shasta/Keswick, Lewiston, and Oroville dams, although irrigation-related facilities may be located at some distance, such as the Clear Creek Tunnel. In addition to these facilities, the Bureau of Reclamation also maintains Buckhorn Reservoir, which was constructed as a sediment-collection dam to restrict sediment flows from the Grass Valley Creek watershed into the Trinity River. Hydropower projects on the Klamath River also include the Copco and Iron Gate dams, which are scheduled for decommissioning.

The existing planning documents contain limited guidance on hydropower development despite the high potential and the level of development of hydropower within the region. The 1993 Redding RMP (page 17) states, “Potential water power storage reservoir sites under a land withdrawal will continue to be managed for water power values. Exceptions include withdrawals for water power or storage on streams which become components of the National Wild and Scenic River System...” Future decisions may be needed to determine the degree to which sites identified for future development and withdrawn under power site withdrawals are still needed given the current energy production market. Most hydropower development on or adjacent to public lands is authorized through a FERC license. FERC issues licenses for nonfederal hydropower projects over 10 MW pursuant to the Federal Power Act.

Geothermal

Active volcanoes in the Cascade Range, Lassen Peak, Mount Shasta, and the dozens of thermal springs within the confines of the planning area indicate the presence of geothermal resources. The Lassen Known Geothermal Resource Area has been identified east of the village of Mineral, California and south of Lassen Volcanic National Park. The Final Programmatic EIS for Geothermal Leasing in the Western United States evaluates various alternatives for allocating lands as being closed or available for geothermal leasing and analyzes stipulations to protect sensitive resources. The ROD for the Geothermal Programmatic EIS (BLM 2008d) amended existing plans, including the 1993 Redding RMP, to facilitate geothermal leasing on federal mineral estate. The Programmatic EIS (BLM 2008d) shows commercially viable geothermal capacity for electrical generation in high potential areas. Specifically, the Arcata FO has 83,436 acres with geothermal potential and the Redding FO has 51,209 acres with geothermal potential. In the Redding FO, the Morgan Springs-Growler Springs has 50 MW projected capacity for electrical production and the Mount Shasta Area has 240 MW projected capacity.

The Mineral and Land Records System is a database that tracks applications and authorizations under a number of authorities, including ROWs and geothermal leases. Mineral and Land Records System data show there are no leases or licenses for geothermal exploration or development on BLM-administered lands in the planning area, nor have any been applied for in over 20 years. There is no electricity production

from any geothermal resource development within the planning area. Most of the planning area is open to geothermal resource leasing. The existing Arcata RMP prevented geothermal resource leasing and development in the Northern California Coast Range Preserve, subject to the exclusions identified above. The existing Redding RMP placed no surface occupancy restrictions on any geothermal resource leasing in the following areas: eligible WSR corridors, the Grass Valley Watershed, Interlakes SRMA, 100-year floodplain of tributaries east of the Sacramento River, Lower Clear Creek and Muletown 100-year floodplain, Sacramento Island, Cottonwood Creek and Sacramento River parcels, Bend Area, Battle Creek below Manton Road, Deer Creek, Upper Ridge Nature Preserve, Baker Cypress Research Natural Area/ACEC, and all lands withdrawn from locatable mineral entry.

Wave and Offshore Energy Development

The Bureau of Ocean Energy and Management (BOEM) has jurisdiction for wave and offshore energy development and would be the responsible agency for issuance of renewable energy leases, easements, and ROWs pertaining to wave and offshore energy development projects. There are currently no activities related to wave and offshore energy development located directly offshore from the Coastal Strip and lands administered by the Arcata FO.

Environmental Consequences

Impacts Common to All Alternatives

Under all alternatives, ROW exclusion and avoidance areas (see **Table 2-2**) and other uses incompatible with renewable energy sites would limit renewable energy development within the decision area. In ROW avoidance areas, the BLM could apply siting restrictions, design requirements, and other mitigation measures to renewable energy projects, which could limit the number of turbines, panels, and generating capacity to varying degrees. However, due to the lack of high potential areas within the decision area and the low demand for renewable energy development, this impact is expected to be minimal. Renewable energy development applications would be prioritized on lands near existing or planned power corridors where potential for solar or wind energy is suitable and resource concerns are low. All new applications would be required to complete site-specific NEPA analysis and would follow current guidance and regulations. No additional ROW corridors or wind or solar leasing areas would be officially designated under any alternative.

Hydropower

Under all alternatives, potential waterpower and storage reservoir sites under a land withdrawal/classification would continue to be managed for waterpower values (see **Section D.3.2**, Land Tenure). The BLM is required to honor prior and existing rights; therefore, any existing withdrawals or permits for hydropower or storage projects would be recommended by the BLM for extension/renewal.

In the limited cases where small hydropower projects are currently located within corridors identified as eligible or suitable for inclusion in the NWSRS, the BLM would, within its authorities, protect the values which make the river eligible or suitable during the relicensing processes, while honoring the prior existing rights and withdrawals located in the corridors. Thus, it is anticipated that existing hydropower generation facilities would not be impacted under any alternative.

New applications for hydropower or storage projects would not necessarily be prohibited on, upstream from, or downstream from stream segments that the BLM has determined eligible or suitable for inclusion in the NWSRS provided that these projects would not adversely affect the free-flowing nature, ORVs, or

tentative classification of an eligible or suitable WSR segment. When considering impacts to hydropower, management across alternatives as eligible or suitable does not change these impacts, but the miles of segments managed as eligible or suitable could impact future hydropower production.

Wind

Under all alternatives, wind energy applications would be considered on a case-by-case basis and in accordance with the Wind PEIS and ROD (BLM 2005d).

Biomass

The BLM would provide opportunities for harvest and collection of biomass from public lands to promote and manage for forest health (see **Section D.3.1**, Forestry). Activities such as silviculture, commercial forest product harvesting, forest development projects, and fuels reduction that involve vegetation clearing/modification would continue to facilitate opportunities for residual biomass production.

Utility-Scale Solar

The Solar PEIS and ROD did not identify any solar energy zones suitable for utility-scale solar development in the decision area. There are no lands identified as developable acreage areas in solar energy zones (BLM 2012a). Due to the limited solar energy potential available on BLM-administered lands in the planning area, utility-scale solar energy development in the decision area is unlikely under any alternative. Therefore, impacts related to solar energy are limited to small-scale solar development (discussed below) and no impacts related to utility-scale solar development are anticipated under any alternative.

Geothermal

Geothermal energy is unlikely to be developed anywhere within the planning area on BLM-administered lands or mineral estate in the next 20 years. No electrical production via geothermal resources has been projected for any specific areas in the decision area under any alternative. Geothermal off-lease proposals (which include geothermal exploration outside the bounds of an active lease) would continue to be considered throughout the decision area on a case-by-case basis if compatible with other resource management requirements. Any proposals for geothermal development on BLM-administered lands would be processed under leasing regulations for geothermal resources, and stipulations, mitigation measures, and BMPs outlined in the ROD for the Geothermal Programmatic EIS would be applied as appropriate (BLM 2008d). Any geothermal leases would be managed according to geothermal leasing requirements described in **Section D.3.5** (Nonrenewable Energy and Minerals) and ROW requirements described in **Section D.3.3** (Land Use Authorizations). Geothermal lease management and impacts would be the same under all alternatives and are therefore dismissed from further analysis below.

Wave and Offshore Energy Development

Under all alternatives, the BLM would collaborate and coordinate with the BOEM to ensure that any wave or offshore energy development actions would be compatible with existing uses on BLM lands, management, and protections and special designations of coastal lands. The BLM would coordinate with BOEM to address actions with the potential to adversely impact natural and cultural resources, including actions with potential to impair or impede coastal access.

Alternative A

Alternative A represents a continuation of existing land classifications. As discussed in **Section D.3.3** (Land Use Authorizations) and shown in **Table 2-1**, under Alternative A, a total of 58,500 acres (15 percent) of the decision area would be managed as ROW exclusion areas and 11,300 acres (3 percent) of the decision area would be managed as ROW avoidance areas with moderate to high levels of siting considerations, resulting in 312,000 acres (82 percent) of the decision area that would be open to renewable energy development with minimal siting considerations.

Wind and Solar

The BLM management of existing ROW exclusion and avoidance areas would continue to preclude or limit wind and solar energy development similar to existing conditions. Small-scale solar and wind project applications would be processed as ROW applications on a case-by-case basis and would be managed as described in **Section D.3.3** (Land Use Authorizations). The BLM would be required to follow current guidance and regulations and complete the NEPA process for new applications. Alternative A would have no impact on wind energy development.

Biomass

No specific management actions for biomass for power production have been prescribed in the existing planning documents for the decision area. The majority of available commercial forest land would continue to be managed as restricted with the goal of maintaining or improving a sustained yield of commercial forest products and/or the enhancement of other resource values as applicable. Biomass would continue to be supplied from public lands as a byproduct of forest health projects, ROW maintenance, new ROW authorizations, and commercial forest product harvest, not through authorizations from the lands and realty program. Therefore, Alternative A would have no impact on biomass energy production within the decision area.

Hydropower

Under Alternative A, 201.7 miles of river segments would be managed as eligible, and a 0.1-mile segment would continue to be managed as suitable for inclusion in the NWFSRS. These river segments would be subject to hydropower development restrictions as discussed above under *Impacts Common to All Alternatives*.

Alternative B

As discussed in **Section D.3.3** (Land Use Authorizations) and shown in **Table 2-1**, under Alternative B, a total of 135,100 acres (35 percent) of the decision area would be managed as ROW exclusion areas (20 percent more than Alternative A) and 135,900 acres (36 percent) of the decision area would be managed as ROW avoidance areas with moderate to high levels of siting considerations (33 percent more than Alternative A). Overall, Alternative B would result in 110,800 acres (29 percent) of the decision area that would be open to renewable energy development with minimal siting considerations.

Wind and Solar

As discussed under *Impacts Common to All Alternatives*, no utility-scale solar development is anticipated in the decision area. However, under Alternative B, solar developments of less than 20 MW would be considered in the decision area if they are determined to be consistent with the land use management prescription and other management decisions for the surrounding area. Solar development would be

prioritized and encouraged on lands near existing or planned power corridors such as Section 368 corridors (see **Section D.3.3**, Land Use Authorizations) where potential for solar energy is suitable and has low resource concerns. All small-scale solar facilities would be subject to site-specific NEPA analysis. However, given the low solar potential and the low demand for solar development on BLM-administered land within the planning area, the reduced acreage available to solar development would not result in adverse impacts on solar energy development.

Under Alternative B, wind applications would be considered on a case-by-case basis and in accordance with the exclusions listed in the Wind PEIS and ROD and West-Wide Wind Mapping Project. In addition to the exclusions listed in the Wind PEIS, the BLM would also categorize the following feature types as wind energy exclusion areas:

- Late-successional reserves
- Lands with wilderness characteristics managed as a priority over other multiple uses
- ACECs with cultural values
- Riparian management areas
- Wetlands and waters of the US
- Habitat supporting waterfowl (that is, vernal pools, emergent wet marsh, riparian areas, and fens)
- Serpentine soils
- WSAs, designated wilderness, and WSRs
- National Scenic and Historic Trails
- ROW exclusion areas
- VRM Class I and II areas

Lands acquired with federal funds for conservation purposesUnder Alternative B, a total of 72,400 acres of VRM Class II areas that would otherwise be designated as ROW avoidance areas would be treated as exclusion areas specifically for wind development, resulting in a total of 207,500 acres (54 percent) of the decision area that would be fully excluded from wind development (see **Table 2-1**). The increased acreage of ROW exclusion and avoidance areas, VRM Class II areas, and other uses that are categorized as wind exclusion areas or subject to higher levels of siting considerations would result in a greater adverse impact on wind energy development compared with Alternative A.

Biomass

Under Alternative B, biomass permits and ROWs would be considered on a case-by-case basis, resulting in a beneficial impact on biomass energy production compared with Alternative A. Sales of biomass would be managed according to management described in **Section D.3.1** (Forestry) and any associated ROWs would be managed as described in **Section D.3.3** (Land Use Authorizations). The BLM would consider biomass permits to allow for the development of biomass products such as biochar where technology exists to develop those products. Biomass treatments would be prioritized in areas close to biomass plants, such as the Wheelabrator wood-fired power plant near Anderson, California, and the Samoa, Blue Lake, and Scotia Plants in Humboldt County as practicable to support economic development. Where practicable, biomass treatments would be planned and executed in conjunction with forest development projects (see **Section D.3.1**, Forestry). By considering biomass permits and ROWs on a case-by-case

basis, Alternative B would result in an overall beneficial impact on biomass production in the decision area compared with Alternative A.

Hydropower

Under Alternative B, 201.7 miles of river segments would be managed as suitable for inclusion in the NWSRS. These river segments would be subject to hydropower development restrictions as discussed above under *Impacts Common to All Alternatives*. Impacts would be the same as those described under Alternative A.

Under Alternative B, in areas inside and outside of suitable WSR corridors, non-FERC regulated, small-scale (<10 MW) hydropower applications would be considered on a case-by-case basis provided they would not impede fish passage, wildlife access to water, or basic stream functionality that cannot be mitigated or if they impact BLM's ability to manage their surface lands through inundation or other means. Therefore, Alternative B would limit opportunities for new hydropower projects compared with Alternative A.

Alternative C

Under Alternative C, a total of 94,100 acres (25 percent of the decision area) would be managed as ROW exclusion areas (10 percent more than Alternative A) and 166,400 acres (44 percent of the decision area) would be managed as ROW avoidance areas with moderate to high levels of siting considerations (41 percent more than Alternative A; see **Table 2-1**). Overall, Alternative C would result in 121,300 acres (32 percent of the decision area) that would be open to renewable energy development with minimal siting considerations, 50 percent less than under Alternative A.

Wind and Solar

Management of and impacts on solar energy resources under Alternative C would be similar to those discussed under Alternative B.

Under Alternative C, wind authorizations would adhere to the same exclusions as under Alternative B. Under Alternative C, many ACEC designations would not be retained, potentially opening those areas up to wind energy development. Most lands with wilderness characteristics under Alternative C would also be managed to allow for other multiple uses, potentially to include wind development. However, many of these ACECs and lands with wilderness characteristics would continue to be defined as ROW avoidance or exclusion areas due to other characteristics. Under Alternative C, VRM Class II areas that would otherwise be designated as ROW avoidance areas would be treated as exclusion areas specifically for wind development, resulting in a total of 115,000 acres (30 percent) of the decision area (8 percent more than Alternative A) that would be fully excluded from wind development. Alternative C would, therefore, result in an overall decrease in acreage of lands desirable for wind development compared with existing conditions. Therefore, Alternative C would result in adverse impacts on wind energy development to a greater extent than Alternative A.

Biomass

Under Alternative C, management and impacts related to biomass production would be similar to those discussed under Alternative B.

Hydropower

Under Alternative C, 14.2 miles of river segments would be managed as suitable for inclusion in the NWSRS, which would be 187.5 miles less than under Alternative A. These river segments would be subject to hydropower development restrictions as discussed above under *Impacts Common to All Alternatives*.

Under Alternative C, in areas inside and outside of suitable WSR corridors, non-FERC regulated, small-scale (<10 MW) hydropower applications would be authorized on a case-by-case basis in accordance with laws and regulations in place at the time of application. There would not be a change to impacts on hydropower development under Alternative C as compared with Alternative A.

Alternative D

Under Alternative D, a total of 108,100 acres (28 percent of the decision area) would be managed as ROW exclusion areas (13 percent more than Alternative A) and 165,200 acres (43 percent of the decision area) would be managed as ROW avoidance areas with moderate to high levels of siting considerations (40 percent more than Alternative A; see **Table 2-1**). Overall, Alternative D would result in a total acreage of 108,900 acres (28 percent of the decision area) that would be open to renewable energy development with minimal siting considerations, 54 percent less than under Alternative A.

Wind and Solar

Management of and impacts on solar and wind energy resources under Alternative D would be similar to those discussed under Alternative B. Under Alternative D, 61,600 acres of VRM Class II areas that would otherwise be designated as ROW avoidance areas would be treated as exclusion areas for wind development, resulting in a total of 169,700 acres (44 percent) of the decision area that would be fully excluded from wind development.

Biomass

Under Alternative D, management of and impacts related to biomass production would be similar to those discussed under Alternative B.

Hydropower

Under Alternative D, 147.2 miles of river segments would be managed as suitable for inclusion in the NWSRS, which would be 54.4 miles less than under Alternative A. These river segments would be subject to hydropower development restrictions as discussed above under *Impacts Common to All Alternatives*.

In areas inside and outside of suitable WSR corridors, non-FERC regulated, small-scale (<10 MW) hydropower applications would be authorized as described under Alternative B. However, there would be 54.4 fewer miles of suitable river segments under Alternative D as compared to Alternative B.

Cumulative Impacts

Biomass production may increase if the number and extent of fuel reduction projects expand. Demand for biomass material also may increase if demand for alternative energy sources grows and incentives for biomass utilization promote economic opportunities. Biomass also plays an important role in the SFP portfolio of the decision area. Demand for biomass is expected to grow, as alternative energy becomes more common. As discussed in **Section D.2.8** (Wildland Fire Management), there are currently multiple wildland fire management projects proposed within the planning area, including a range of vegetation and fuel treatments that could result in biomass harvesting. Similar projects are occurring nearby on the

Klamath National Forest. Continued vegetation management for wildfire resilience and infrastructure maintenance is proposed under all alternatives. However, alternatives that encourage and prioritize fuels management and vegetation removal/modification, such as Alternative C, could result in an indirect, incremental, beneficial impact on biomass production for energy within the planning area to a greater degree than other alternatives.

The cost of development and operation of renewable power sources continues to fall, particularly for photovoltaics, but also for the other primary forms of new renewable energy production (concentrated solar and wind). Locally, hydropower is a well-established form of renewable energy production that moderates cost influences while providing collateral irrigation and flood-control benefits. Distributed generation in the form of rooftop solar is reaching cost parity with other forms of power generation. Despite the cost reduction on global and national scales, applications for new wind and solar development have not been received for lands within the planning area. There are areas identified with at least moderate potential for solar or wind energy resources within the planning area, such as the higher elevations of Siskiyou County near Interstate 5 (wind) and the northern sections of the Central Valley (solar); however, there are no known areas with high potential use for solar or wind within the planning area.

Executive Order 14008, Tackling the Climate Crisis at Home and Abroad, issued in 2021, directs the DOI to review processes for siting and permitting renewable energy projects on federally administered lands with a goal of increasing renewable energy production and related jobs while ensuring protection for natural resources. The Energy Act of 2020 mandates the DOI to authorize a total of at least 25 gigawatts of electricity production from wind, solar, and geothermal energy projects on federal lands by 2025. In 2022, the BLM stated its intent to prepare an updated PEIS for solar energy development in western states, including California, by June 2024 (2024 Western Solar PEIS) (BLM 2022f). This PEIS will update and build upon the BLM's 2012 Solar PEIS and ROD in response to Executive Order 14008 and the Energy Act of 2020. The 2024 Western Solar PEIS may require amendments to existing RMPs and may also result in updated mapping or modeling for solar potential and developable acreage for solar projects within the planning area and throughout California and neighboring states. At this time, it is not possible to predict changes in solar potential or increases in developable acreage for solar development within the planning area until updated studies are completed. However, given the limited potential for solar and wind resources present within the planning area, it is anticipated that public lands within other parts of California and neighboring states will continue to provide more desirable solar and wind resources and developable acreage in the future. This will contribute to the trending low demand for solar and wind development projects within the planning area. Therefore, it is unlikely that solar and wind development within the planning area under any alternative will contribute meaningfully towards achieving the goals of Executive Order 14008 and the Energy Act.

D.3.5 Nonrenewable Energy and Minerals

Issue Statements

- How would the alternatives affect leasable minerals?
- How would the alternatives affect locatable minerals?
- How would the alternatives affect mineral materials?

Leasable Minerals (Fluid and Nonenergy Minerals)

Affected Environment

There are no leases or applications for oil and gas leasing on BLM-administered land or mineral estate in the planning area, nor have there been any applications in the last 20 years. Future development potential is low. Several identified small oil and gas fields are present within the planning area, but there are no active or idle oil or gas wells in the planning area. The Arcata FO has four oil and gas fields, while the Redding FO has 12 (see BLM 2021a, Section 2.3.4 for a list of oil and gas fields by FO). None of these oil and gas deposits have a large volume of recoverable reserves and they are unlikely to be developed during the life of the plan; however, it is conceivable that if demand for energy resources increases that some of these deposits could potentially become a target for exploration, leasing, and development.

There is no ongoing or historical nonenergy leasable mineral development, and there are no known economically viable nonenergy leasable mineral deposits within the planning area (BLM 2021a). Future demand for nonenergy leasable minerals will likely increase over time in parts of California and the West, but this is not anticipated to result in activity within the planning area. Any interest in hardrock minerals within the planning area would likely be for gold or base metals (locatable minerals) and would depend on increases in metal prices and the regulatory restrictions placed on exploration and mining.

Environmental Consequences

Impacts Common to All Alternatives

While the alternatives identify areas unavailable for mineral leasing and stipulations that would be applied to mineral leases in areas that are available for mineral leasing, because of low potential and lack of reasonably foreseeable development, there would be no realized difference between the alternatives in terms of impacts on fluid or nonenergy solid leasable minerals. Any exploration, leasing, or development of leasable mineral resources that may occur could result in impacts on the availability of leasable mineral resources in the planning area; however, because of low potential for development, impacts cannot be quantified at this time. Any exploration leasing and development proposals would contain specific project details to be analyzed in future NEPA documents for impacts on leasable mineral resources. See **Table B-1** in **Appendix B** for the acres available and unavailable for leasing and the acres subject to no surface occupancy, controlled surface use, and timing limitation stipulations by alternative.

Cumulative Impacts

The impacts associated with historic, ongoing and likely future development of oil and gas resources in and near the planning area, as well as any future development of oil and gas, and nonenergy leasable minerals that may occur in the planning area under any of the alternatives would result in cumulative impacts on the production, consumptive use, and availability of leasable mineral resources for future use. Because no development of leasable minerals is anticipated under any of the alternatives, there would be no contribution from the NCIP to cumulative impacts across all alternatives.

Locatable Minerals

Affected Environment

Gold mining in the planning area has long-running historical importance and can be traced back to the California gold rush starting in 1848. During the gold rush, hundreds of thousands of settlers migrated to California, forming towns spanning the state. When gold was discovered in the Trinity Mountains, settlers flocked to the area, founding and enlarging settlements and expanding local economies (Clarke Historical

Museum 2018). Many of the methods used by casual use miners today are the same techniques that were used in the beginning of gold mining in the area.

Casual use is defined in 43 CFR 3809.5 as activities ordinarily resulting in no or negligible disturbance of public lands or resources. For example, casual use generally includes the collection of geochemical, rock, soil, or mineral specimens using hand tools; hand panning; or non-motorized sluicing. It may include the use of small portable suction dredges as well as metal detectors, gold spears and other battery-operated devices for sensing the presence of minerals, and hand and battery-operated dry washers. Operators may use motorized vehicles for casual use activities provided the use is consistent with the regulations governing such use (part 8340 of this title), off-road vehicle use designations contained in BLM land-use plans, and the terms of temporary closures ordered by BLM.

Casual use does not include use of mechanized earth-moving equipment, truck-mounted drilling equipment, motorized vehicles in areas when designated as closed to “off-road vehicles” (as defined in Section 8340.0-5), chemicals, or explosives. It also does not include “occupancy” as defined in Section 3715.0-5 or operations in areas where the cumulative effects of the activities result in more than negligible disturbance.

In general, persons may engage in casual use activities without consulting, notifying, or seeking approval from the BLM. If mining activities exceed casual use and are likely to cause a non-negligible surface disturbance, then the claimant is required to first file a notice or plan of operations with BLM and provide a financial guarantee (bond) for reclamation. If an operation goes beyond a notice-level operation, a plan of operation must be submitted to the BLM. A plan of operation is required when an operation involves more than 5 acres of surface disturbance or meets other criteria defined under 43 CFR 3809.11 (BLM 2019).

The Redding FO has an active mining program with three authorized plans of operation and two pending plans of operations. The largest plan of operation is for an active underground gold mine called Washington Mine that has been operational since the gold rush. The Redding FO has recorded thousands of locatable mining claims since the mining claim recordation requirements of FLPMA were enacted in 1976; there are approximately 500 currently active mining claims (BLM 2021a). Most claims currently do not have active operations under 43 CFR 3809. Most of the locatable gold is found in placer deposits, with some areas having hard rock gold hosted in thermal deposits. Both FOs have had historical mining for locatable minerals, but there are no longer active mines in the Arcata FO. Future interest in hardrock minerals within the planning area would likely be for gold or base metals and would depend on increases in metal prices and the regulatory restrictions placed on exploration and mining. The NCIP AMS (BLM 2021a) contains additional details on anticipated demand in the planning area for locatable mineral development.

There are currently 60,400 acres of federal mineral estate (60,000 acres of BLM-administered surface lands overlaying federal minerals and 400 acres of split-estate federal minerals) withdrawn from locatable mineral entry. These areas comprise ACECs, designated wilderness, ERMA, floodplains, historic sites, various watersheds, and areas with sensitive species.

Environmental Consequences

Impacts Common to All Alternatives

Under all alternatives, locatable minerals would be managed to prevent unnecessary or undue degradation of public lands by mining operations. These mining-related activities would be managed by the BLM under 43 CFR 3809. Under 43 CFR 3809, permit applications and monitoring activities would be implemented prior to all mining operations greater than casual use. In addition, the BLM would require all mining developers within the planning area to operate in a manner that does not result in unnecessary or undue degradation, and to perform restoration efforts in accordance with approved reclamation plans. Reclamation plans would meet all criteria outline in 43 CFR 3809.420(b)(3).

While all alternatives recommend certain areas for withdrawal from locatable mineral entry, a recommendation for withdrawal does not alter the management of locatable minerals or foreseeably result in the withdrawal of the area under the recommendation. Existing claims and existing or pending plans of operation would be managed consistent with law, regulation, and policy. Recommendations for withdrawal from locatable mineral entry are not binding. Further, withdrawal is an action separate from the recommendation for withdrawal, areas cannot be withdrawn until at the direction of the Secretary of the Interior, further investigation and NEPA analyses are completed, and Secretarial notice is published in the *Federal Register*. Impacts of any withdrawals would not be realized until the withdrawal action occurs. Withdrawals can only be enacted by Congress or the Secretary of the Interior; however, there is no requirement that Congress or the Secretary of the Interior consider, implement, or otherwise advance the recommendations of recommendations for withdrawals made in RMPs. Further, there is no requirement that withdrawals match the recommendations made in an RMP. The BLM does not anticipate impacts on locatable mineral activities in the decision area associated with the recommended withdrawals or any other proposed management action. If a withdrawal was enacted impacts would be detailed in separate NEPA analysis associated with that action, withdrawn areas would no longer be available for staking new claims, resulting in a reduction in the availability of locatable mineral resources on BLM-administered lands, and the development of existing claims in withdrawn areas would require a validity examination, resulting in increased costs of development. See **Appendix B** for the acres recommended for withdrawal by alternative.

Under 43 CFR 3809.11 a plan of operations is required for any operations causing surface disturbance greater than casual use in certain special status areas including river segments identified for potential inclusion in the NWSRS, designated ACECs, areas designated as closed to OHV use, and designated wilderness. In these areas operations that would otherwise be able to operate per notice-level operation requirements would be impacted by additional expense and time required to complete a plan of operations. The amount of additional time and expense would be dependent of the details of each operation. Under all alternatives 60,400 acres would be withdrawn from locatable mineral entry. In areas recommended for withdrawal from locatable mineral entry and location, no new claims could be staked, but the requirement for a plan of operations for all activities greater than casual use would apply to valid claims which predate the withdrawals.

Alternative A

Under Alternative A, 54,600 acres would be designated as ACECs, 65,300 acres would be managed as eligible WSR segments under the NWSRS, and 59,200 acres would be closed to OHV use. In these areas, all operations greater than casual use would require a plan of operations, resulting in the impacts described above under *Impacts Common to All Alternatives* in these areas.

Alternative B

Under Alternative B, 88,820 acres would be designated as ACECs, 65,200 acres would be managed as suitable for inclusion in the NWSRS, and 73,600 acres would be closed to OHV use. In these areas, all operations greater than casual use would require a plan of operations, resulting in the impacts described above under *Impacts Common to All Alternatives* in these areas. The total acres of these areas under Alternative B would be 48,520 more than under Alternative A.

Alternative C

Under Alternative C, 42,430 acres would be designated as ACECs, 18,600 acres would be managed as suitable for inclusion in the NWSRS, and 58,800 acres would be closed to OHV use. In these areas all operations greater than casual use would require a plan of operations, resulting in the impacts described above under *Impacts Common to All Alternatives* in these areas. The total acres of these areas under Alternative C would be 59,270 acres less than under Alternative A.

Alternative D

Under Alternative D, 87,890 acres would be designated as ACECs, 51,800 acres would be managed as suitable for inclusion in the NWSRS, and 61,500 acres would be closed to OHV use. In these areas all operations greater than casual use would require a plan of operations, resulting in the impacts described above under *Impacts Common to All Alternatives* in these areas. The total acres of these areas under Alternative D would be 22,090 acres more than under Alternative A.

Cumulative Impacts

Impacts associated with historic, ongoing, and reasonably foreseeable future actions including continued casual use (as defined in 43 CFR 3809) and larger operations conducting locatable mineral development in the area, as well as locatable mineral allocations proposed under the alternatives, would continue to contribute cumulatively to impacts including the development of locatable minerals for productive use, and a reduction in the future availability of locatable mineral resources in the planning area.

Mineral Materials

Affected Environment

Mineral materials are a common variety of materials that includes sand, clay, gravel, broken rock, and building stone that are sold or disposed of under the Mineral Materials Sales Act of 1947. Mineral materials disposals include both sales and free use permits.

There have been no recent sales of mineral materials in either the Redding or Arcata FOs. However, the BLM provides mineral materials free of charge to state, county, and federal agencies for use in public projects under a FUP. Currently the Arcata FO has one authorized FUP, and the Redding FO has seven authorized FUPs. The current authorized FUPs within the Redding FO are used by the Bureau of Reclamation for salmon habitat restoration within the Trinity River (DOI 2020). These FUPs are the only current mineral materials development within the planning area.

The BLM authorizes disposals of mineral materials through both noncompetitive and competitive sales, whenever possible and environmentally sensible. The BLM has not authorized mineral materials disposals in either the Redding or Arcata FOs in the last 20 years, and there are no existing community use areas or community pits.

There is potential for further mineral development of sand and gravel for use in concrete aggregate and construction projects within the planning area. The NCIP AMS (BLM 2021a) contains additional details on anticipated demand in the planning area for mineral materials.

Environmental Consequences

Alternative A

Under Alternative A, approximately 81,800 acres (21 percent of the BLM decision area), and 800 acres of BLM split-estate (0 percent of the split-estate decision area), would continue to be closed to mineral materials disposal (see **Table 2-1**). Areas closed to mineral materials sales include Red Mountain ACEC, Elder Creek ACEC, Deer Creek, and the Upper Klamath River corridor. Alternative A would continue with existing closures of mineral materials disposals within the decision area. Currently, the only use of mineral materials within the decision area fall under FUP permits. With no current mineral materials sales outside of FUPs in the area, the proposed closures will have little new impacts.

Under Alternative A, the following sites are closed for mineral materials disposal with the exception of mineral materials to be used to benefit natural values or in habitat restoration that enhances salmonid spawning habitat or the restoration of riparian vegetation. These restorations are only permitted if they enhance or are not in conflict with watershed protection. Dry Creek mineral disposals are permitted only for steelhead spawning habitat enhancement within Dry Creek. Mineral materials development would also be adjusted based on restrictions set forth under VRM standards identified under Alternative A. Mineral materials disposals are not permitted in the following areas, specific exceptions made in some of the areas are show in parenthesis:

- Upper Klamath River corridor.
- Battle Creek below Manton Road (permitted unless such actions enhance the natural values, e.g., fisheries habitat or riparian vegetation recovery.)
- Dry Creek (only if such actions enhance the steelhead spawning potential within Dry Creek).
- Shasta Valley wetlands (only if such actions enhance the long-term condition of riparian vegetation and the native fisheries habitat.)
- Grass Valley Creek watershed.
- Trinity River (only to enhance riparian vegetation, anadromous fisheries habitat or when not in conflict with the long-term protection of natural values.)
- Public lands within the 100-year floodplain of Lower Clear Creek and Mule Mountain (unless such actions enhance salmonid spawning or the restoration of riparian vegetation.)
- Cottonwood Creek and Sacramento River parcels (unless such actions benefit the natural values.)
- Baker Cypress (only if such actions enhance Baker cypress habitat.)

Impacts Common to All Action Alternatives

Under all action alternatives, most of the lands within the decision area would stay open to mineral materials development, unless otherwise specified as closed (see **Appendix B**).

Closures of the following areas would impact the availability of mineral materials in the area that would most commonly be used in construction efforts. Since the current sole use of mineral materials falls under

FUPs, these closures would have little impact. Free use permits could still be granted by the BLM under closures, so under all action alternatives the impact of closing these areas would be minimal.

Anticipated demand for FUPs is expected to increase in the number and magnitude for river restoration efforts. The demand for sales contracts is expected to decrease with the added closures.

Areas **closed** to mineral materials development under all action alternatives:

- Degraded riparian areas
- SRMAs, unless for restoration purposes
- ERMAs, unless for restoration purposes
- Suitable WSR segments classified as wild or scenic, unless for restoration purposes
- Eel River WSR (Mainstem Eel, North Fork Eel, Middle Fork Eel, South Fork Eel, Van Duzen) in the Wild and Scenic segments
- Trinity River WSR, unless for restoration purposes
- BLM-administered lands or BLM-acquired lands in the Coastal Strip
- California National Historic Trail on BLM-administered lands
- Lands with Wilderness Characteristics managed as a priority

All ACECs would be closed to mineral materials development unless for restoration purposes, with the following exceptions that would be **open** to mineral materials development on a case-by-case basis:

- Butte Creek ACEC
- Deer Creek ACEC
- Upper and Lower Clear Creek ACEC
- Upper Mattole ACEC

Alternative B

Closing approximately 206,700 acres of BLM-administered surface estate (54 percent of the decision area) and 1,300 acres of split-estate (0 percent of the decision area), to mineral materials development would limit the potential for sourcing aggregate for construction uses. Under Alternative B, sensitive soils such as decomposed granite, ultramafic/serpentine and BSCs would be closed to mineral materials development. Alternative B would allow mineral materials development, and restoration efforts would be permitted within floodplains. Under Alternative, B mineral materials development and restoration projects would be allowed within active floodplains.

Alternative C

Under Alternative C, 167,800 acres of BLM-administered surface estate (44 percent of the decision area) and 1,600 acres of split-estate (1 percent of the decision area), would be closed to mineral materials development. Surface disturbance within sensitive soil areas could be conducted under the premise of requiring a stormwater management plan or implementing BMPs (**Appendix F**). These sensitive soil areas include decomposed granite, ultramafic/serpentine and BSCs. Alternative C would allow mineral materials development if it aligned with resource goals. Under Alternative C, mineral materials development would

be allowed within an active floodplain if BLM determines it to be consistent with natural and cultural resource goals.

Alternative D

Under Alternative D, 209,600 acres of BLM-administered surface estate (55 percent of the decision area) and 5,600 of split-estate (2 percent of the decision area), would be closed to mineral materials development. Under Alternative D, sensitive soils such as decomposed granite, ultramafic/serpentine and BSCs would be closed to mineral materials development. Alternative D would allow mineral materials development if it aligned with resource goals. Under Alternative D, mineral materials development would be allowed within an active floodplain if BLM determines it to be consistent with natural and cultural resource goals.

Cumulative Impacts

All of the current mineral materials disposals within the planning area (outside of BLM-administered lands) are FUPs issued to Reclamation for river restoration, such as for projects where streambeds are modified and mineral materials are strategically placed in the river to create salmonid spawning habitat or restore areas impacted by gold mining and other historic land uses.

Several reasonably foreseeable future actions could result in impacts on mineral materials resources in the planning area. The Lower Klamath Dam Removals, various Trinity River restoration and improvement programs, Corral Gulch Restoration, Oregon Gulch Channel Rehabilitation, Channel Rehabilitation and Sediment Management for Remaining Phase I Activities, and Six Rivers Aquatic Restoration Project would likely require mineral materials to help restore stream habitat or meet other project goals (see **Appendix B** for additional details). Cumulatively, with existing FUPs and reasonably foreseeable future actions shown in **Table B-1**, these projects would result in the extraction and use of mineral materials in the planning area. Since mineral materials are widely available in the planning area, the past, present and RFFAs along with the relative contributions from the alternatives would not be expected to result in cumulative impacts on mineral materials under any alternative.

D.3.6 Recreation and Visitor Services

Issue Statements

- How would the alternatives affect recreation opportunities in the planning area?
- How would the alternatives affect current recreational uses?
- How would fire potential affect recreational access, or certain forms of recreation under the alternatives?
- How would the alternatives affect recreation opportunities in areas managed for wilderness and/or listed-species recovery?
- How would the alternatives affect RMA designation?

Affected Environment

Recreation in the decision area includes hiking, backpacking, mountain biking, horseback riding, rock climbing, riding OHVs, hunting, fishing, panning for gold, whitewater rafting, kayaking, rowing, surfing, hang-gliding, camping, sightseeing, photography, wildlife viewing, and historic site visitation. Current management strategies for the decision area focus on these activities. Recreation is managed through

established RMAs and by the issuance of SRPs, individual special recreation permits, and RUPs. The variability of recreation use rates within the decision area depends on the location and seasonality.

The BLM designates SRMAs and ERMAs to effectively manage recreation and visitor services in accordance with BLM Handbook H-8320-I, Planning for Recreation and Visitor Services (BLM 2014). See **Appendix H** for additional information.

Recreation Management Areas

SRMAs are areas identified in land use plans to direct recreation funding and personnel to fulfill commitments made to provide specific “structured” recreation opportunities based on outcome-focused management. The BLM’s Priorities for Recreation and Visitor Services Workplan (BLM 2003b) incorporates the outcome-focused management approach as the principal method to establish a relationship between benefits desired by recreationists and the activities and setting (physical, social, and managerial) characteristics that may facilitate realization of those benefits.

An SRMA designation helps direct recreation program priorities toward areas with high resource values, elevated public concern, or high amounts of recreational activity. Within a SRMA, recreation and visitor services management is recognized as the predominant land use planning focus. Investments in recreation facilities and visitor services are aimed at reducing resource damage and mitigating user conflicts. Depending on the recreation setting chosen and accompanying level of recreation management zones, the level of management objectives and administrative activities could vary from intense to low use for each SRMA. The BLM can develop implementation-level plans for SRMAs to further guide management actions and objectives.

Three SRMAs are in the decision area: the Samoa Peninsula SRMA, the Interlakes SRMA, and the Forks of Butte Creek SRMA; these total 40,190 acres (11 percent of the decision area).

ERMAs are administrative units that require specific management consideration to address recreation use, demand, or recreation and visitor services program investments. The BLM manages ERMAs to support and sustain the principal recreational activities and the associated qualities and conditions of the ERMA. Management of ERMAs is commensurate with the management of other resources and resource uses. While generally unnecessary in a large ecologically and culturally diverse recreation area, such as the City of Redding and its border lands, an ERMA may be subdivided into recreation management zones to ensure recreation and visitor services are managed commensurate with the management of other resources and resource uses. There are no designated ERMAs under the current RMPs.

Recreation Activity and Use

Common recreation areas activities in the planning area include hunting, fishing, swimming, canoeing, whitewater boating, surfing, floating, OHV use, relaxing, camping, hiking, mountain biking, equestrian use, wildlife viewing, casual mineral collection, and gold panning. More information on these activities can be found in the NCIP AMS (BLM 2021a).

Recreation use in the decision area is identified by the type of use and visitation numbers. For the past 30 years, recreation use in the decision area has increased, and the types of use have changed. Recreation use on BLM-administered lands around populated areas has increased dramatically, while use in more

remote areas has remained constant or increased slightly. The BLM anticipates that increasing recreation use and changes in use patterns will continue.

The BLM uses the Recreation Management Information System to track and report the types of recreation the public participates in and the visitation numbers of the numerous recreation areas throughout the decision area. The system enables BLM employees to record estimates of recreation use for 65 types of recreational activities. Estimates are based on data collected from BLM recreation sites and areas, including registrations, permit records, observations, and professional judgment. Visitation is estimated by the number of participants and the visitor days. Participants are defined as the actual number of people who take part in a recreational activity. A visitor day is a recreation unit of measure commonly used by federal agencies and represents an aggregate of 12 visitor hours at a site or area.

BLM employees periodically take vehicle counts of visitors at entrance locations and at specific recreations sites. Motorized traffic is counted per vehicle, but a single vehicle may carry more than one visitor (an average of 2.5 persons per vehicle is commonly used). ERMA's lack direct visitation monitoring facilities, such as traffic counters or visitor registers. Direct monitoring by BLM staff must focus on areas of greatest use or conflict; that means more remote locations within the decision area may not receive adequate monitoring. In addition, many popular trails and use areas are not designated, making it difficult to accurately determine the amount of recreational use these areas receive. Therefore, the numbers recorded for specific activities in specific areas may not accurately reflect the level of use, and the origin of changes in use patterns (such as a change in the numbers or types of nonlocal users) are difficult to determine.

Over the last 10 years, but especially since the onset of the COVID-19 pandemic, long-term non-recreational camping on BLM-administered lands has increased in the planning area. The transient and homeless populations participating in this trend have been driven outdoors due to the pandemic and limited local shelters. Long-lasting effects from the pandemic are still unknown but increases in management and enforcement may be necessary in the future.

Areas of Critical Environmental Concern

The BLM manages designated ACECs to protect important historical, cultural, and scenic values, as well as fish, wildlife, and other natural resources. ACECs are only designated through the land-use planning process. Conflicts may arise between ACECs and recreation opportunities when protections limit access or certain uses, such as OHV travel. However, ACECs may also improve recreation experiences by protecting valuable resources and points of interest. The enhanced natural setting that is likely to result from ACECs designated for that purpose also provide high-quality scenery and ample opportunity for wildlife viewing. Currently, 16 designated ACECs are within the decision area. See **Section D.4.1**, ACECs, for more information.

Travel Management

As stated above, the BLM anticipates that recreation use and changes in use patterns will continue to increase in the coming decades. One example is the expanding use of electric bicycles, or e-bikes. As OHV use has continued to increase, new vehicle types and technologies have been introduced that have made it easier for a broader range of recreationists to participate. In August 2019, Secretarial Order 3376 was issued for the purpose of increasing recreational opportunities through the use of e-bikes. The order specifically directed the BLM to revise its OHV regulations at 43 CFR 8340. The final e-bike rule, published

in December 2020, amends 43 CFR 8340.0-5 to define e-bikes, which are limited to Class 1 (motorized when pedaling, ceases assistance at 20 mph), 2 (motor that does not require pedaling to activate, ceases assistance at 20 mph), and 3 e-bikes (motor does not require pedaling to activate, ceases assistance at 28 mph). The new rule will ultimately provide BLM managers with the ability to exclude e-bikes that meet certain criteria from the definition of an OHV at 43 CFR 8340.0-5(a), allowing use on non-motorized routes that are open to non-motorized bicycles. However, the rule did not immediately open non-motorized routes to e-bikes and still requires the issuance of new land use planning or implementation-level decision making that complies with NEPA (BLM 2023b).

E-bikes allow recreationists to experience the ability to travel longer distances with less physical exertion. This would thereby increase recreational access and opportunities for a more diverse and inclusive group of recreationists on BLM-administered trails. However, it is important to consider the impact of e-bikes on natural resources. According to a 2021 study, though e-bikes can provide greater access to outdoor activities, electrical-assisted mountain bikes are less restricted by terrain compared with traditional mountain bikes. This expanded reach could include sensitive ecosystems that previously were not subject to the effects of mountain bike use (Mitterwallner et al. 2021). Additional e-bike travel information can be found in **Section D.3.7**, Travel and Transportation Management.

There are currently two established OHV recreation areas within the decision area: the Chappie-Shasta OHV Area and the Samoa Dunes Recreation Area. These areas are specifically managed primarily to provide high-quality OHV recreation opportunities among other recreational activities. OHV management designates routes and areas as open to OHV travel, closed to OHV travel, or limited to specific routes. For more information on OHV travel management, see **Section D.3.7**, Travel and Transportation Management.

Special Recreation Permits

The BLM issues SRPs for commercial uses, competitive and noncompetitive events, and organized groups. Commercial SRPs are issued, for example, to guides, vendors, recreation clubs, and event organizers. Commercial operations, competitive events, and organized groups under SRP provide recreation opportunities or services not requiring installation of permanent facilities on public lands. SRPs require operating plans and areas of operation to be in conformance with land use planning. SRPs may be issued for 10 years or less, with annual renewals. The permits are issued to manage visitor use, protect natural and cultural resources, and accommodate commercial recreational uses. RUPs are issued primarily at day-use areas with amenities, and at campgrounds in accordance with Federal Lands Recreation Enhancement Act (FLREA). RUPs revenue goes toward providing the amenities and services one may not have unless visiting a specific developed recreation area, and goes toward services such as trash removal, infrastructure maintenance and visitor service materials. Most often, the BLM uses RUPs to authorize individual and group use of recreational facilities, also known as fee sites. The Redding FO has five RUP fee sites: the Douglas City Campground, the Steelbridge Campground, the Junction City Campground, the Shasta Campground, and the Reading Island Group Campground. Two additional fee sites are currently proposed in a business planning process, Ohl Olson Group Campground and Stiener Flat Campground. The fees collected go to support maintenance, security, visitor information, and facility improvements. The Arcata FO decision area does not have any fee sites or other areas and activities that require an RUP. Additional permit information can be found in the Northwest California Integrated Resource Management Plan Analysis of the Management Situation Revision (BLM 2021a).

Wild and Scenic Rivers

Congress created the National Wild and Scenic Rivers (WSR) System in 1968 (Public Law 90-542; 16 USC 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. It encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection. The decision area contains 117 WSR eligible segments totaling 201.7 miles on BLM-administered lands. More information on WSRs can be found in **Section D.4.3, Wild and Scenic Rivers**.

Wildland Fire Management

Wildland fire management in the decision area is provided by collaboration between multiple agencies. Under the California Master Cooperative Wildland Fire Management and Stafford Act Response Agreement (CFMA), CAL FIRE, the Forest Service, and the NPS assume wildfire protection responsibility for the decision area. The BLM manages fire restrictions and treatment on BLM-administered lands.

Wildfire and fuels treatment activities affect recreation and visitor services in the decision area. Since the adoption of the Arcata and Redding RMPs, the frequency and severity of wildfires have increased substantially in the planning area. Additionally, multiple recreational activities may cause wildfires, including camping, target shooting, and OHV travel. More information on current wildland fire management can be found in **Section D.2.8, Wildland Fire Management**.

Lands with Wilderness Characteristics

Under FLPMA, wilderness preservation is part of the BLM's multiple-use mandate and is recognized as part of a spectrum of resource values to be considered during land use planning. Section 201 of FLPMA requires the BLM to maintain, on a continuing basis, an inventory of all public lands and their resources and other values, which includes wilderness characteristics. For an area to qualify as lands with wilderness characteristics, it must possess sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. There are no areas that are managed as lands with wilderness characteristics in the decision area. More information on lands with wilderness characteristics can be found in **Section D.4.4**.

Riparian Management Areas

Riparian reserve protection and restoration are components of the Aquatic Conservation Strategy from the Northwest Forest Plan (USDA and USDI 1994). The protection of riparian areas is intended to improve important and biodiverse habitats in certain river and creek segments of the decision area. Riparian restoration in these areas may limit recreation access and opportunities. Table 3-5 in the NCIP AMS (BLM 2021a) provides riparian reserve management for the Arcata and Redding FO RMPs. More information on riparian management areas can be found in **Section D.2.4, Vegetation**.

Land Tenure

A critical component of the BLM's land management strategy is the transfer of landownership or land interests through purchases and acquisitions, sales and exchanges, and withdrawals. The BLM completes these transactions when they are in the public interest and consistent with publicly approved land use plans. Since the implementation of the previous RMPs, the Redding and Arcata FOs have acquired 36,050

acres of surface estate (9.4 percent of the decision area). Most disposal occurred due to land exchanges. Land acquisitions may improve recreation opportunities by increasing the acreage of BLM-administered lands for the public to enjoy, whereas land disposals may have the opposite effect if the disposal is not leveled out by an exchange for lands with higher recreation value. The BLM can use land withdrawals to remove lands from settlement, sale, or other uses to reserve the lands for a particular public purpose or program, including recreation. More information can be found on land tenure in **Section D.3.2, Land Tenure**.

Firearm Use

The BLM allows the use of firearms on BLM-administered lands, as provided for in California state law. Target shooting is generally allowed on BLM-administered lands, as long as it is done in a safe manner without causing damage to natural resources or improvements. Shooting is strictly prohibited in developed recreation sites and other areas where posted. Unless specifically stated otherwise, firearm use for hunting on BLM-administered lands is generally allowed, under CDFW hunting regulations. A California hunting license is required to hunt within the state (BLM 2023a).

Environmental Consequences

Impacts Common to All Alternatives

Travel Management

The BLM would continue to manage 190 acres (0.01 percent of the planning area) as open to OHV travel in the Samoa Dunes management area. Under all alternatives, recreation associated with OHV travel would continue to be available in the Samoa Dunes management area.

WSRs

Existing designated WSRs (Trinity River and certain tributaries, Klamath River and certain tributaries, and Eel River and certain tributaries) would continue to be retained (totaling 52 miles). The BLM would continue to protect and enhance natural and recreational values. There would be no change in recreation, such as fishing.

Riparian Management Area

Riparian management areas are afforded special consideration across all alternatives. All alternatives would use the Aquatic Conservation Strategy objectives and recreation facilities must not retard attainment of those objectives. Riparian management area widths would vary between the alternatives based on the type of aquatic feature and other factors, meaning that the size of the area that would be afforded special consideration would also vary across the alternatives. Ultimately, these differences between alternatives would not have an appreciable difference on the ability of the BLM to manage recreation along rivers and creeks under the different alternatives. Under all alternatives, recreation facilities would be designed and operated by the BLM to not retard attainment of the Aquatic Conservation Strategy objectives while still providing a high-quality recreation experience where possible, which are often mutually beneficial goals.

SRMAs and ERMAs

Table B-1 in Appendix B identifies recreation management areas under each alternative. Under all alternatives, the area of Forks of Butte Creek would continue to allow casual mineral collection and gold panning, under either an SRMA or ERMA designation. Under all alternatives, recreationists would continue to visit the area for this type of recreation.

Shooting

In compliance with 43 CFR 8365.2-5 (a), discharge of firearms including recreational target shooting would continue to be prohibited in all developed recreation sites with the exception of designated target shooting areas. Tracer rounds, ammunition considered to be incendiary or explosive, and body armor piercing ammunition would continue to not be allowed. This would continue to provide safe recreation conditions.

Alternative A

ACECs

Table B-1 in **Appendix B** identifies the ACECs under each alternative. Under Alternative A, the BLM would continue to manage 54,600 acres (14 percent of the decision area) as ACECs. ACECs that would continue to be designated under Alternative A that have recreation value include Deer Creek ACEC (570 acres), Forks of Butte Creek ACEC (2,900 acres), and Sacramento River Bend ACEC (18,600 acres). Most ACECs were designated to protect rare and important plant and wildlife habitat, cultural resources, and historic values, which would continue to limit recreation to protect those resources and values from damage. Under Alternative A, management of ACECs would continue to be dated and unable to adapt to present issues of conflict between recreation and ACECs.

Mineral Materials

Under Alternative A, there are few existing rock pits in the decision area, none of which overlap with existing RMAs. Recreationists would continue to not come into conflict with commercial mineral activities.

Grazing

Under Alternative A, 40,200 acres (11 percent of the decision area) of RMAs would be unavailable to grazing. As a result, recreation use in these recreation areas would continue to avoid conflict with livestock grazing.

Utility Corridors

Under Alternative A, one utility corridor is proposed in the decision area, as described in the West-Wide Energy Corridor PEIS (BLM 2020a). The proposed transmission lines, if constructed, would likely be erected using helicopters for placement, which would result in impacts on recreational users due to the noise. Additionally, the transmission line structures may degrade recreation experiences because of the diminished scenic quality of the locations of implementation. However, these utility corridor areas are only 400 acres throughout the whole decision area and not located near any of the existing or proposed RMAs. Therefore, the impact from the utility corridors on recreation is minimal.

Timber

Under Alternative A, there would continue to be no guidance for timber harvesting in the RMPs for RMAs.

WSRs

Under Alternative A, the BLM would continue to manage 117 river segments (totaling 201.7 miles) as eligible for inclusion in the NWSRS. River segments that are eligible for inclusion in the NWSRS would continue to provide current recreation. There would continue to be 27 rivers that contain a recreation ORV. The BLM would continue to protect and enhance natural and recreational values. There would be no change in recreation, such as fishing.

Travel Management

The BLM would continue to manage 59,200 acres (16 percent of the decision area) as closed to OHV travel, and 322,800 acres (85 percent of the decision area) would continue to be limited to existing and designated routes. This would continue current OHV recreation in these areas. Under Alternative A, management of OHV use would continue to be based on dated information that only considers the OHV technology available in the early 1990s. Management actions would continue to not consider recent increases in OHV use rates and technology. As a result, OHV users would continue to lack properly managed amenities, and modern conflicts between different types of recreation groups would continue to not be addressed.

Under Alternative A, there would continue to be a lack of management guidance for e-bikes within the decision area. E-bikes did not exist when the current RMPs were written, and there is no guidance within the current RMPs for their use or implementation of the Final e-bike Rule. As a result, e-bike use throughout the decision area would continue to be only allowed on motorized routes. Additionally, without explicit BLM management action, e-bike use may also lead to user conflicts and damage to resources.

Wildland Fire Management

Under the California Master Cooperative Wildland Fire Management and Stafford Act Response Agreement, CAL FIRE, the Forest Service, and the NPS would continue to assume wildfire protection responsibility for the decision area. CAL FIRE would be responsible for general fire suppression. BLM management would continue to follow guidance from the 1992 and 1993 RMPs, which have become outdated due to the severity and frequency of current wildland fire conditions. Current and planned fuels reduction projects would continue without modern, comprehensive, and wide-scale management planning. As a result, important scenic and recreational values may not be proactively treated, managed, or monitored. Locations of high recreation quality may continue to not be treated for fire danger, which, in the case of a potentially avoidable wildfire, could endanger visitors or degrade recreation opportunities, experiences, or access.

Lands with Wilderness Characteristics

Under Alternative A, there would continue to be no lands with wilderness characteristics managed to protect wilderness characteristics as a priority over other multiple uses. There may be areas that meet the criteria of lands with wilderness characteristics that did not meet the criteria when the current RMPs were adopted. These areas would continue to be managed in ways that are incompatible with lands with wilderness characteristics. Recreationists, such as hikers and wildlife viewers, that value lands with wilderness characteristics would continue to be able to enjoy these areas, but these areas would lack management direction to specifically protect these values.

Land Tenure

Under Alternative A, the 101,000 acres (26 percent of the decision area) of lands identified as potentially suitable for disposal would continue to guide land tenure management actions, as would the 281,400 acres (74 percent of the decision area) of lands identified for retention. Existing withdrawals would continue to be the Trinity River and Clear Creek Acquisition Areas (344 acres), Trinity Wild and Scenic River (3,123 acres), and Forks of Butte Creek (Butte County) (2,070 acres). Land tenure management under Alternative A would be based on land conditions that have changed since the RMPs. As a result, current disposal and retention of lands may not adequately account for evolving recreation conditions.

Recreationists would lack the opportunity provided by the potential acquisition of lands for recreation uses that were not identified under the current RMPs.

SRMAs and ERMAs

Under Alternative A, the broad range of recreation opportunities available in the decision area would continue. The Interlakes SRMA, Samoa Dunes SRMA, and Forks of Butte Creek SRMA would continue to be managed as they were designated. There would continue to be 40,190 acres (11 percent of the decision area) of designated SRMAs within the decision area. There would continue to be no ERMAs designated in the decision area. The management direction for most RMAs would continue to be outdated and unable to account for increases in visitor use and changes in recreation technology and activities, such as e-bikes.

SRPs

The Redding FO issues over 100 SRPs annually. The Arcata FO issues around 30 annually (though most of these permits are for the King Range National Conservation Area, which is outside the decision area). Under Alternative A, the BLM would continue to be unable to meet the demand for greater numbers of SRPs and the current conditions that require updated SRP guidance.

Camping

Under Alternative A, existing camping closures and rules around stay limits would remain. The BLM would not be able to respond to new conditions around camping with the comprehensive planning wide decisions. For example, the amount of non-recreation camping that occurs on BLM-administered lands is much higher than it was when the current RMPs were adopted, due to factors such as changing economic circumstances. Additional site-specific implementation level decisions could be made to alleviate issues in localized areas, but the broader camping strategy at the RMP level would not be responsive to current trends.

Shooting

Under Alternative A, opportunities for firearm use, such as recreational target shooting or hunting, would remain under current management guidance. The BLM would continue to allow recreational firearm use in undeveloped BLM-administered lands unless specifically stated otherwise. The BLM would continue to prohibit firearm use in management areas, such as the Samoa Peninsula Management Area, Manila Dunes, and Red Mountain Management Area. Firearm use for hunting would continue to be permitted during State-determined seasons in the South Spit area under the Arcata RMP; however, target shooting would not be allowed. Hunting would continue on other BLM-administered lands under CDFW regulations. Under Alternative A, there would continue to be no designated target shooting facilities within the decision area. Recreational target shooting would continue to be dispersed throughout the decision area. Dispersed target shooting would continue to be a hazard with the potential to spark wildfires.

Alternative B

ACECs

Under Alternative B, 25 ACECs would be designated, totaling 88,820 acres (23 percent of the decision area). Compared with Alternative A, 34,220 more acres would be designated as ACECs under Alternative B. An increase in ACEC designations and acreages would change recreation opportunities. ACECs under Alternative B would increase recreation opportunities, such as in the Swasey Drive Clear Creek Greenway ACEC, Beegum Creek Gorge ACEC, and Eden Valley ACEC. Alternatively, there are several proposed

ACECs that prioritize the protection of rare species or habitats. As a result, there would be closures or seasonal limitations for certain recreational activities.

Mineral Materials

All SRMAs and ERMAs would be closed to mineral materials development (unless for restoration purposes) and closed to mineral leasing. Impacts would be the same as those described under Alternative A.

Grazing

Under Alternative B, 34,200 acres (9 percent of the decision area) of RMAs would be unavailable to grazing. Grazing is not specifically available or unavailable across the board in ERMAs or SRMAs, but rather grazing decisions are based on other overlapping designations and decisions, such as ACECs. Compared with Alternative A, 11,400 more acres in SRMAs and ERMAs would be available for grazing under Alternative B. However, impacts on RMAs from grazing would only take place on areas with active grazing allotments. New grazing authorizations would still need to be approved at the site-specific implementation level before grazing actually occurred on these open acres. Factors like whether an area has vegetation suitable for grazing, the appropriate stocking level, and general interest in the public lands for grazing would likely mean that actual differences in livestock grazing authorizations or number of livestock on the landscape would not be appreciably different among alternatives. For these reasons, impacts on recreational experience are expected to be similar under Alternative B as compared to Alternative A, though more acres in recreation areas could be considered for new authorizations.

Utility Corridors

All SRMAs would be identified as ROW avoidance areas and all SRMAs and ERMAs would be retained for long-term management (subject to valid existing rights). Compared with Alternative A, these protections would help ensure the recreation areas could be managed for the desired recreation setting characteristics of the current recreation demands.

The utility corridor areas would be 400 acres throughout the whole decision area and not located near any of the existing or proposed RMAs. Therefore, the impact from the utility corridors on recreation would be minimal.

Timber

Within SRMAs, the BLM would allow timber harvesting, firewood cutting, and special forest product harvest if they can be implemented without affecting the desired recreation setting in the long-term. The BLM would allow the same timber activities in ERMAs if they can be implemented without adversely affecting the desired recreation setting in the long-term. Compared with Alternative A, Alternative B provides greater clarity for how timber harvesting activities would occur within RMAs. Recreationists would be able to utilize local firewood if they can do so without affecting the desired recreation setting.

VWSRs

Under Alternative B, the BLM would manage all 117 eligible river segments (totaling 201.7 miles) as suitable for inclusion in the NWSRS. Compared with Alternative A, recreation opportunities and experiences would improve because, for example, certain surface disturbances that detract from or interfere with recreation would be limited or prohibited in the river corridors. Also, some rivers have a recreation ORV, which would provide recreation opportunities and experiences. Though development and access may

become limited to protect important ORVs, recreationists would experience enhanced and protected natural quality and visual settings in the identified WSRs.

Travel Management

Under Alternative B, 14,400 acres would be moved from OHV limited to OHV closed. The BLM would make additional specific route designations in an implementation-level travel and transportation management planning process following the completion of the RMP.

Under Alternative B, the BLM would be able to better manage OHV use compared with Alternative A. Management actions would be based on current conditions, technologies, and needs. A trail management plan for the Chappie-Shasta OHV Area SRMA would facilitate expansion of the trail network to provide for additional OHV recreational opportunities, decrease user density, increase variety of difficulty levels, and separate different motorized user groups (including loop trails and trails to scenic or unique areas). Overall, within the decision area, more acres would be closed to any form of OHV use. However, as further described in the Travel and Transportation Management impact analysis, this increase in acres closed to OHVs actually results in very few miles of closures of preliminary routes. While these preliminary routes might not exactly match what is on the ground, they do illustrate that there could be some impact on recreational users, but this impact would be relatively minimal.

Under Alternative B, e-bikes would be considered motorized vehicles and be managed similarly to OHVs. E-bikes would be allowed in all areas open to OHV travel. In OHV limited areas, the BLM would not allow e-bikes on natural-surface, nonmotorized routes, unless analyzed and approved on a case-by-case basis at the implementation level. On paved non-motorized routes, Class I and Class II e-bikes would be allowed on existing routes and trails until routes are designated, then Class I and Class II e-bikes would be limited to designated routes. Updated e-bike management actions under Alternative B would allow the BLM to better support and provide for e-bike use, compared with Alternative A, which lacks e-bike management. Conflicts between e-bikes and nonmotorized forms of recreation would be minimized by establishing specific areas for using e-bikes.

Wildland Fire Management

Under Alternative B, wildland fire management would be more comprehensive compared with management under Alternative A. For example, management under Alternative B would include community engagement and partnerships, vegetation management, data collection and reporting, multiple resource objectives, and specific management direction for special designation areas. Management under Alternative B would also restore suppression lines to original contour and vegetation to minimize visual contrast, which would remove recreation use in those areas during restoration. Also, interface zone outcomes and actions would not be changed, even in areas where interface zone space and the essential connectivity corridors intersect. Landscapes would be better protected from wildfire damage; this would maintain scenic quality and recreation safety in the long term.

Lands with Wilderness Characteristics

Under Alternative B, the BLM would manage ten locations (21,970 acres [6 percent of the decision area]) to protect wilderness characteristics as a priority over other multiple uses. Management actions impacting recreation opportunities would include limiting OHV and mechanized use to designated routes, prohibiting drone usage, and prohibiting new permanent road construction. In general, minimal recreation developments would occur in lands with wilderness characteristics to maintain wilderness characteristics,

and SRPs and other group uses would only be allowed where impacts on natural and cultural resources can be mitigated in the permitted area. Under Alternative B, mechanized and motorized recreationists would be directly impacted, and would not be able to access newly designated lands with wilderness characteristics. However, other kinds of recreation, such as hiking, camping, and wildlife viewing, would experience less conflict with mechanized and motorized recreation. Over time, the new areas that would be managed to protect wilderness characteristics would improve habitat quality and minimize damage from human use. Improved habitat would benefit individuals who recreate to observe wildlife.

Land Tenure

Under Alternative B, 6,000 acres (2 percent of the decision area) would be identified as potentially suitable for disposal, existing withdrawals would be continued, and 376,500 acres (99 percent of the decision area) would be identified as lands for retention. Compared with Alternative A, Alternative B management actions would identify 95,000 fewer acres as suitable for disposal. Those 95,000 acres (25 percent of the decision area) would instead be identified as suitable for retention. Compared with Alternative A, retaining more land under Alternative B could maintain access to BLM-administered lands and potentially high-quality recreation opportunities for recreationists. Lands identified for acquisition would prioritize locations to benefit environmental and habitat quality, especially riparian and connectivity corridors, as well as enhancing recreation access or opportunities.

SRMAs and ERMAs

Under Alternative B, the BLM would designate the Chappie-Shasta OHV Area (23,800 acres [6 percent of the decision area]) as an SRMA. Additionally, the BLM would designate five areas as ERMAs (21,790 acres [6 percent of the decision area]). ERMAs would be managed similarly to SRMAs, but ERMAs would be subject to management of recreation commensurate with other resources and uses.

The Redding Trails ERMA would consist of multiple recreation management zones (RMZs). The RMZs within the Redding Trails ERMA would primarily focus on nonmotorized activities and improve trail connectivity for residents of the Redding area. Compared with Alternative A, there would be more robust and comprehensive management guidance for trail usage in the Redding area.

The Samoa Dunes ERMA would provide for both motorized and nonmotorized recreational use. The ERMA would be managed mostly in the same way as it would under Alternative A; however, there are some differences. The Samoa Dunes ERMA would put greater emphasis on nonmotorized uses, closing areas to OHVs and improving access to activities such as bird-watching, surfing, and picnicking, as well as providing more interpretation and education signage regarding natural and cultural resources.

The Forks of Butte Creek ERMA would provide recreation opportunities for casual mining, creek access, multiple-use trails, and maintenance of a predominantly undisturbed landscape. The area would be designated for day-use only; however, overnight camping may be considered for organized groups, events and commercial uses when part of an SRP. Compared with Alternative A, the Forks of Butte Creek would no longer be designated as an SRMA.

The BLM would manage 16,390 fewer acres as SRMAs under Alternative B compared with Alternative A. This is primarily due to the Interlakes SRMA contracting to create the Chappie-Shasta OHV SRMA, and due to Samoa Dunes and Forks of Butte Creek becoming reclassified as ERMAs. There would be more focused OHV management under Alternative B for the Chappie-Shasta OHV SRMA to improve OHV

recreation opportunities and experiences. Though less area would be designated as SRMAs, overall recreation opportunities would be provided through expanded ERMA's.

The BLM would assess management of areas outside RMAs on a case-by-case basis for suitability for recreation opportunities. Recreational development outside RMAs would not be allowed unless it contributes to management of habitat connectivity corridors, promotes habitat resiliency, or protects or interprets cultural resources.

SRPs

Under Alternative B, the BLM would issue SRPs as a discretionary action for activities that are consistent with resource and program objectives, are within budgetary and workload constraints, and would not cause public health and safety issues or create user conflicts.

The BLM would collaborate with applicable agencies and SRP holders in the SRP application process, as necessary, to address potential resource limitations and recreational conflicts. Multiple RMAs would have specific SRP guidelines depending on site-specific needs. More specific guidance for SRP issuance and monitoring would help BLM staff better manage SRP applications and priorities, compared with Alternative A.

Camping

Under Alternative B, individual SRMAs would have camping limits identified in their management actions, as applicable. For all other BLM-administered lands, camping limits would default to BLM general policy: In designated campgrounds, camping is limited to 14 days at any one location within a 30-day timeframe; dispersed camping is limited to 14 days at any one location within a 30-day timeframe, then visitors would need to move a minimum of 25 miles away for subsequent camping. Under Alternative B, multiple areas would be closed to dispersed camping, such as in newly designated ACECs. In general, camping opportunities would be more restricted compared with Alternative A. Though camping access may become more restricted, the BLM would be able to better manage non-recreation camping on BLM-administered lands, compared with Alternative A.

Shooting

Under Alternative B, the BLM would prohibit the discharge of firearms for shooting or recreational target shooting in all developed recreation sites. In undeveloped areas, no exploding targets without permission from the BLM authorized officer, or targets made of any material besides untreated wood, paper, cardboard, metal silhouette, or nontoxic clay pigeons, are allowed. Additionally, the BLM would not allow tracer rounds, ammunition considered to be incendiary or explosive, body armor-piercing ammunition, and steel core ammunition. The BLM would also prohibit all other forms of projectiles, such as paintball, airsoft, or any other form, at developed recreation sites, though any paintballing or airsoft projectiles used outside developed recreation sites would be allowed if they are biodegradable. Shooting restrictions would not differ greatly from management under Alternative A.

Alternative C

ACECs

Under Alternative C, seven ACECs would be designated, totaling 42,430 acres (11 percent of the decision area). Compared with Alternative A, there would be 12,170 fewer acres designated as ACECs. Seven ACECs designated under Alternative A would not be retained or provide a new protective designation,

such as LSR under Alternative C. As a result, less land would be protected by ACEC designation, which would have a mixed impact on recreation opportunities compared with Alternative A, with some areas being more available for recreation and some areas having less protections which would impact recreation in those areas.

Mineral Materials

The impacts would be the same as those described under Alternative B.

Grazing

Under Alternative C, 40,800 acres (11 percent of the decision area) of RMAs would be unavailable to grazing because of changes to grazing management. Compared with Alternative A, 47,500 more acres in SRMAs and ERMAs would be available for grazing under Alternative C. However, impacts on RMAs from grazing would only take place on areas with active grazing allotments.

Utility Corridors

The impacts would be the same as those described under Alternative B. The utility corridor areas are only 400 acres throughout the whole decision area and not located near any of the existing or proposed RMAs. Therefore, the impact from the utility corridors on recreation would be minimal.

Timber

The impacts would be the same as those described under Alternative B.

WSRs

Under Alternative C, the BLM would manage 14.2 miles of river segments (Lacks Creek and Canyon Creek) as suitable for inclusion in the NWSRS. All other eligible rivers and creeks would be released from further consideration under the WSR Act. All other management actions would be the same as under Alternative B. Compared with the 201.7 miles designated as WSR eligible under Alternative A, the 187.5 miles of rivers and creeks remaining would be released from consideration under the WSR Act and no longer be managed to protect WSR-related values. In some cases, recreationists may be provided increased access and use in some of these areas. However, overuse and the lack of protection may degrade the environmental and scenic quality of the released rivers and streams in the long term.

Travel Management

Under Alternative C, there would be a greater amount of acreage available to OHV travel compared with Alternative A. The BLM would move approximately 400 acres from OHV closed to OHV limited. All other management actions related to OHV recreation would be the same as under Alternative B.

Management under Alternative C would provide more opportunities for OHV recreationists. Additionally, compared with Alternative A, the BLM would be able to better manage OHV use. Areas that were closed to OHV use under Alternative A that would become OHV limited under Alternative B may degrade the natural setting. However as described in the Travel and Transportation Management impact analysis, while OHV closed areas may be slightly decreased in Alternative C, the miles of preliminary routes are not appreciably different between alternatives. Differences in OHV closed acreage would likely have limited impacts, positive or negative, on recreational users.

Management of e-bike use under Alternative C would be similar to under Alternative B; the only difference would be found in natural surface non-motorized routes in OHV limited areas. On these routes, e-bikes would be limited to Class I and be allowed on existing routes and trails until routes are designated, then Class I e-bikes would be limited to designated routes. This would provide greater opportunities and access for e-bike recreationists compared with management under Alternative A, including allowing for greater access for people with disabilities or other limitations. Electronic-assisted mountain bikes on natural-surface, nonmotorized routes can access locations previously unattainable by traditional mountain bikes. This would increase impacts on recreation areas that were not previously subject to similar forms of damage.

Wildland Fire Management

Under Alternative C, wildland fire management would be mostly the same as it would be under Alternative B. But under Alternative C, the BLM would maintain, as appropriate, suppression lines as long-term strategic fire breaks. Also, where special designations and interface zones conflict, interface zone treatment would be prioritized. Impacts on recreation use under Alternative C would be similar to those described under Alternative B, with minimal visual differences due to suppression zone maintenance and the location of fuels treatments.

Lands with Wilderness Characteristics

Under Alternative C, only Gilham Butte (5,840 acres [2 percent of the decision area]) would be managed to protect wilderness characteristics as a priority over other multiple uses. The remaining 28,200 acres, some of which would be incorporated into the Chappie-Shasta SRMA, would be managed to minimize impacts on wilderness characteristics while emphasizing other multiple uses. All other management actions would be the same as under Alternative B. Compared with Alternative A, the BLM would manage more acreage as lands with wilderness characteristics. This would provide more opportunity for recreation such as hiking and wildlife viewing, while reducing conflicts with mechanized and motorized recreationists in these areas.

Land Tenure

Under Alternative C, 49,400 acres (13 percent of the decision area) would be identified as potentially suitable for disposal, existing withdrawals would continue, and 333,100 acres (87 percent of the decision area) would be identified as lands for retention. Compared with Alternative A, Alternative C management actions would identify 51,600 fewer acres as suitable for disposal. Under Alternative C, there would be 51,700 greater acres (14 percent of the decision area) identified for retention, compared with management under Alternative A. Lands identified for acquisition would prioritize lands that provide open space in or around communities, as well as lands that enhance recreation access or opportunities.

Compared with Alternative A, management under Alternative C would maintain access to public lands and potentially high-quality recreation resources. Acquisition of open spaces in and around communities would provide more public land for convenient recreation use. Additional impacts would be the same as under Alternative B.

SRMAs and ERMAs

Under Alternative C, the BLM would designate four SRMAs (totaling 41,790 acres [11 percent of the decision area]). The largest, the Chappie-Shasta OHV SRMA, would be 31,100 acres (8 percent of the decision area). Under Alternative C, the Chappie-Shasta OHV SRMA would have the same impacts and

management as under Alternative B. The Redding Trails SRMA would be managed under similar guidance as the Redding Trails ERMA under Alternative B.

Under Alternative C, the Iron Mountain Target Shooting Area SRMA would be designated and be 600 acres in size. The SRMA would provide an opportunity for designated target shooting in a safe and controlled environment. The SRMA would provide management for the protection of natural and cultural resources while allowing for recreational target shooting on BLM-administered lands. Under Alternative C, an implementation level plan for managing the shooting range would be developed to determine proper facilities and operating practices. The inclusion of the Iron Mountain Target Shooting Area SRMA could minimize the impacts of recreational target shooting in other locations of the decision area.

Under Alternative C, the BLM would designate nine areas as ERMA (totaling 46,480 acres [12 percent of the decision area]). Compared with Alternative A, there would be 48,080 more acres (13 percent of the decision area) managed for recreation, including both SRMAs and ERMAs. Recreational development would be allowed outside RMAs if it would not result in adverse impacts on natural and cultural resources. Under Alternative C, there would be an increased focus on providing for recreation opportunities throughout the decision area.

SRPs

SRP management under Alternative C would be generally the same as under Alternative B. Alternative C would include the Iron Mountain Target Shooting Area SRMA, which would provide shooting range SRPs. Additionally, because there would be more designated RMAs under Alternative C, SRP use would likely increase due to the development of recreation areas and focus on specific recreation activities.

Camping

Under Alternative C, camping restrictions and relative impacts would, in general, be the same as under Alternative B. Camping in Cline Gulch would be restricted to designated dispersed camping areas instead of day use only under Alternative B though.

Shooting

Under Alternative C, opportunities for recreational target shooting would increase compared with Alternative A; this is due to the designation of the Iron Mountain Target Shooting Area SRMA. All other general firearm restrictions on BLM-administered lands in the decision area would be the same as under Alternative B.

Alternative D

ACECs

Under Alternative D, the BLM would designate 26 ACECs, totaling 87,890 acres (23 percent of the decision area). Compared with Alternative A, there would be 33,290 more acres (7 percent of the decision area) designated. Impacts would be the same as those described under Alternative B.

Mineral Materials

The impacts would be the same as those described under Alternative B.

Grazing

Under Alternative D, 56,700 acres (15 percent of the decision area) of RMAs would be unavailable to grazing due to changes in grazing management. Compared with Alternative A, 31,100 more acres in SRMAs and ERMAs would be available for grazing under Alternative D. However, impacts on RMAs from grazing would only take place on areas with active grazing allotments.

Utility Corridors

The impacts would be the same as those described under Alternative B. The utility corridor areas are only 400 acres throughout the whole decision area and not located near any of the existing or proposed RMAs. Therefore, the impact from the utility corridors on recreation would be minimal.

Timber

The impacts would be the same as those described under Alternative B.

WSRs

Under Alternative D, 147.2 miles made up of 62 river segments would be managed as suitable for inclusion in the NWSRS. Management actions also include prioritization of Tribal access, as appropriate, while protecting ORVs. All other eligible rivers and creeks would revert to management found elsewhere in the plan, and the ORVs on these non-suitable segments would be protected through other means. Impacts would be similar to those described under Alternative C.

Travel Management

Under Alternative D, approximately 2,300 acres would be moved from OHV limited to OHV closed. All other management actions related to OHV recreation would be the same as under Alternative B.

Management under Alternative D would provide fewer opportunities for OHV recreationists. Additionally, compared with Alternative A, the BLM would be able to better manage OHV use. Areas that were limited to OHV use under Alternative A that would become OHV closed under Alternative D may improve the natural setting. Overall, within the decision area, more acres would be closed to any form of OHV use. However, as further described in the Travel and Transportation Management impact analysis, this increase in acres OHV closed actually results in very few miles of closures of preliminary routes. While these preliminary routes might not exactly match what is on the ground, they do illustrate that there could be some impact on recreational users, but this impact would be relatively minimal.

Under Alternative D, impacts involving e-bikes would be the same as those under Alternative C.

Wildland Fire Management

Under Alternative D, wildland fire management would be the same as under Alternative C, except under Alternative D, the BLM would determine treatments on a case-by-case basis in areas of overlap where WUI and special designations conflict. Impacts on recreation use under Alternative D would be the same as under Alternative C.

Lands with Wilderness Characteristics

Under Alternative D, the BLM would manage five locations (11,570 acres) to protect wilderness characteristics as a priority over other multiple uses. For example, minimal recreation developments

would occur in lands with wilderness characteristics to maintain wilderness characteristics. Additionally, SRPs and other group uses would only be allowed where impacts on natural and cultural resources can be avoided or mitigated in the permitted area. The remaining 21,950 acres, some of which would be incorporated into the Chappie-Shasta SRMA, would be managed to minimize impacts on wilderness characteristics while emphasizing other multiple uses. Unlike under Alternative A, there would be areas with wilderness characteristics managed to protect wilderness characteristics as a priority over other multiple uses. All other management actions and impacts would be the same as under Alternatives B.

Land Tenure

Under Alternative D, 5,900 acres (1.5 percent of the decision area) would be identified as potentially suitable for disposal, existing withdrawals would be continued, and 376,600 acres (98.5 percent of the decision area) would be identified as lands for retention. Compared with Alternative A, Alternative D management actions would identify 95,100 fewer acres (25 percent of the decision area) suitable for disposal; the BLM would move those acres to suitable for retention. Lands identified for acquisition would be a combination of the criteria described under both Alternatives B and C. Impacts would be the same as described under Alternative B.

SRMAs and ERMAs

Under Alternative D, SRMA management and designations would be the same as under Alternative C. Under Alternative D, the BLM would designate eight areas as ERMAs, totaling 45,880 acres (12 percent of the decision area). Compared with Alternative A, there would be 47,480 more acres managed for recreation (13 percent of the decision area). Impacts would be the same as those described under Alternative C.

SRPs

The impacts would be the same as those described under Alternative C.

Camping

Under Alternative D, camping restrictions would be similar to those under Alternative C, with the exception of Cline Gulch near French Gulch. This area would have the same camping restrictions under Alternative D as identified under Alternative B.

Shooting

Under Alternative D, management of recreational target shooting would be the same as under Alternative C.

Cumulative Impacts

The analysis area used to analyze cumulative impacts on recreation resources includes the entire planning area. It is expected that recreation use levels will increase in the planning area on BLM-administered and non-BLM-administered lands. Impacts on recreation use include travel designations for OHVs; special designations, such as ACECs or wilderness areas; SRP management; RMA designations; surface-disturbing activities; land tenure decisions; and wildland fire management.

The BLM expects visitation to increase on coastal tracts near Arcata and Eureka. Mountain biking use in the Lacks Creek area is expected to increase over the next several years; hiking and backpacking are also expected to increase in the Arcata FO-designated wilderness areas. Requests for SRPs and RUPs

associated with recreation opportunities are expected to increase within the planning area. Higher levels of recreation use will put pressure on BLM resources, protective designations, and BLM-administered lands in general. Recreation access will be closely tied to land designations, both for conservation purposes, such as ACECs, or for RMAs.

Trail development is planned across the planning area. The Ewing Reservoir Trails, Cascade and Sierra Foothills Trails, Weaver Basin Trail Improvements, and Great Redwood Trail projects would increase recreation opportunity in the planning area by adding up to 391 miles of new trails, both within and outside of BLM administered lands. Continued development of trail systems and the linking of trails to the City of Redding's recreation sites would further increase use of BLM-administered lands within the urban interface. The BLM is also constructing 7 miles of new motorized trails within the Chappie-Shasta OHV area that would connect with and parallel existing heavy-use roads. In addition to trail improvements, there may also be expanding or newly developed campsites. The Trinity River Recreation Improvements project would create approximately 16 new campsites. These actions would increase both motorized and nonmotorized recreation opportunities in the planning area.

Trail conditions and availability have changed in the planning area. Trails have been closed or have become unsafe for a variety of reasons, including inadequate trail maintenance, vegetation and timber projects, erosion and flood damage, blockage from beetle kill downfall, obliteration of the trail tread from wildfires, and blockage from wildfire downfall. This has reduced recreation opportunities involving trails. Similarly, changes in route designations and wilderness designations have changed in the planning area. For example, when routes have been changed from open to limited or limited to closed, recreation opportunities involving OHVs have been reduced. Also, recreation opportunities involving OHVs have been reduced when wilderness areas have been designated. Conversely, recreation opportunities that conflict with OHVs can increase where OHV use has been reduced or eliminated.

Unauthorized travel off designated or existing routes, as well as the creation of social trails, has occurred and will likely occur within the decision area. Additionally, e-bike use is expected to increase in recreation areas. Over time, impacts from increased e-bike use likely would become clearer, requiring an adaptive response. Mechanized and motorized uses would continue to conflict with other types of recreation, such as hiking and wildlife viewing.

Fuels management projects in the planning area would provide guidance for removing hazardous trees and other vegetation near recreation areas, improving wildfire resiliency. Activities would include thinning and fuels reduction in and around developed campgrounds, dispersed camping areas, and within trails systems. If these activities occur during popular camping and hiking seasons, they could inconvenience recreationists and impact visual aspects of trail corridors. Conflicts in the WUI between recreationists, fuels treatment, and housing development on parcels adjacent to BLM-administered lands may also complicate management decisions. The BLM would depend on local entities and public input to further identify areas where BLM-administered lands adjacent to communities are needed for recreation, public purposes, or community expansion.

The Trinity River Restoration Program is a multiagency program that would restore fisheries of the Trinity River damaged by dam construction and related diversions. There are several projects within the program that would improve or restore river habitats in the area. However, there may be areas that are restored and then be managed under special designations, limiting recreation access to river sections. River

restoration projects may also be disruptive to commercial guided fishing with impacts dependent on the scope of the projects and the amount of time for fish habitat to stabilize and develop.

When the impacts on recreation from Alternative A are combined with the impacts from the reasonably foreseeable future actions (**Appendix C**), there would be cumulative impacts on recreation opportunities, experiences, and access in the decision area. Higher rates of recreation use, coupled with modern technology and recreation preferences, would continue to strain BLM resources due to outdated management guidance. Existing RMAs would continue to be inadequate for current conditions. Increased dispersed recreation use would continue to impact other important resources in the planning area. Fuels management approaches would continue to be outdated based on modern levels and the severity of wildfires. Recreational activities, such as shooting and OHV riding, would not have restrictions that address the occurrence of wildfires caused by recreation use.

When the impacts on recreation from Alternative B are combined with the impacts from the reasonably foreseeable future actions, there would be cumulative impacts on recreation opportunities, experiences, and access in the decision area. Under Alternative B, improvements to recreation management guidance would be updated to reflect current conditions. Increased recreation uses and modern technologies would be accounted for, unlike under Alternative A.

However, Alternative B would increase restrictions on recreation use and development within the decision area through the designation of ACECs and lands with wilderness characteristics. Alternative B would also limit recreational development outside RMAs unless development would contribute to habitat or cultural resource protection. When combined with reasonably foreseeable future trail and campground development projects, the Redding Trails ERMA and related RMZs would benefit the local community by providing increased opportunity and updated guidance for potential implementation, unlike under Alternative A. Additionally, conflicts in the WUI between recreationists, community members, and fuels treatment would be minimized with updated guidance and new recreation areas.

When the impacts on recreation from Alternative C are combined with the impacts from the reasonably foreseeable future actions, there would be similar cumulative impacts as with Alternative B. However, when combined with reasonably foreseeable future trail and campground development, Alternative C would provide greater recreation opportunities due to increases in the acreages of RMAs in the decision area, more locations for OHV travel, and less protective designations that limit recreation opportunities. Alternative C would better manage the higher rates of recreation use, including OHV travel. Fewer areas designated for protection, compared with Alternative A, may harm the natural setting and decrease visual quality for multiple recreationists and the habitat quality for wildlife viewers.

When the impacts on recreation from Alternative D are combined with the impacts from the reasonably foreseeable future actions, there would be similar impacts compared with both Alternatives B and C. RMA designations and related recreation opportunities would be the similar to those described under Alternative C. However, the number of areas protected for designation would be similar to Alternative B, protecting relevant and important values in ACECs from increased visitor use. Alternative D allows for combining strategy between resources and recreation to facilitate high volume visitation using education about resources, strategic planning for infrastructure to preserve natural and cultural values and providing required amenities, sometimes at cost, for sustainability.

D.3.7 Travel and Transportation Management

Issue Statements

- How would the alternatives affect OHV recreation access and area designations?
- How would the alternatives affect travel management areas?

Affected Environment

Travel management pertains to the infrastructure and legal requirement to provide the public with the opportunity to access and use BLM-administered lands within the planning area. The BLM's travel management program addresses transportation and access needs for recreationists, ranchers, miners, energy developers, and others. The travel and transportation network on BLM-administered lands is a vital link that enables use and management of these lands. BLM Manual 1626, Travel and Transportation Management (BLM 2016d), requires the establishment of a long-term, sustainable, multimodal transportation system of open areas, roads, primitive roads, and trails that addresses public and administrative access needs to and across BLM-administered lands and related waters.

The transportation network in the planning area consists of federal and state highways, paved and unpaved county roads, paved and unpaved BLM roads built to facilitate industrial development, unpaved two-track roads, single-track trails for OHVs, and single-track trails for hiking, biking, and equestrian use. There is an extensive network of BLM roads, which consists of graded gravel roads with associated stormwater ditches that are regularly maintained, and user-created routes that rarely receive maintenance. Nonmotorized transportation networks include trails for pedestrian, equestrian, and cycling activities.

Recreational OHV clubs and organizations, including the Redding Dirt Riders, are present and active in the communities within the planning area. These groups hold OHV endurance, race, and challenge course events (CA Parks 2023).

Current Level and Location of Use

OHV Recreation Areas

Two established OHV recreation areas are within the planning area. The Redding FO manages the Chappie-Shasta OHV Area, and the Arcata FO manages the Samoa Dunes Recreation Area. These areas are specifically managed to provide high-quality OHV recreation opportunities while offering a variety of other recreation opportunities, such as biking, hiking, wildlife viewing, and fishing. Both of these areas are highly popular OHV recreation destinations and provide the majority of OHV recreation use within the planning area.

Travel Management Areas

BLM FOs can, where appropriate, delineate travel management areas (TMAs) that meet the RMP objectives. Where there are unique or shared circumstances, high levels of controversy, or complex resource considerations, TMAs may be delineated to address particular concerns and prescribe specific management actions for a defined geographic area. While no designated TMAs exist within the planning area, the current management plans have addressed travel management on a case-by-case basis through land use plans, activity-level plans, and specific closures. It should be noted that motorized travel in WSAs is limited to the ways and trails that existed as of the FLPMA's passage. Otherwise, WSAs are closed to motorized OHV use.

OHV Area Designations

In general, the OHV term refers to off-road motorcycles, all-terrain and utility-terrain vehicles, jeeps, specialized four-wheel drives such as rock crawlers, race trucks and buggies, and snowmobiles (BLM 2021a). Regulation 43 CFR 8340 Off-Road Vehicles, Subpart 8342.I requires the BLM to establish motorized travel designations for all public lands to promote public safety, protect resources, and minimize conflicts between multiple-use groups. This is usually accomplished during the RMP process by delineating all public lands as open, limited, or closed to motorized travel.

Under, 34 CFR 8342.I, the authorized officer shall designate all public lands as either open, limited, or closed to off-road vehicles. All designations shall be based on the protection of the resources of the public lands, the promotion of the safety of all the users of the public lands, and the minimization of conflicts among various uses of the public lands; and in accordance with the following criteria:

- (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
- (b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.
- (c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
- (d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

The application of designation criteria to OHV areas in the planning area for all alternatives is provided below in **Table D-78**.

Table D-78
Designation Criteria

Special Area Name	Field Office Location (Redding, Arcata)	Designation (open, limited, or closed)	Applicable Criterion (bullets a-d above)	Rationale
Ma-le'l Dunes ACEC	Arcata	Closed	A,B	Endangered plants, plovers.
Corning Vernal Pools ACEC	Redding	Closed	B	Endangered animal, fairy shrimp.
Upper Klamath Bench ACEC	Redding	Closed	A	Protect prehistoric, historic and Tribal resources.
North Table Mountain ACEC	Redding	Closed	A	Protect rare Butte County golden clover.
Lacks Creek ACEC	Arcata	Limited	A,B	Spotted Owl, Murrelet, Old Growth

Special Area Name	Field Office Location (Redding, Arcata)	Designation (open, limited, or closed)	Applicable Criterion (bullets a-d above)	Rationale
Upper Burney Dry Lake and Baker Cypress ACEC	Redding	Upper Burney Dry Lake portion (26 acres) – Closed Baker Cypress portion (183 acres - Limited)	A,B	Protect rare baker cypress and mountain vernal pool habitat.
Hawes Corner ACES	Redding	Closed	A,B	Protect slender Orcutt grass.
Sacramento Island ACEC	Redding	Closed	A,B	Protect rare riparian habitat and fisheries
Mike Thompson Wildlife Area	Arcata	Limited	A,B	Plovers
All Remaining ACECs	Arcata and Redding	Limited	A,B	Protect habitat and minimize damage to resources.
All Remaining SRMAs and ERMAs	Arcata and Redding	Limited	A,B,C	Protect habitat, minimize damage to resources and reduce recreation conflicts.

Certain authorized vehicles were excluded from the OHV definition, including non-amphibious registered motorboats; any military, fire, emergency, or law enforcement vehicles being used for emergency purposes; vehicles whose use is expressly authorized by the BLM Authorized Officer or otherwise officially approved; vehicles in official use; any combat or combat support vehicle when used in times of national defense emergencies; and Class 1, 2, and 3 e-bikes (BLM 2021a). The national objectives for OHV management are to provide for OHV use while protecting natural resources, promoting public safety, and minimizing conflicts among the various users of BLM-administered lands (DOI 2001).

OHV open areas allow for cross-country (off-route) motorized travel. In OHV closed areas, the BLM prohibits motorized travel, except administrative use, to protect public health and safety and to protect important resource values. OHV limited areas may have various meanings: OHV travel may be limited to types or modes of travel, such as foot, equestrian, bicycle, and motorized; limited to existing roads and trails; or limited to designated trails, closed at certain times of the day or season of the year, or for other reasons that would have to be specified in the designation. While there is no comprehensive travel management plan for the planning area, several site-specific designations have occurred through various land use plans or *Federal Register* notices (BLM 2021a); see **Table D-79**.

Table D-79
Existing OHV Designations

OHV Delineation	Acres
Open to cross-country OHV travel	190
Closed to OHV travel	59,200
OHV travel limited	322,800

Source: BLM GIS 2023

There are approximately 1295 miles of routes on BLM-administered lands in the planning area; however, the BLM has not completed a comprehensive route inventory. Therefore, there may be additional routes not documented in the BLM's Ground Transportation Linear Feature data set (BLM 2021a).

Forecasted/Anticipated Demand for Use

The increased development of private lands adjacent to public lands in the urban interface has increased the extent and frequency of motorized and nonmotorized travel on BLM-administered lands, especially in the urban interface areas. This trend will necessitate proactive management of trail and road systems; it also will influence travel management decisions and direction (BLM 2021a).

The use and popularity of OHVs will likely continue to grow well into the future, increasing the demand for specialized trails and designated OHV areas. The urban interface within the Redding FO's administrative boundaries and dispersed areas throughout the planning area will likely continue to see an increase in OHV use. Additionally, there is sustained popularity of nonmotorized trails for community partnership events, such as the Bigfoot Challenge (formerly known as the Mayor's Challenge) (BLM 2021b).

Partnerships with local schools for team and individual sports and educational purposes are also considered to be a highly valued use of nonmotorized trails. In support of community service providers, nonmotorized trails are also made available for trainings for local search and rescue teams and firefighters. Growth in the use of public lands for these purposes is anticipated to increase with greater demand for recreation and outdoor experiences and the requisite need for services (BLM 2021a).

Technological advancements will continue to change the type of use and demands on travel management. For example, the advent of all-terrain vehicles in the 1990s has had a substantial impact on single-track trails used by motorcycles. Today, the increasing popularity of utility-terrain vehicles, also known as side-by-sides, is having an impact on trails created by all-terrain vehicles due to their wider wheelbase. As faster and more powerful machines have become more common, it may be necessary to integrate more restrictions or safety measures.

The development of e-bikes has created a recreation opportunity for those who enjoy e-biking and an opportunity to access existing trails by e-bike users. The popularity of e-bikes is increasing access to a wider variety of BLM-administered trails and roads (BLM 2021a). In the BLM Final e-bike Rule, the BLM determined that, e-bikes should be treated the same as nonmotorized bicycles, which are expressly exempt from the definition of off-road vehicles, only if certain criteria are met and an authorized office expressly determines through a formal decision. Existing management in the planning area does not include a management action on the use of e-bikes of any class on existing roads and trails; as a result, e-bikes are currently managed as motorized vehicles (BLM 2020b). For more information on the e-bike management and anticipated impacts, see **Section D.3.6**, Recreation and Visitor Services.

In some portions of the planning area backcountry, touring or scenic driving by private sport-utility vehicles and commercial companies has increased, requiring the need for improved infrastructure for road signage and road/trail maps. Interest in commercial operations for backcountry travel using high-end race-style vehicles, and the use of utility-terrain vehicles, has created a new niche (BLM 2021a).

Key Features and Areas of High Potential for Use

Major roads crossing public lands within the planning area include Highway 299, Highway 101, and Interstate 5. An extensive network of state, county, city, utility ROW, and BLM-maintained roads provide access throughout the planning area. Primitive routes and two-track and single-track trails provide access to remote areas, usually by means of four-wheel drive vehicles or OHVs. Nonmotorized routes of travel include equestrian, mountain bike, and pedestrian trail systems at Swasey Recreation Area, the Sacramento River Rail Trail System, Clear Creek Greenway, Mule Mountain, Cloverdale, Sacramento River Bend Area, Trinity Management Area, and Lacks Creek Management Area.

Environmental Consequences

Impacts Common to All Alternatives

Under all alternatives, the miles of motorized and nonmotorized trails would be determined under future travel and transportation management implementation-level planning.

Alternative A

OHV Designations

Under the No Action alternative, existing management and OHV designations would continue. Overall, the No Action alternative would result in the least amount of OHV access limitations regarding acreage, compared with all other alternatives; however, in an analysis of miles of observed motorized use in OHV closed areas, the No Action alternative would have 10 preliminary miles compared to 20 preliminary miles under other alternatives. As a result, impacts on travel and transportation management under the No Action alternative would be of lesser intensity compared with impacts under the action alternatives by enabling the most extensive access to BLM-administered lands via OHV travel but the impacts to observed motorized use would be similar across alternatives. Additionally, undesignated areas present a challenge to the BLM in addressing resource impacts related to travel management. This type of use would continue under Alternative A.

Land Tenure Adjustments (Access and Disposals)

In general, the development of trails would increase the existing trail network and create greater access to BLM-administered surface lands. Compared with the other alternatives, the No Action alternative identifies the smallest acreage of lands for retention (281,400 acres) and the greatest acreage of lands suitable for disposal (101,000 acres). The elimination of lands that could eventually provide connections between trail networks or isolated parcels of BLM-administered lands would reduce the BLM's ability to provide a connected trail system on BLM-administered lands. It is important to note that disposal of inaccessible or isolated parcels to acquire land around popular recreation sites has been a part of disposal decisions under Alternative A to improve public access. As a result, generally, impacts on travel and transportation management would be greater than they would be under the action alternatives; this is because the No Action alternative would continue to enable the reduction in the BLM's ability to expand the transportation network. See **Section D.3.2**, Land Tenure, for a more detailed discussion of these effects.

Development of E-bike Trail Use Direction and Management

As the BLM Authorized Officer has not yet issued a written decision authorizing e-bike use in the planning area, e-bikes would continue to be allowed in areas designed for motorized use or in areas designated OHV open only, which would include 540 miles of motorized trails (USDI BLM GIS 2023). While this

mileage is similar to the action alternatives, Alternative A would have a greater impact on travel and transportation management when compared with the action alternatives as there would be no scenarios under which e-bikes would be permitted on roads and trails limited to bicycles or non-motorized travel (BLM 2020b).

Lands with Wilderness Characteristics

With no managed lands with wilderness characteristics under this alternative, there would be the smallest degree of impact on travel and transportation management, as compared with other alternatives. This continued absence of travel and transportation management actions in areas that could possess wilderness characteristics would continue current trends of cross-country travel and trail use. See **Section D.4.4** for a more detailed discussion of these effects.

Impacts Common to All Action Alternatives

Under all action alternatives, lands within the planning area would be designated as OHV limited with the exceptions of specific areas designated as OHV closed and OHV open discussed by alternative, below. Route designations would be made through an implementation-level travel and transportation management planning process following the completion of the RMP. Until the BLM makes route-specific designations, the designation of OHV limited would limit all OHV use to the same manner and degree occurring at the time of the designation in the RMP. However, this designation would not change motorized access that already exists. A designation of OHV limited to existing or designated routes means that cross country travel would be restricted to existing trails. This travel management action would help to reduce resource degradation currently occurring in areas where OHV travel has not been explicitly authorized to date.

Under all action alternatives, new permanent road construction would be prohibited on lands with wilderness characteristics. Depending on location within the planning area, this could inhibit the BLM's ability to provide public motorized access and a connected route network.

Any land acquired by the BLM would be managed similarly to the existing OHV area designations of adjoining BLM-administered lands or as stated, or implied, in the transfer. Where clarification is absent, the BLM would manage acquired lands under the OHV limited area designation. The type of limitation would be set by future implementation-level decisions. Until these decisions are made, use may continue in the same manner and degree consistent with the purposes for which the acquisition was made. These types of limitations would also impact travel and transportation management by reducing OHV access; this is because where classification is absent, the BLM would limit lands acquired under the OHV limited area designation, which would restrict OHVs.

Under all action alternatives, new road construction would be restricted to areas required to provide access to recreation sites, in response to outside applications, or to provide access or egress for fire safety in response to emergencies. This would potentially limit new road construction when compared to Alternative A since Alternative A does not have a similar management action.

Under all action alternatives, e-bikes would be considered motorized vehicles. Class 1 and Class 2 e-bikes would be allowed on paved, nonmotorized routes. All e-bikes would be allowed on motorized routes in OHV limited areas, which would increase e-bike access. Under all action alternatives, the BLM would monitor natural and cultural resource impacts of e-bikes and user interactions with e-bikes. If monitoring

indicates that e-bikes would not be compatible with other uses in a particular area, subsequent implementation-level NEPA analyses may be considered to limit e-bike uses on nonmotorized trails. Therefore, the BLM would enable e-bikes on more miles of trails under the action alternatives than under Alternative A.

Alternative B

As seen in **Map 2-36** in **Appendix A**, under Alternative B, the BLM would close 73,600 acres to OHV travel. This represents more acres closed to OHV travel than under the No Action Alternative and any action alternative. While the acreage closed to OHV travel would be the greatest under Alternative B, in an analysis of miles of observed motorized use in OHV closed areas, there are 20 miles of preliminary motorized use in OHV closed areas under Alternative B compared to 10 miles under the No Action alternative so the impacts to travel and transportation management would be similar to the other alternatives.

Under Alternative B, the BLM would not allow e-bikes in OHV limited areas with natural surface non-motorized routes unless they had been analyzed and approved at the implementation level. This would allow the BLM to make more site-specific management decisions related to e-bike use and impacts on natural and cultural resources than under Alternative A. Alternative A.

Under Alternative B, temporary crossings of riparian management areas with equipment or motor vehicles would only be allowed if they do not retard the attainment of Aquatic Conservation Strategy objectives. While this may restrict some existing crossings, the BLM would identify appropriate stream crossing locations for new temporary routes so the effect would be similar to Alternative A.

Alternative C

As seen in **Map 2-37** in **Appendix A**, under Alternative C, the BLM would close 58,800 acres to OHV travel. This represents the fewest acres closed to OHV travel compared to any of the alternatives but only 400 acres less than under Alternative A. While acreage closed to OHV travel would be the least under Alternative C, there are 10 miles of preliminary motorized use in the OHV closed area of Alternative C so the impacts to travel and transportation management would be similar to the other alternatives.

Under Alternative C, the effect on travel and transportation management from the management of temporary crossings of riparian management areas would be the same as Alternative B.

In OHV limited areas under Alternative C, the BLM would limit e-bikes to Class I on natural surface non-motorized routes where biking is allowed. This would help to preserve the classic mountain bike experience for recreation users in these areas.

Alternative D

As seen in **Map 2-38** in **Appendix A**, under Alternative D, the BLM would close 61,500 acres to OHV travel and limit 320,400 acres to existing and designated routes under Alternative D. This represents more acres closed to OHV travel than under Alternative A, and fewer acres designated as OHV limited than under Alternative A. While the acreage closed to OHV travel would be the greater under Alternative D than the No Action alternative, in an analysis of miles of observed motorized use in OHV closed areas, there are 20 miles of preliminary motorized use in OHV closed areas under Alternative D compared to

10 miles under the No Action alternative so the impacts to travel and transportation management would be similar to the other alternatives.

Under Alternative D, there would be the greatest restrictions on travel and transportation management with respect to minimizing roads and landing locations in riparian management areas compared with all other alternatives.

Under Alternative D, the BLM would limit e-bikes in the same manner as under Alternative C.

Cumulative Impacts

In considering the development of trails and/or connecting trails between existing transportation routes, the use and popularity of OHVs within the planning area will likely continue to increase. E-bike use will also continue to increase within the planning area. Future trail development may be influenced by e-bike rider styles. This could lead to a beneficial impact on travel and transportation by increasing access to trails and by potentially developing new trails, including paved and natural surface non-motorized trails, that would potentially increase the use and growth of the transportation network.

Since the existing RMPs only designated a few areas as OHV limited to existing and designated routes or closed to OHV use, undesignated lands have been managed as open to OHV travel by default. This has led to OHV use and resource degradation where OHV travel is not explicitly authorized. The action alternatives would make comprehensive travel management allocations that would not impact access that already exists and would support formal management of OHV use in the planning area. As a result, the contribution of the action alternatives to cumulative impacts on travel and transportation management would be reflected in more formalized management actions and future route planning.

D.3.8 Livestock Grazing

Issue Statements

- How would the alternatives affect the number of allotments available for livestock grazing and the associated acres of BLM-administered lands and animal unit months of forage allocated for livestock grazing?
- How would the alternatives affect BLM's ability to provide forage on those lands allocated for livestock grazing?

Affected Environment

Livestock grazing on public lands is an important part of the local economy and supports local farming communities. The BLM intends to continue to manage public lands for livestock grazing to support both rangeland health as well as local ranching families. The management of livestock grazing will follow prescriptions of the Yokayo Grazing ROD (BLM 1983a), the Final Redding Grazing EIS (BLM 1983), and allotment management plans (AMPs) that specify grazing systems, management facilities, and land treatments.

The BLM is currently managing 24 active livestock grazing allotments within the planning area, as well as 34 vacant allotments with no current permit or lease associated with them. Five of the vacant grazing allotments have pending applications. All livestock grazing use must meet the standards set forth in Rangeland Health Standards and Guidelines for California and Northwestern Nevada Final EIS (BLM 1998b) to ensure that range condition and productivity are stable.

All grazing leases include standard BLM terms and conditions. Additional general or allotment-specific terms and conditions are also included, such as requirements to comply with the Standards and Guidelines of Rangeland Health for California and Northwestern Nevada. Additionally, a grazing lease may include terms and conditions compliance with an AMP. An AMP is a plan that deals with site-specific grazing management practices that allow for some flexibility in management within the grazing schedule. This flexibility may include reducing stocking rate, or altering the season of use within a pre-determined time frame to better suit the seasonal changes that may influence the grazing operation such as moving from one pasture to another in anticipation of rainfall events that would otherwise conflict with set turnout or gather dates. Currently, four allotments have a completed AMP. In general, most grazing leases in the planning area are not year-round. A given season of use could potentially occur at any time of year depending upon climate, productivity, plant phenology, elevation, or the area's role in an AMP.

The BLM has assigned selective management categories to each active allotment based on their resource conditions, which can change based on changing conditions. These categories are: Custodial (C), Maintain (M), and Improve (I). Custodial (C) allotments prioritize management for the protection of existing resource values. Maintain (M) allotments have moderate to high resource potential, are subject to regular Rangeland Health Assessments, and the present rangeland condition is considered satisfactory. Improve (I) allotments require management to improve resource conditions.

Table D-80 provides a summary of all active and inactive named grazing allotments and outlines the selective management category for each allotment. Although all BLM-administered land in the planning area is allocated as available or unavailable for grazing, not all this area is identified as a grazing allotment. **Table D-80** shows the named allotments. Additional information about allotments within the planning area is provided in Section 2.3.2 of the NCIP AMS.

Forage allocations within allotments are based on animal unit months (AUMs). AUMs permitted within each allotment are generally defined by the BLM specific to the allotment. AUMs permitted in each allotment are outlined in Section 2.3.2 of the AMS. Additionally, the BLM conducts rangeland health assessments at least once every 10 years, and more frequently in areas where additional monitoring is required to ensure that range health standards as described in the Rangeland Health and Standards Guidelines for California and Northwestern Nevada (BLM 1998) are being met and that productivity and land health is stable and in good condition. Management practices for livestock grazing within active livestock grazing allotments in the planning area are described in detail in Section 3.3.2 of the AMS.

Table D-80
Summary of Active and Inactive Named Grazing Allotments within the Planning Area

BLM Field Office	Allotment Name	Total Acres	Management Category*	Active/Vacant	AMP (Y/N)
Redding	Black Mountain	2,817	M	Active	N
Redding	Sheep Rock	320	M	Active	N
Redding	Piney Mountain	280	M	Active	N
Redding	Iron Gate	280	M	Active	N
Redding	Durzel Creek	1,768	M	Active	N
Redding	Secret Spring	2,360	M	Active	N
Redding	Bear Creek	355	C	Active	N
Redding	Panwauket	5	C	Active	N
Redding	Little Cow Creek	160	M	Active	N

BLM Field Office	Allotment Name	Total Acres	Management Category*	Active/Vacant	AMP (Y/N)
Redding	North Fork	160	C	Active	N
Redding	Bald Knob	455	M	Active	N
Redding	Digger Creek	888	M	Active	N
Redding	Hog Lake	5,322	I	Active	N
Redding	Table Mountain	200	M	Active	N
Redding	Jellys Ferry/Battle Creek	4,560	I	Active	N
Redding	Long Ranch	194	M	Active	N
Redding	Picard Road	274	C	Active	N
Arcata	Centerville Bluffs	162	M	Active	Y
Arcata	Horse Pasture Ridge	7,108	C	Active	Y
Arcata	Jewett Creek	440	C	Active	N
Arcata	Lightning Camp Ridge	5,015	C	Active	Y
Arcata	Pepper Gap	451	C	Active	N
Arcata	Travis Ranch	4,607	M	Active	Y
Arcata	Willis Ridge	4,080	C	Active	N
-	TOTAL	42,261	-	-	-
Redding	Hornbrook	225	M	Inactive (Pending Application)	N
Redding	Old Clement Ranch	2,162	M	Inactive (Pending Application)	N
-	TOTAL	2,387	-	-	-
Redding	Salt Springs	1,120	I	Vacant	N
Redding	Adams	720	-	Vacant	N
Redding	Battle Creek	505	-	Vacant	N
Redding	Blodgett	724	-	Vacant	N
Redding	Boeger	130	-	Vacant	N
Redding	Dry Creek	152	-	Vacant	N
Redding	Dutch Gulch	1,587	-	Vacant	N
Redding	Farrell	279	-	Vacant	N
Redding	Furtado	79	-	Vacant	N
Redding	Graves	318	-	Vacant	N
Redding	Hampton	333	-	Vacant	N
Redding	Haskins	82	-	Vacant	N
Redding	Hathaway	224	-	Vacant	N
Redding	Inks Creek	1,248	-	Vacant	N
Redding	Laubacher	1,251	-	Vacant	N
Redding	Lemos Ranch	689	-	Vacant	N
Redding	Lisky	650	-	Vacant	N
Redding	Lucas	609	-	Vacant	N
Redding	Magladry	1,493	-	Vacant	N
Redding	Maplesden	808	-	Vacant	N
Redding	Martin	1,704	-	Vacant	N
Redding	Nicholson (south parcel)	42	-	Vacant	N
Redding	Novy	468	-	Vacant	N
Redding	Partch	160	-	Vacant	N
Redding	Paynes Creek	2,647	-	Vacant	N
Redding	Pleasant Valley	129	-	Vacant	N
Redding	Rickert	165	-	Vacant	N
Redding	Tuscan	660	-	Vacant	N
Arcata	Lake Mountain	335	-	Vacant	N
-	TOTAL	19,311	-	-	-

BLM Field Office	Allotment Name	Total Acres	Management Category*	Active/Vacant	AMP (Y/N)
Redding	Bald Hill	1,410	-	Vacant (Pending Application)	N
Redding	Clear Creek Pasture	772	-	Vacant (Pending Application)	N
Redding	Fuglistaler	394	-	Vacant (Pending Application)	N
Redding	Simpco Lands	1,195	-	Vacant (Pending Application)	N
Redding	Sylva Brothers/Willow Creek	168	-	Vacant (Pending Application)	N
-	TOTAL	3,939	-	-	-
-	GRAND TOTAL (active, pending, and vacant)	67,898	-	-	-

Source: BLM GIS 2023

Note:

*Management category only applies to active allotments.

Currently, there are 195,300 acres of the decision area available for livestock grazing; however, BLM grazing leases would not be granted unless it is demonstrated they are suitable for grazing and adequate NEPA, and administrative requirements have been completed. Of this acreage, approximately 105,400 acres (54 percent) are characterized with potentially suitable vegetation to support seasonal livestock grazing. Areas identified as having potentially suitable vegetation to support seasonal livestock grazing include areas dominated by grassland habitat, shrubland habitat, herbaceous vegetation, and woodland habitat such as Oregon white oak and black oak woodlands that contain a grassy or herbaceous understory.

The BLM's goal in managing livestock grazing is to support local communities and rangeland health standards through economic and ecological services provided by livestock grazing use into the future.

Environmental Consequences

Impacts on livestock grazing are described in terms of change in area (acres) available for livestock grazing under each alternative resulting in a reduction in available forage accessible to grazing livestock (or AUMs); or impacts on vegetation that result in removal or degradation of forage. Impacts on forage availability are described on a high level within this analysis as AUMs and overall vegetation growth vary year to year based on precipitation, soil health, and the level of disturbance to the area.

Impacts Common to All Alternatives

Under all alternatives, the BLM would identify areas available and unavailable for livestock grazing. Areas that are unavailable to grazing would be generally designated as such to avoid conflicts with ACECs, cultural resources, riparian management areas, WSRs, wilderness areas, and coastal resource areas. Making areas unavailable for livestock grazing would reduce the number of acres available to livestock grazing and therefore would reduce the available acreage for livestock operations within the planning area. Identifying ACECs and other sensitive areas as unavailable for livestock grazing would reduce the total number of acres available for livestock operations within the planning area. While the acres available to grazing varies by alternative, the BLM does not anticipate a substantial increase in grazing allotment acreage

over the life of the RMP. Therefore, impacts on other resources would be limited to those areas within active livestock grazing allotments.

Potential future land disposals may impact the total acres available and unavailable for grazing. Selling land parcels that are currently in grazing allotments would reduce the total acres available for grazing. Furthermore, ROW development may result in future limitations to areas that are available for livestock grazing and could also result in surface-disturbing activities that would reduce the amount of available forage within grazing areas. Future land acquisitions would be assessed for their suitability for livestock grazing, which would result in a positive impact on future livestock grazing, as additional grazing lands may become available. Conversely, land acquisition may result in changed conditions due to ROW development which may result in more restrictions on grazing lands. Shifts in management goals may cause the BLM to reduce or expand livestock grazing activities as well.

Surface disturbance from leasable, locatable, and mineral materials development would result in a reduction of vegetation available for livestock grazing. Mineral development would involve land clearing and grading that would disturb soils, remove vegetation, and increase the potential for the introduction of and proliferation of noxious weeds, thereby causing a loss or degradation of livestock forage. Mineral development activities would also increase the potential for livestock harassment and livestock loss from vehicle collisions. Restrictions on surface disturbance related to mineral development, such as no surface occupancy stipulations or closing areas to mineral development, would help prevent the removal of forage resources.

In recreation management areas and areas open for OHV use, livestock could be subject to harassment by recreationists, hikers with dogs, equestrians, mountain bikers, or recreational shooting. Motorized vehicles could collide with grazing livestock resulting in injury or mortality of animals. Livestock that are startled or frightened consistently from recreation activities may lose condition and require more forage consumption to maintain or gain weight through grazing. Furthermore, recreationists could also cause impacts through vandalizing grazing infrastructure such as water troughs and fences/gates which would result in stress to livestock left without water or gaining access to areas that are not safe for them. By restricting or closing OHV use or recreational activities within areas that are available for livestock grazing, these impacts would be reduced.

Wildlife species (such as Roosevelt elk and black-tailed deer) may compete with livestock for forage consumption and water resources if the populations of these wild ungulates are not managed. Management of riparian areas and habitat areas could result in the need for reduced stocking rates within allotments where a large number of wild ungulates are also grazing and browsing. Additionally, there would be an increased risk of livestock contracting diseases (such as bovine tuberculosis) that could be passed to them from wildlife sharing feed and water sources.

Livestock grazing can be beneficial when used as a vegetation management tool in the absence of a natural fire regime. Temporary exclusion of livestock grazing may occur in areas where prescribed fire is conducted to manage vegetation, reduce fuel loads, and increase forest health. Management of unplanned wildfire events may impact grazing allotments and livestock. Where possible, suppression operations would seek to reduce negative impacts on livestock and grazing infrastructure on public lands. Conversely, prescribed fire or other forest health practices may result in positive effects on livestock grazing by managing conifer forest encroachment on areas with suitable vegetation for grazing. Similarly, implementation of forest health practices (for example, timber harvest, fuel reduction) could result in

temporary exclusion of livestock in areas where these activities are taking place. Additionally, forest health practices could conflict with grazing operations by inadvertently causing damage to fences and other grazing infrastructure, and associated noise disturbance from forest health practices could scare grazing livestock.

Climate change will continue to impact livestock grazing by altering the availability and type of forage available for grazing. Climate change may result in increased frequency, size or severity of fires which would change ground cover and change vegetation type (particularly a transition to annual grass species from perennial grasses). Livestock grazing lessees would experience impacts as a result of catastrophic wildfires such as needing to evacuate their animals and find temporary shelter for them, a loss of forage due to fire, and damage to grazing infrastructure. Additionally, climate change may result in changes in vascular plant production (i.e., forage availability or quality) by altering plant community composition and nutrient cycling. This would result in potentially decreased forage value due to increased invasive species or less palatable or invasive species. Conversely, climate change may result in increased forage in some areas due to an increased growing season or increased precipitation during the wet season. Climate change is likely to result in more extended periods of drought which would result in a reduction in the forage availability on BLM-administered lands, and therefore may result in a reduction in stocking rates allowed within grazing allotments.

Alternative A

Under Alternative A, there would be 195,300 acres identified as unavailable for grazing. The nature and type of impacts on livestock grazing as a result of making areas unavailable for grazing would be consistent with those discussed above under *Impacts Common to All Alternatives*.

Under Alternative A, 186,900 acres (49 percent of the decision area) are available for livestock grazing, of which, 62,600 acres are currently managed as active grazing allotment. Of the lands available for grazing, approximately 105,400 acres (56 percent of the land available for grazing) contains suitable vegetation (this includes areas characterized by CalVeg as shrubland, herbaceous cover, and hardwood forest/woodland). There are 67,898 acres of named grazing allotments in the decision area (see **Table D-80**); under Alternative A, 62,600 acres (92 percent) are in areas identified as available for grazing. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

Under Alternative A, there would be 16,500 acres of land open to mineral leasing with major stipulations, and 157,200 acres of land open to mineral leasing with standard lease terms and conditions that would also be available for livestock grazing. There would be 157,100 acres of land open to mineral materials development that would also be available for livestock grazing, and 187,000 acres of land open to locatable mineral development that would also be available for livestock grazing. The nature and type of impacts from leasable, locatable, and mineral materials development would be consistent with those described above in *Impacts Common to all Alternatives*.

Under Alternative A, there would be 174,200 acres available for livestock grazing that would also allow for limited OHV use. There would be no areas available for livestock grazing that would also be categorized as open OHV use. There would be 12,800 acres available for livestock grazing that would also be closed to OHV use. As discussed above, OHV use can cause impacts on livestock grazing such as harassment, injury or mortality of grazing livestock, and potential impacts on grazing infrastructure from recreationists could occur in areas where OHV use is allowed.

Under Alternative A, there would be no overlap with areas available for livestock grazing and recreation management areas.

Alternative B

Under Alternative B, there would be 232,800 acres (61 percent of the decision area) available for grazing, which would be an increase over Alternative A, and 149,400 acres unavailable for grazing, which would be a decrease compared with Alternative A. Even though Alternative B would allocate fewer acres as unavailable for grazing than Alternative A, this would not automatically mean that there would be an increase in the amount of grazing that would occur. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP. The likelihood of the BLM receiving applications for new areas to graze is low, as is the likelihood of the BLM allocating new AUMs. Of the acres available for grazing, approximately 123,600 acres (53 percent) would have suitable grazing vegetation present, as characterized by CalVeg. There are 67,898 acres of named grazing allotments in the decision area (see **Table D-80**); under Alternative B, 62,000 acres (91 percent) are in areas identified as available for grazing, which is a slight decrease from Alternative A. Impacts on livestock grazing as a result of establishing areas as unavailable for grazing would be consistent with impacts defined above in *Impacts Common to All Alternatives*.

Under Alternative B, there would be 9,300 acres of land open to mineral leasing with major stipulations, and 159,600 acres of land open to mineral leasing with standard lease terms and conditions that would also be available for livestock grazing; this would be an increase in acreage from Alternative A. There would be 168,700 acres of land open to mineral materials development that would also be available for livestock grazing, which would be an increase from Alternative A. There would be 257,300 acres of land open to locatable mineral development that would also be available for livestock grazing, which would also be an increase from Alternative A. Impacts from leasable, locatable, and mineral materials development on grazing would be consistent with those described above in *Impacts Common to all Alternatives*.

Under Alternative B, there would be 219,900 acres available for grazing that would also allow for limited OHV use, an increase from Alternative A. Like under Alternative A, there would be no acres available for livestock grazing that would be categorized as open OHV use. There would be 12,900 acres available for grazing that would also be closed to OHV use, a decrease from Alternative A. Impacts from OHV use on grazing would be the same as those described above under *Impacts Common to all Alternatives*.

There would be 11,400 acres available for grazing that would overlap with ERMA's under Alternative B, as compared with no acres of overlap under Alternative A. Impacts on livestock grazing as a result of recreation activities would be consistent with those described in the section above, *Impacts Common to All Alternatives*.

Alternative C

Under Alternative C, there would be 271,800 acres (71 percent of the decision area) available for grazing, and 110,400 acres unavailable for grazing, which equates to more acres available and fewer acres unavailable for grazing as compared with Alternative A. Alternative C would make the highest number of acres available for grazing across all alternatives. Even though Alternative C would allocate fewer acres as unavailable for grazing than Alternative A, this would not automatically mean that there would be an increase in the amount of grazing that would occur. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP. The likelihood of the BLM receiving applications for

new areas to graze is low, as is the likelihood of the BLM allocating new AUMs. Of the acres available for grazing, approximately 138,500 acres (51 percent) would have suitable grazing vegetation present, as characterized by CalVeg. There are 67,898 acres of named grazing allotments in the decision area (see **Table D-80**); under Alternative C, 64,500 acres (95 percent) are in areas identified as available for grazing, which is an increase from Alternative A. Impacts on livestock grazing as a result of making areas unavailable for grazing would be consistent with impacts discussed above in *Impacts Common to All Alternatives*.

There would be 24,600 acres of land open to mineral leasing with major stipulations, and 201,000 acres of land open to mineral leasing with standard lease terms and conditions that would also be available for livestock grazing under Alternative C; this would be a total increase in acreage compared with Alternative A. There would be 203,200 acres of land open to mineral materials development that would also be available for livestock grazing, which would be an increase as compared with Alternative A. There would be 295,400 acres of land open to locatable mineral development that would also be available for livestock grazing, which would also be an increase over Alternative A. Impacts from leasable, locatable, and mineral materials development on grazing would be consistent with those described above in *Impacts Common to all Alternatives*.

Under Alternative C, there would be 258,000 acres available for grazing that would also allow for limited OHV use, an increase from Alternative A. As described under Alternative A, there would be no acres available for livestock grazing that would be categorized as open OHV use. There would be 13,600 acres available for grazing that would also be closed to OHV use, an increase from Alternative A. Impacts on grazing from OHV use would be the same as those described above under *Impacts Common to all Alternatives*.

There would be 10,500 acres available for grazing that would overlap with SRMAs, and an additional 37,000 acres of overlap with ERMAs. For comparison, Alternative A would have no acres of overlap with RMAs. Impacts on livestock grazing as a result of recreation activities would be consistent with those described in the section above, *Impacts Common to All Alternatives*.

Alternative D

Under Alternative D, there would be 188,600 acres (49 percent of the decision area) available for grazing, and 193,600 acres unavailable for grazing, which equates to slightly more acres available and fewer acres unavailable for grazing as compared with Alternative A. Even though Alternative D would allocate fewer acres as unavailable for grazing than Alternative A, this would not automatically mean that there would be an increase in the amount of grazing that would occur. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP. The likelihood of the BLM receiving applications for new areas to graze is low, as is the likelihood of the BLM allocating new AUMs. Of the acres available for grazing, approximately 108,400 acres (57 percent) would have suitable grazing vegetation present, as characterized by CalVeg. There are 67,898 acres of named grazing allotments in the decision area (see **Table D-80**); under Alternative D, 59,000 acres (87 percent) are in areas identified as available for grazing, which is a decrease from Alternative A. The reason for this reduction is the proposed closing of allotments that are not currently being utilized due to unsuitable vegetation for grazing, and closing allotments that overlap with ACECs. Under Alternative D, 49 percent of BLM-administered lands would be available for grazing. Impacts on livestock grazing as a result of making areas unavailable for grazing would be consistent with impacts discussed above in *Impacts Common to All Alternatives*.

There would be 44,400 acres of land open to mineral leasing with major stipulations, and 97,400 acres of land open to mineral leasing with standard lease terms and conditions that would also be available for livestock grazing under Alternative D; these would both be decreases in acreage as compared with Alternative A. There would be 129,400 acres of land open to mineral materials development that would also be available for livestock grazing, which would be a decrease as compared with Alternative A. There would be 197,300 acres of land open to locatable mineral development that would also be available for livestock grazing, which would be an increase over Alternative A. Impacts from leasable, locatable, and mineral materials development on grazing would be consistent with those described above in *Impacts Common to all Alternatives*.

Under Alternative D, there would be 179,100 acres available for grazing that would also allow for limited OHV use, an increase from Alternative A. As described under Alternative A, there would be no acres available for livestock grazing that would be categorized as open OHV use. There would be 9,600 acres available for grazing that would also be closed to OHV use, a decrease from Alternative A. Impacts on grazing from OHV use would be the same as those described above under *Impacts Common to all Alternatives*.

There would be 1,600 acres available for grazing that would overlap with SRMAs, and an additional 29,400 acres of overlap with ERMAs. For comparison, Alternative A would have no acres of overlap with RMAs. Impacts on livestock grazing as a result of recreation activities would be consistent with those described in the section above, *Impacts Common to All Alternatives*.

Cumulative Impacts

The BLM will continue to manage livestock grazing on BLM-administered lands in the planning area into the future. Future grazing management actions will continue to adapt to meet the standards outlined in BLM's Rangeland Health and Standards Guidelines for California and Northwestern Nevada.

There would be no cumulative impacts on livestock grazing resulting from leasable mineral development. LR-2000 data shows there are no existing leases or applications for oil and gas leasing on BLM-administered land or mineral estate in the planning area, nor have any been applied for in the last 20 years. Additionally, there would be no cumulative impacts resulting from locatable mineral development within the Arcata FO portion of the planning area as there has been no active locatable mineral exploration or mining for over 25 years. However, in the Redding FO, there are currently 482 active mining claims (most of which have little mineral development occurring, and 10 of which have been added in the past 25 years), which may continue to operate into the future in addition to future new mining operations that may be opened. Mineral materials development has increased over the past 20 years, although sales contracts have decreased. With this expected continuation of leasable, locatable, and mineral materials development on BLM lands into the future, continued potential impacts on forage availability is expected as described under *Impacts Common to All Alternatives*. Similarly, when impacts on livestock grazing as a result of leasable mineral development are combined with reasonably foreseeable future actions, impacts would be consistent with those described under *Impacts Common to All Alternatives*.

It is likely that improvements to major transportation infrastructure and ROWs will be ongoing across the planning area. The development of new ROWs may result in surface-disturbing activities within areas available for grazing that would remove available forage, and therefore result in cumulative loss of available forage for grazing livestock. Cumulative impacts would be expected to occur as a result of vegetation

treatment and forest health practices and would be consistent with those described under *Impacts Common to All Alternatives*. Similarly, when impacts on livestock grazing as a result of ROW development are combined with reasonably foreseeable future actions, impacts would be consistent with those described under *Impacts Common to All Alternatives*.

Vegetation treatments that include manual, mechanical, biological, and chemical treatments and prescribed fire to reduce hazardous fuels and undesirable vegetation have been used in the past on BLM-administered land, other federal lands, and private lands in the planning area. These vegetation treatments and forest health practices are expected to continue in the future. There are currently 20 wildland fire management projects proposed within the Redding FO boundary, and two wildland fire management projects proposed within the Arcata FO boundary. These wildland fire projects will likely vary on an annual basis based on funding, staff availability, and projected wildfire risk. Cumulative impacts expected to occur as a result of vegetation treatment and forest health practices would be consistent with those described under *Impacts Common to All Alternatives*. Similarly, when impacts on livestock grazing as a result of vegetation treatments and forest health practices are combined with reasonably foreseeable future actions, impacts would be consistent with those described under *Impacts Common to All Alternatives*.

There has been an observed increase in the spread of invasive weeds throughout areas of increased disturbance, development, and climate stress. The BLM would continue to treat and removal invasive and noxious weeds by manual, biological, chemical, and mechanical treatments in the foreseeable future. The removal of invasive and noxious weeds would benefit livestock grazing in the future, as invasive and noxious weeds are often less palatable or even poisonous to grazing livestock. However, weed treatments such as the use of herbicides can be toxic to livestock and may temporarily restrict grazing in these areas. Furthermore, mechanical treatments can be loud and therefore result in stress to livestock. Using targeted livestock grazing practices could result in a positive impact on livestock grazing by increasing the overall health of habitat and therefore resulting in an increase in available forage in future years. When impacts on livestock grazing as a result of invasive weed removal are combined with reasonably foreseeable future actions, impacts would be consistent across all alternatives.

D.4 SPECIAL DESIGNATIONS

D.4.1 Areas of Critical Environmental Concern

Issue Statements

- How would the alternatives affect the relevant and important resource values of proposed ACECs?

BLM regulations for implementing the ACEC provisions of FLPMA are found in 43 CFR 1610.7-2(b). An ACEC possesses significant cultural, historic, or scenic values; fish or wildlife resources (including habitat, communities, or species); natural processes or systems; or natural hazards. In addition, the significance of these values and resources must meet at least one of the following relevance criteria and one (or more) of the following importance criteria.

Relevance criteria are as follows:

- The area is of significant cultural, historic, or scenic value (including, but not limited to, rare or sensitive archaeological resources and religious or cultural resources important to Native Americans).

- The area includes a fish or wildlife resource (including, but not limited to, habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).
- The area has a natural process or system (including, but not limited to, endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features).
- The area has a natural hazard (including, but not limited to, areas susceptible to avalanches, dangerous flooding, landslides, unstable soils, or seismic activity, or that contain dangerous cliffs). A hazard caused by human action may meet the relevance criteria if the RMP process determines that the hazard has become part of a natural process.

Importance criteria are as follows:

- The area has more than locally significant qualities that give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared with any similar resource.
- The area has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
- The area has been recognized as warranting protection to satisfy national priority concerns or to carry out the FLPMA's mandates.
- The area has qualities that warrant highlighting to satisfy public or management concerns about safety and public welfare.
- The area poses a significant threat to human life and safety or to property.

Nature and Type of Effects

The potential impacts on the ACEC relevant and important (R&I) values from management allocations in the range of alternatives can result in a wide array of outcomes that range from beneficial to adverse. The level of protection typically corresponds with the extent of constraints outlined in the management plan. Areas with identified R&I values not proposed for ACEC designation may lack protection against potential effects, unless other resource-specific measures are put in place.

Common management allocations within ACECs include actions such as ROW avoidance or exclusion, mineral leasing status, Visual Resource Management (VRM) classification, Off-Highway Vehicle (OHV) access limitations, and availability of areas for livestock grazing, contribute to the overall potential effects of R&I values. Impacts associated with these actions include increased human presence and vehicle traffic, machinery, noise, loss of or injury to plants and soils due to excavation or trampling, surface disturbance from mineral extraction and infrastructure, and increased exposure to dust and other contaminants associated with mineral development and access road construction. Most ACECs have management prescriptions to either close the area or prevent surface occupancy for mineral development. These closures or limits would provide some protection to the R&I values. Because these closures or limits would be in place due to the ACEC designation, areas with R&I values that are not proposed for ACEC designation would be more at risk to these types of impacts.

The nature and types of effects are connected to the alternatives considered and the underlying R&I values for which each ACEC was designated. While the particulars can vary, the potential effects can be broadly categorized into several key aspects:

- *Biological Effects:* These encompass a range of impacts, including harm to plant and animal life, shifts in plant and animal populations, and the introduction of invasive species.
 - Harm to plants and animals can occur through trampling, soil disruption, and the spread of invasive species.
 - Changes in plant and animal populations can result from altered habitats. For instance, damage to a particular plant or animal species can cascade into affecting other species dependent on it.
 - The introduction of invasive species can intensify competition with native counterparts, affecting resource allocation for water and nutrients, and potentially introducing diseases that harm native species.
- *Physical Effects:* This category includes outcomes such as soil erosion, deterioration in water quality, and shifts in air quality.
 - Soil erosion can arise from trampling and disturbances, posing a threat to habitat integrity and suitability for plant and animal life.
 - Water quality degradation could result from the dissemination of pollutants from activities like mining. Such degradation has the potential to negatively impact plants and animals reliant on clean water sources.
 - Changes in air quality can emerge from the dispersion of dust or smoke originating from human activities.
- *Social Effects:* The spectrum of potential effects extends to human activity, encompassing changes in resource utilization or implications for recreation and tourism.
 - Changes in human utilization of resources may manifest as shifts in management protocols. For instance, allowing mining in an area might trigger an increase in visitation.
 - Impacts on recreation and tourism can arise from modifications in resources or their management. Instances like the pollution of a water body can lead to reduced attractiveness for visitors.

Affected Environment

Existing Areas

The planning area currently contains 16 ACECs designated to protect a variety of resources and values (see **Table D-81**). **Appendix G** contains BLM's evaluations for existing and proposed ACECs.

Table D-81
Existing Areas of Critical Environmental Concern

ACEC	Acres	Relevant and Important Value
Baker Cypress	140	Rare plant type (Baker cypress)
Butte Creek	2,250	Rare vegetation type/wildlife habitat (late successional reserves)
Deer Creek	570	Wildlife (raptors), cultural resources, and recreational and scenic values
Elder Creek	3,060	Elder Creek and Fox Creek watersheds; late successional forest
Forks of Butte Creek	2,900	Scenic, recreational, and historic values
Gilham Butte	2,620	Rare vegetation type/wildlife habitat (late successional forest)
Hawes Corner	40	Rare plant (slender Orcutt grass)
Iaqua Butte	1,110	Late successional forest and associated wildlife habitat values

ACEC	Acres	Relevant and Important Value
Lacks Creek	7,480	Rare vegetation type/wildlife habitat (late successional forest)
Manila Dunes	150	Natural values (active and stabilized sand dunes, wetlands, and sensitive plants)
Red Mountain	6,800	Unique botanical values associated with red, serpentine soils; anadromous fishery (Cedar Creek); and rare vegetation type/wildlife habitat (late successional forest)
Sacramento River Bend	18,600	Natural riparian system, rare plants (slender Orcutt grass and Fremont's western rosinweed), cultural resources, wildlife (raptors), wetland systems, and anadromous fish spawning habitat
Sacramento Island	90	Rare vegetation type (native riparian Great Valley–valley oak forest; Orcutt grass)
Shasta and Klamath Rivers Canyon	1,210	Sensitive riparian and fisheries habitat
South Fork Eel River	7,110	Anadromous fishery and rare vegetation type/wildlife habitat (late successional forest)
Swasey Drive	470	Cultural resources
Total	54,600	—

Source: BLM GIS 2023

Baker Cypress

The Baker Cypress ACEC was designated in the 1993 Redding RMP to protect and study the area's population of Baker cypress. This species is only found in 11 locations in northern California and southern Oregon. Currently, Baker cypress is in decline within this ACEC due to the impacts of wildfire suppression and competition from other conifer species, specifically white fir and ponderosa pine. In 2015, the BLM entered into a stewardship agreement with Humboldt State University regarding management of this area. Under this agreement, the BLM will conduct rehabilitation-focused treatments to benefit Baker cypress, and Humboldt State University will study the effectiveness of these treatments.

Butte Creek

The Butte Creek ACEC was designated in the 1992 Arcata RMP (BLM 1992) for the preservation of late successional forests and associated wildlife habitat values. At the time of designation, this area contained four breeding pairs of northern spotted owls and provided an island of habitat to allow owls to disperse and breed. This area was designated as a LSR under the Northwest Forest Plan (USDA Forest Service 1994), which was incorporated into BLM management in the 1995 Arcata RMP Forest Plan Amendment (BLM 1995a).

Deer Creek

The Deer Creek ACEC was designated in the 1993 Redding RMP (BLM 1993) to protect the area's biological resources, including the peregrine falcon, cultural resources, and recreational resources. The conservation status of the peregrine falcon has since been downgraded. The species was removed from the federal list of threatened and endangered species in 1999 and is no longer identified as a BLM sensitive species in California. However, cliff habitats are important to many raptor species. Since the 1993 Redding RMP (BLM 1993), Deer Creek has been identified as federally designated critical habitat under the Endangered Species Act for spring-run Chinook salmon.

Elder Creek

The Elder Creek ACEC was designated in the 1981 Red Mountain Management Framework Plan (BLM 1981). The ACEC encompasses BLM-administered lands in the Elder Creek and Fox Creek watersheds adjacent to the Angelo Coast Range Reserve. The Angelo Coast Range Reserve, managed as part of the University of California Natural Reserve System, is managed for university-level teaching and research and was first protected in the 1930s. Much of the BLM-administered land in this area was designated as part of the South Fork Eel River Wilderness in 2006. Elder Creek and Fox Creek, which drain into the South Fork Eel River from BLM-administered lands and the Angelo Coast Ranger Reserve, represent two critically important baseline research watersheds due to their largely undisturbed condition.

Forks of Butte Creek

The Butte Creek Canyon ONA/ACEC was designated in the 1993 Redding RMP (BLM 1993) to protect the area's scenic values, and significant recreational and historic values. This area's proximity to the large population center of Chico, California, means this ACEC faces many WUI issues.

Gilham Butte

Gilham Butte was designated as an ACEC in the 1992 Arcata RMP (BLM 1992) for the preservation of late successional forests and the associated wildlife habitat values. This area was designated as a LSR under the Northwest Forest Plan (USDA Forest Service 1994), which was incorporated into BLM management in the 1995 Arcata RMP Forest Plan Amendment (BLM 1995b).

Hawes Corner

The Hawes Corner ACEC was designated in the 1993 Redding RMP (BLM 1993) to protect the area's slender Orcutt grass habitat. This species is currently listed as endangered by the State of California and listed as threatened by the federal government. The slender Orcutt grass has now been found in areas outside this location. As slender Orcutt is a species endemic to vernal pools, the Hawes Corner ACEC also supports many other sensitive species that are specific to vernal pool ecosystems.

Iaqua Butte

Iaqua Butte was designated as an ACEC in the 1992 Arcata RMP d) for the preservation of late successional forests and the associated wildlife habitat values. This area was designated as a LSR under the Northwest Forest Plan (USDA Forest Service 1994), which was incorporated into BLM management in the 1995 Arcata RMP Forest Plan Amendment (BLM 1995b).

Lacks Creek

The Lacks Creek Management Area contains two overlapping ACECs. The Lacks Creek old-growth ACEC was designated in the 1992 Arcata RMP (BLM 1992) to protect late successional forests and the associated wildlife habitat values within an 800-acre area. The 1995 Arcata RMP Forest Plan Amendment (BLM 1995b) expanded this ACEC to 1,520 acres and designated 4,100 acres within this management area. The 1995 Arcata RMP Forest Plan Amendment (BLM 1995b) also designated a second ACEC, the Lacks Creek Watershed ACEC, to protect all BLM-administered lands within the Lacks Creek watershed and to prioritize acquisition of remaining private lands within this watershed. Since this time, acquisitions have expanded the acreage of BLM-administered land within this ACEC to over 7,400 acres. Relevant values for this ACEC are anadromous fisheries, late successional forests, and special status species (specifically

the northern spotted owl), as well as the relevance of these lands in the watershed for Redwood National Park.

Manila Dunes

The Manila Dunes ACEC was designated in the 1992 Arcata RMP (BLM 1992) to protect and interpret natural values, specifically active and stabilized sand dunes, wetlands, and sensitive plants. An activity-level plan for this area, the Environmental Assessment and Land Use Decision Amendment for the Samoa Peninsula Management Area, was completed in 1995 (BLM 1995a). This plan amendment closed this ACEC to OHVs to protect threatened and endangered plants and animals. It also called for actions to restore native dune plant habitat and fragile, natural dune formations and processes.

Red Mountain

The BLM state director designated the Red Mountain ACEC in 1984. An activity-level plan was completed for this ACEC in 1989. The Red Mountain ACEC was designated to protect unique botanical values associated with red, serpentine soils; the anadromous fishery found in Cedar Creek; and 788 acres of late successional forests. The serpentine soils of the central and northeastern part of this ACEC support a unique open-canopied forest with several rare plants, including McDonald's rockcress, listed as endangered by the federal government and State of California; Red Mountain buckwheat, listed as a BLM sensitive species and as endangered by the State of California; and Red Mountain catchfly and Red Mountain stonecrop, which are both BLM sensitive species.

Cedar Creek, which drains most of this ACEC, is a major tributary to the South Fork Eel River. Cedar Creek contributes critically important cool water for anadromous fish species through the dry summer months.

Sacramento Island

The Sacramento Island ACEC was designated in the 1993 Redding RMP (BLM 1993). This area was identified in the 1993 RMP as containing the largest unaltered fragment of native Great Valley–valley oak riparian forest within Shasta County. The ACEC is bordered by Interstate 5, residential and agricultural land, and a sand and gravel plant. Degraded land adjacent to the ACEC allows the BLM to test the effectiveness of restoration techniques, which contributes to future adaptive management decisions.

Sacramento River Bend

The Sacramento River Bend ACEC was designated in the 1993 Redding RMP (BLM 1993) to protect the last remaining riparian system of any size on the Sacramento River between Sacramento and Shasta Dam. The area's unique resources include rare habitats, plants, wildlife, and cultural resources. Vernal pools support Fremont's western rosinweed. Important and rare cultural sites are in the area. Nesting bald eagles and deer winter range habitat are found in this ACEC. Regionally significant wetlands support a diversity of waterfowl. The sections of the Sacramento River and tributaries within this ACEC are important spawning habitat for multiple special status anadromous fish and aquatic wildlife species.

Shasta and Klamath River Canyon

The Shasta and Klamath Rivers Canyon ACEC was established in the 1993 Redding RMP (BLM 1993). It was established to protect critical spawning habitat on the Shasta River for Chinook salmon within the Klamath Basin.

South Fork Eel River

The South Fork Eel River ACEC was designated in the 1995 Arcata RMP Forest Plan Amendment (BLM 1995b) to protect anadromous fisheries and old-growth Douglas-fir. This ACEC overlaps the Elder Creek ACEC and the South Fork Eel River VSR corridor. This area was designated as part of the Elkhorn Ridge Wilderness in 2006.

Swasey Drive

The Swasey Drive ACEC was designated in the 1993 Redding RMP (BLM 1993) for the protection of the area's significant cultural resources. This ACEC falls within the ancestral homeland of the Wintu people, to whom it has long been, and remains, a culturally significant place. Sensitive and irreplaceable remnants of historic gold mining are prevalent in the area including locations related to the historic communities of Horsetown, Muletown, and Briggsville. The area contains a few prehistoric and historic sites, which require special protection given their proximity to the city of Redding.

Potential New Designations

Potential new areas for ACEC designation include the following areas summarized in **Table D-82** and in **Appendix G**.

Table D-82
Potential Areas of Critical Environmental Concern

ACEC	Acres	Relevant and Important Value
Beegum Creek Gorge	4,380	Scenic, fisheries, and wildlife resources; ecological intactness; and rare and sensitive geological and lithological features that support rare and endemic serpentine plant species
Black Mountain	1,110	Coniferous forests habitat with late successional forest characteristics, unique geological features, wildlife, and cultural resources
Corning Vernal Pools	170	Rare critical habitat that supports threatened and endangered species
Eden Creek	4,590	Unique geological and lithological features (serpentine soils) and rare plant species
Eden Valley	10,810	Unique geology, rare plants and rare plant communities, cold-water source for listed salmonids, and cultural and archaeological resources
Grass Valley Creek	19,560	Unique geology, rare plants, and rare plant communities
Ma-le'i (formerly Manila) Dunes	180	Natural values (active and stabilized sand dunes, wetlands, as well as rare plants and rare plant communities)
North Fork Eel	500	Sensitive geological and lithological features, along with fisheries and wildlife resources
North Table Mountain	50	Habitat that supports the rare Butte County golden clover (<i>Trifolium jokerstii</i>)
Sacramento Island	90	Rare vegetation type (native riparian Great Valley-valley oak forest)
Sheep Rock	1,410	Scenic, wildlife, historic, and cultural resources
South Spit	630	Rare plants and rare plant communities as well as wetland habitat and cultural resources
Swasey Drive Clear Creek Greenway	5,960	Fisheries, scenic values, and cultural resources
Upper and Lower Clear Creek	4,560	Fisheries
Upper Burney Dry Lake and Baker Cypress	210	Rare vegetation and wildlife habitat

ACEC	Acres	Relevant and Important Value
Upper Klamath Bench	90	Prehistoric and historic archaeological resources
Upper Mattole	460	Fisheries
Willis Ridge	3,180	Natural systems, including significant fish and wildlife habitat and late successional forests
Total:	53,337	—

Source: BLM GIS 2023

Environmental Consequences

This section discusses effects on existing and potential ACECs and the BLM's ability to protect relevant and important values from proposed management of other resources and resource uses.

Direct effects on ACECs are those that either impair or enhance the values for which the ACEC was proposed for designation. As such, the BLM analyzed the relevance and importance criteria for each existing and potential ACEC. Some direct effects may not occur immediately after implementation of management actions. Potential effects would be considered indirect effects because they would occur later in time and at the site-specific level.

The analysis in this section focuses on specific threats to the relevant and important values identified for each ACEC. The analysis area for existing and proposed ACECs includes each identified ACEC within the planning area. The temporal scale of analysis is the life of the plan. Under alternatives where ACECs are proposed for designation, special management for ACECs would provide a more focused approach to protecting relevant and important values. Under alternatives where ACECs are not proposed for designation, protection of relevant and important values would rely on the management under other resources or special designations.

Existing ACECs

Baker Cypress

Impacts Common to All Alternatives

In general, management actions that protect Baker cypress, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for Baker cypress degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

The Baker Cypress area would remain as a designated ACEC (140 acres) under Alternative A. The ACEC is managed to encourage research of Baker cypress in conjunction with genetic and habitat studies of other stands of Baker cypress. Relevance and importance criteria would be primary management; research would be secondary. The BLM would continue to manage the existing ACEC to protect the relevant and important values for which the ACEC was designated.

The area would continue to be not available for livestock grazing, which would eliminate any adverse effects from this use on Baker cypress on BLM-administered land. OHV use would continue to be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from tree seedlings; it would also help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain a threat to the Baker cypress species.

The BLM would continue to manage mineral leasing and geothermal development as no surface occupancy in the ACEC, which removes the potential effects on Baker cypress from this type of development in the area. Mineral materials sales would continue to be permitted only if such actions enhance Baker cypress habitat which would continue to limit impacts on the relevance and importance of the ACEC.

Alternative B

The existing Baker Cypress ACEC would be expanded from 140 acres under Alternative A to 183 acres under Alternative B. The expanded Baker Cypress ACEC and the newly proposed Upper Burney Dry Lake ACEC would be designated as one ACEC called Upper Burney Dry Lake and Baker Cypress ACEC (210 acres). The BLM would manage the ACEC to protect the rare Baker cypress and mountain vernal pool habitat. It would be managed to decrease the frequency of disturbance to enhance regeneration and health, and to increase regeneration of rare cypress by addressing conifer encroachment through mechanical treatments. Management would prioritize vegetation treatments to promote regeneration of serotinous species. Management would also prioritize acquisition of nearby lands to preserve the hydrologic regime.

This area would be managed as ROW avoidance outside of existing ROWs. ROWs could be developed in the area under certain conditions. For this reason, development activities and placement of facilities would consider the species' needs at the project level to minimize effects.

OHV use would be closed in the Upper Burney Dry Lake area (200 acres). Effects would be similar to those described under Alternative A; however, Alternative B would offer more protection to the relevant and important values for this ACEC due to the increase in acreage being closed to OHV use.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development and surface disturbance, which could damage Baker cypress and mountain vernal pool habitats.

The BLM would close the area to mineral leasing and mineral materials development, which would ensure the Baker cypress and mountain vernal pool habitat are adequately safeguarded from surface disturbances associated with these activities.

The area would be unavailable for livestock grazing, which would eliminate the potential effects from livestock grazing on the Baker cypress and mountain vernal pool habitat. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, which would alter hydrology of wet

and dry cycles that may eventually reduce plant densities. The BLM would work cooperatively with surrounding landowners to prevent trespass, unauthorized grazing, and cross-country OHV use.

Alternative C

The existing ACEC designation would not be retained. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Removing designation would create opportunities for resource uses, such as recreation, OHV and mechanized use, and livestock grazing. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the Baker cypress and mountain vernal pool habitat from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Butte Creek

Impacts Common to All Alternatives

In general, management actions that preserve late successional forest characteristics and the associated wildlife habitat values, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve this ACEC's relevant and important values. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the BLM would continue to manage all BLM-administered lands in the Butte Creek area as an ACEC (2,250 acres) for the preservation of late successional forest characteristics and wildlife habitat values. Under this alternative, the ACEC would continue to be managed to monitor spotted owls and other old-growth characteristics. The BLM would continue to inventory habitat conservation and critical habitat areas. The BLM would contact universities and research institutions for expressions of interest in conducting research. The BLM would also continue contacting surrounding landowners regarding land acquisitions and would continue preparing land report(s) to address specific acquisition methods and site-specific inventories and requirements.

The area would continue to be closed to mineral materials development. This precludes potential effects from mineral development activities. The BLM would add signage to entrance access points in this area to inform the public regarding OHV designations.

Alternative B

Under this alternative, the Butte Creek ACEC would be managed the same as under Alternative A, with the additional management actions as follows.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer.

This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the relevant and important values of this area.

The area would be managed as a ROW avoidance area, and OHV use would be limited to designated routes. These restrictions would reduce the potential for damage to or destruction of northern spotted owls' habitat and help prevent habitat fragmentation.

The area would be unavailable for livestock grazing, which would eliminate the potential effects from livestock grazing on northern spotted owl habitat. Livestock grazing can spread the seeds of invasive, nonnative species that can outcompete native plants. Trampling by livestock also compacts soil and disrupts the recharge of soil moisture into the habitat. Alteration to the hydrology and to the wet and dry cycles can reduce plant densities or extirpate native species.

The area would be closed to mineral leasing, which would eliminate potential effects on the relevant and important values of this type of development.

Alternative C

The existing ACEC designation would not be retained. Late successional forest characteristics would be managed under LSR designations. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Removing designation would create opportunities for resource uses, such as recreation, OHV and mechanized use, and livestock grazing to occur. Alternative C has the fewest resource use restrictions and would likely result in the greatest overall impacts on the late successional forest characteristics and associated wildlife habitat values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Deer Creek

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

The BLM would continue to manage the Deer Creek area as an ACEC (570 acres). The BLM would continue to manage the area as semi-primitive and nonmotorized, and 200 acres in Section 14, Township 25 North, Range 1 East are designated as wilderness. Since there are overlapping designations (Deer Creek ACEC and Ishi Wilderness), whichever management actions are more restrictive would take

precedent. The area would continue to be managed to enable the acquisition of available unimproved lands within the canyon.

The BLM would continue to manage the ACEC as unavailable for grazing. This would eliminate the impacts on biological resources, cultural resources, and recreational resources caused by grazing uses in the area. This also would reduce soil disturbance and the spread of noxious invasive species.

The BLM would continue to manage the area as VRM Class I, which would directly protect the scenic relevant and important values. The objective of VRM Class I is to preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention. Managing to this standard would also prevent large-scale surface-disturbing activities that would affect the relevant and important values. However, it is unlikely that the relevant and important values would be affected in these areas due to the lack of development being permitted in these areas.

The area would continue to be managed as closed to OHVs. This eliminates the potential for effects on the designated critical habitat value from this type of surface disturbance. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The BLM would continue to manage the area as no surface occupancy for mineral leasing and closed to mineral materials development. This would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with these activities.

Alternative B

Under this alternative, the Deer Creek ACEC (570 acres) would add fisheries as part of the relevance and importance criteria. The BLM would manage the ACEC the same as under Alternative A, with the following exceptions: to protect the scenic qualities of the canyon, to ensure the long-term protection of the raptors in the area, to conserve cultural resources, and to protect ecologically intact habitat for wildlife. The area would also be managed to prioritize non-BLM-administered lands adjacent to the ACEC for acquisition.

The area would be managed as ROW avoidance. This could help minimize some effects from the types of activities that can cause soil erosion and impair scenic quality and wildlife habitat in the area.

The area would be managed as OHV limited. OHV use can damage and disrupt relevant and important values. OHV use can also spread seeds of invasive nonnative species or damage or remove native vegetation, allowing invasive, nonnative species to spread. This fuel buildup can increase the frequency and severity of wildfires, which can damage or destroy the relevant and important values.

The area would be managed as closed to mineral leasing. This would protect the scenic quality and wildlife habitat by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The BLM would manage the area as VRM Class II outside of the 200-acre Ishi Wilderness unit. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained.

Alternative C

The existing ACEC designation would not be retained. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Removing designation would create opportunities for resource uses, such as recreation, OHV and mechanized use, and livestock grazing. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the biological, cultural, and recreational resources from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Elder Creek

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the former Elder Creek ACEC (3,060 acres) was designated as Wilderness and is managed under the Wilderness Act.

Alternative B

Under this alternative, Elder Creek would be designated wilderness and would be managed under the Wilderness Act. The BLM would manage the area to mitigate effects of projects outside the Elder Creek boundaries if the proposed mitigation would benefit or promote the ACEC's relevance and importance criteria. Mitigation proposals would be considered on a case-by-case basis. The use of heavy equipment would require approval by the BLM Authorized Officer. The BLM would conduct wildland fire management to maintain the ACEC's relevant and important values.

The area would be managed to prioritize acquisition of nearby lands to add to the protection of sensitive resources, to add to the overall significance of the area, and to prioritize the area for access for scientific research. The BLM would manage the area so that ground-disturbing activities would only be allowed if they are consistent with the ACEC's relevant and important values. Consistent with the Archaeological Resources Protection Act and other laws and regulations, surface disturbances, such as through metal detection without a permit or other authority, would not be allowed by the public on lands designated as ACECs with identified relevant and important cultural values.

Alternative C

Impacts under this alternative would be the same as those described under Alternative B.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Forks of Butte Creek

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under this alternative, Butte Creek Canyon from above the Forks of Butte Creek to Helltown would continue to be managed as an ONA/ACEC (2,900 acres). The BLM would continue to manage the area as semi-primitive motorized. Also, the BLM would continue to manage the area to promote the acquisition of available, unimproved lands to protect the scenic quality and enhance the recreational experience. All the available commercial forest land within Butte Creek Canyon would continue to be managed for the enhancement of other resource values, and all other available commercial forest land would continue to be managed as restricted.

The BLM would continue to manage OHV travel as limited to designated routes in the area, which would minimize effects from soil compaction and the spread of invasive, nonnative species.

The area has been withdrawn from mineral entry (2,070 acres) under Public Land Order 5329 (January 18, 1973). This ensures the area's scenic values are maintained. Also, the significant recreational and historic values are adequately safeguarded from surface disturbances associated with this activity. The BLM would continue to manage the area to permit recreational mineral collection within the canyon. This activity can cause damage to the area's scenic values, but it adds to the significant recreational and historic values.

The BLM would continue to manage the area as VRM Class II. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained.

The area would continue to be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

Alternative B

Under this alternative, the Forks of Butte Creek ACEC (2,900 acres) would be managed as day use, except by special recreation permit. The area would be managed to prioritize fuels treatment (including both biological and chemical methods) and forest management for wildfire prevention and resilience within the ACEC. The area would also be managed to prioritize obtaining easements from landowners to obtain administrative and public access.

The BLM would manage the area to prioritize trail maintenance and development to allow for nonmotorized access and recreational use within the ACEC. The area would be managed to restrict ground-disturbing wildfire suppression with the Forks of Butte National Register Site, which comprises 24 acres of the 2,900-acre ACEC designation. All trail development and barriers would be analyzed and disclosed through site-specific, implementation-level NEPA analysis. Further, the BLM would manage the ACEC as follows to protect the scenic cultural resources and fisheries.

The BLM would manage the ACEC as a ROW exclusion area, so no new ROWs could be developed. This would protect the scenic cultural resources and fisheries by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The area would be managed as unavailable for livestock grazing, except for the Helltown parcels, which would be available. Managing the area as unavailable for livestock grazing would eliminate the potential effects of this use. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The area would be managed as OHV limited. Motorized and mechanized travel would be limited to designated routes, which could minimize the soil compaction and the effects that result, as well as greatly reduce or eliminate trampling of plants. It can also minimize the spread of invasive, nonnative species. Motor vehicle access to the day-use area would be seasonally closed, and a gate and/or barriers would be installed and maintained. This would further help minimize soil compaction and reduce the spread of invasive, nonnative species.

The BLM would manage the area as VRM Class II. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained.

The area would be managed as closed to mineral leasing. Surface disturbance associated with this surface-disturbing activity could damage or destroy the plants and cause soil erosion, disrupting the rare soil resources. The area would remain withdrawn from mineral entry under Public Land Order 5329. These management actions would ensure the values and resources are adequately safeguarded from surface disturbances associated with these activities.

The area would be managed as closed to mineral materials development. This would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This would also ensure the biological resources and geological values are adequately safeguarded from surface disturbances associated with this activity. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

Alternative C

Impacts under this alternative would be the same as those described under Alternative B, with the addition of the following management actions.

The area would be managed as closed to dispersed camping. This would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with this activity. The campground area would be managed as seasonally closed to motor vehicle access, and a gate and/or barriers would be installed and maintained. This would further ensure the relevant and important values are adequately safeguarded from surface disturbances associated with camping.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B, with the addition of developing cooperative management of the day-use area with other agencies and organizations, where practicable. The BLM would manage the ACEC as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the resources at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives. This would protect the scenic cultural resources and fisheries by preventing this type of surface-disturbing activity that could impair the relevant and important values.

Gilham Butte

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

The area would continue to be managed as the Gilham Butte ACEC (2,620 acres) for the preservation of late successional forest characteristics. The BLM would continue to manage the area under an activity plan to address site-specific needs, access, research proposals, and priorities.

The area would continue to be managed to be available for non-consumptive research and cone collecting. The BLM would manage the area to control wildland fire, disease, and insects to prevent spreading to other lands and to protect the existing forest conditions.

Alternative B

Under this alternative, the Gilham Butte ACEC would be expanded to 9,328 acres, as externally proposed (see **Appendix G**). The ACEC would be managed to protect late successional forests.

The area would be managed as OHV limited, except where it would be closed by deed restriction on acquired lands. OHV use would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the late successional forest characteristics. This would also help reduce soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain so if OHVs are allowed to access the area.

The BLM would manage the area as closed to the discharge of firearms where prohibited by deed restriction on acquired lands. This would ensure the relevant and important values are adequately safeguarded from impacts associated with firearm activities.

The ACEC would also be managed as a ROW exclusion area, so no new ROWs could be developed. This could protect the relevant and important values by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as closed to mineral leasing. This would ensure the values and resources are adequately safeguarded from surface disturbances associated with this activity. The area would be managed as closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This would also ensure the biological resources and geological values are adequately safeguarded from surface disturbances associated with this activity. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated. This area would be recommended for withdrawal from locatable mineral entry. This would ensure that activities that would disrupt the soil and habitat do not occur, thereby offering maximum protection.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock may also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The area would be managed to prioritize obtaining easements in this area to help maintain a corridor between Humboldt Redwoods State Park and the King Range National Conservation Area. Surface disturbances associated with easements could impair relevant and important values.

Alternative C

Under this alternative, the Gilham Butte area would be managed as an ACEC (2,620 acres).

The BLM would manage the ACEC as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the resources at the project level to minimize effects. ROW development would be designed to meet VRM

class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as OHVs limited to existing routes. Motorized and mechanized travel would be limited to existing routes, which would minimize the extent of soil disruption in the area; however, there would still be the potential for invasive, nonnative species introduction and spread.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as closed to mineral leasing. This would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with this activity. The area would be closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This would also ensure the biological resources and geological values are adequately safeguarded from surface disturbances associated with this activity. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated. The area would be recommended for withdrawal from locatable mineral entry. This would ensure that activities that would disrupt the soil and habitat do not occur, thereby offering maximum protection.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The area would be managed to prioritize obtaining easements in this area to help maintain a corridor between Humboldt Redwoods State Park and the King Range National Conservation Area.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B, except the area would be managed as ROW avoidance. ROW development could occur in the area under certain conditions; however, development activities and placement should consider the resources at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

Hawes Corner

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and

important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, Hawes Corner would continue to be managed as an ACEC (40 acres). The area would continue to be managed to acquire the available, unimproved privately owned portion of Orcutt grass habitat or to develop cooperative management agreements to protect the habitat.

The area would be managed as OHV closed, which would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with OHVs. This eliminates the potential for effects on the designated critical habitat value from this type of surface disturbance. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Domestic livestock grazing can spread the seeds of invasive, nonnative species that can outcompete and eradicate the fragile grass habitat. Trampling by livestock also compacts soil and disrupts the recharge of soil moisture into the habitat. Alteration to the hydrology and to the wet and dry cycles can reduce plant densities or extirpate the species.

Alternative B

Under this alternative, Hawes Corner would be designated as an ACEC (40 acres). The BLM would manage the area to protect communities of slender Orcutt grass. The area would be managed to prioritize obtaining easements from landowners to obtain administrative access. The BLM would manage the area to prioritize acquisition of nearby lands to preserve the hydrologic regime. The BLM would work cooperatively with surrounding landowners to prevent trespass, unauthorized grazing, and cross-country OHV use.

The area would be managed as a ROW exclusion area, so no new ROWs could be developed. This would protect the communities of slender Orcutt grass by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The area would be managed as OHV closed, which would ensure the communities of slender Orcutt grass are adequately safeguarded from surface disturbances associated with OHV activities. This eliminates the potential for effects on the habitat value from this type of surface disturbance. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as closed to mineral leasing. This would prohibit surface disturbance associated with this type of activity, thereby preventing damage to the communities of slender Orcutt grass. The area would be managed as closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the

characteristic landscape and damage resources. This would ensure the biological resources and geological values are adequately safeguarded from surface disturbances associated with this activity. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock may also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

Alternative C

Under this alternative, the Hawes Corner ACEC designation would not be retained. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Removing this designation would create opportunities for resource uses, such as recreation, OHV and mechanized use, and livestock grazing. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the communities of slender Orcutt grass from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

laqua Buttes

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under this alternative, the BLM would continue to manage the laqua Buttes as an ACEC (1,110 acres) for the preservation of late successional forest characteristics. An ACEC activity plan would be prepared by the BLM to address site-specific needs, access, research proposals, and priorities. The area would continue to be available for non-consumptive research and cone collecting. The area would also continue to be managed to control wildland fire, disease, and insects to prevent spreading to other lands and to protect the existing forest conditions.

Alternative B

Under this alternative, the BLM would manage laqua Buttes as an ACEC (1,110 acres). The BLM would manage the ACEC to protect late successional forests.

The area would be managed as ROW avoidance. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the resources at the project level to minimize effects. ROW development would be designed to meet VRM class objectives,

which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the late successional forests.

The area would be managed as OHV limited. Motorized travel would be limited to designated roads, trails, and washes, which would help keep recreationists in designated areas and away from sensitive late successional forests.

The area would be managed as closed to mineral leasing. This would ensure the late successional forests are adequately safeguarded from surface disturbances associated with this activity. The area would be recommended for withdrawal from locatable mineral entry. This would ensure the values and resources are adequately safeguarded from surface disturbances associated with this activity. The area would be managed as closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This would also ensure the late successional forest characteristics are adequately safeguarded from surface disturbances associated with this activity. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

Alternative C

Under this alternative, the Inyo Buttes ACEC designation would not be retained, and late successional forest values would be managed under LSR designations. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Removing designation would create opportunities for resource uses, such as recreation, OHV and mechanized use, and livestock grazing. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Lacks Creek

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for

resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under this alternative, the BLM would manage Lacks Creek as an ACEC (7,480 acres) for the preservation of old-growth characteristics.

Alternative B

Under this alternative, the Lacks Creek ACEC would be expanded to 2,140 acres. The BLM would manage the ACEC to protect late successional forests. The area would be managed to apply seasonal limitations on mountain biking, which would be considered necessary to limit conflicts and provide for public safety.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the resources at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as OHV limited. OHVs would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the fragile late successional forests. This also would help reduce soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain so if OHVs are allowed to access the area.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as closed to mineral leasing. This would ensure the old-growth characteristics and resources are adequately safeguarded from surface disturbances associated with this activity. The area would be managed as closed to mineral materials development unless for restoration purposes. Closing the area to this activity would help preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This would ensure the old-growth characteristics are adequately safeguarded from surface disturbances associated with this activity. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

Alternative C

Under this alternative, the Lacks Creek ACEC designation would not be retained. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Removing designation would create opportunities for resource uses, such as recreation, OHV and mechanized use, and livestock grazing. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Manila Dunes

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under this alternative, the BLM would continue to manage Manila Dunes as an ACEC (150 acres) for protection and interpretation of natural values. The BLM would prepare an ACEC activity plan for Manila Dunes after completion of the Humboldt County Beach and Dunes Management Plan. The ACEC activity plan would be consistent with this plan.

The area would continue to be managed as OHV limited. This would prevent the expansion of motorized use, prohibit new roads, and protect horse, foot, and cycling trails. This would also help protect the relevant and important values by maintaining intact landscapes.

Alternative B

Under this alternative, the Manila Dunes ACEC would be renamed as the Ma-le'l Dunes ACEC and expanded to 180 acres. The ONA designation would not be retained. The BLM would manage the ACEC as follows to protect sensitive plant and wetland habitat and cultural resources. The BLM would limit surface-disturbing activities and allow them only if they are consistent with relevant and important values, or in an existing ROW.

This area would be managed as ROW exclusion outside of existing ROWs. This would protect the sensitive plant and wetland habitat and cultural resources by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The area would be managed as closed to OHV use, mechanized vehicles, and e-bikes. This would eliminate the potential for effects on sensitive plant and wetland habitat and cultural resources from surface disturbances associated with these activities. This would ensure the relevant and important values are

adequately safeguarded. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The BLM would manage the area as VRM Class II. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained.

The area would be managed as closed to mineral leasing, recommended for withdrawal from mineral entry, and closed to mineral materials development. This would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This management would ensure the sensitive plant and wetland habitat and cultural resources are adequately safeguarded from surface disturbances associated with these activities. Furthermore, the potential for the spread of invasive, nonnative species from vehicles and soil disturbance would be eliminated.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The area would be managed as closed to dispersed camping. This would ensure the sensitive plant and wetland habitat and cultural resources are adequately safeguarded from surface disturbances associated with camping.

Alternative C

The BLM would manage the area the same as under Alternative B, with the addition of the following exceptions.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities would consider scenic values at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as open to locatable mineral entry. This would expose the sensitive plant and wetland habitat and cultural resources to surface disturbances associated with this activity; therefore, the sensitive plant and wetland habitat and cultural resources would not be adequately safeguarded.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Red Mountain

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats,

travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the former Red Mountain ACEC (6,800 acres) was designated as Wilderness and is managed under the Wilderness Act.

Alternative B

Under this alternative, Red Mountain would be managed under the Wilderness Act. The BLM would manage the area to mitigate the effects of projects outside the Red Mountain boundaries if the proposed mitigation would benefit or promote the ACEC's relevance and importance criteria. Mitigation proposals would be considered on a case-by-case basis. The use of heavy equipment would require approval by the BLM Authorized Officer. The BLM would conduct wildland fire and fuels treatment (including both biological and chemical methods) management to maintain the ACEC's relevant and important values. The area would be managed to prioritize acquisition of nearby lands to add to the protection of sensitive resources, to add to the overall significance of the area, and to prioritize the ACEC for access for scientific research.

The area would be managed so that ground-disturbing activities would only be allowed if they would be consistent with the ACEC's relevant and important values. In instances where the cumulative effects of casual use could result in more than negligible disturbance, the BLM may establish specific areas to limit further impacts.

Alternative C

Impacts under this alternative would be the same as those described under Alternative B.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Sacramento Island

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values. The area has been withdrawn from locatable mineral entry, which would reduce opportunities for flattening, destroying, or removing vegetation of desired plant communities and special status plant species.

Alternative A

Under Alternative A, the BLM would continue to manage the Sacramento Island area as an ACEC (90 acres). The BLM would maintain an ACEC management plan for Sacramento Island that identifies specific land acquisition and cooperative agreement needs for adjacent lands.

The area would continue to be managed as no surface occupancy for mineral leasing. This would ensure the relevant and important values of this ACEC are adequately safeguarded from surface disturbances associated with this activity. Mineral materials disposals in this area would continue to be allowed only if such actions are intended to enhance the natural values of this area (that is, anadromous salmonid habitat, waterfowl habitat, or long-term vegetation management).

The BLM would continue to manage the area as closed to OHV use, which would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with OHV activities. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The BLM would continue to manage the area as VRM Class II. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained. In addition, VRM Class II would restrict large-scale development if it cannot meet the VRM Class II objectives. This would also limit the effect of disturbance on cultural resources.

The area would continue to be managed as not available for livestock grazing, which would eliminate the potential effects of this use. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock may also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

Alternative B

Under Alternative B, the Sacramento Island ACEC (90 acres) designation would be retained. The area would be managed to prioritize riparian restoration, with an emphasis on removal of nonnative species. The BLM would manage the area as follows to protect rare riparian habitat and fisheries.

The BLM would manage the ACEC as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities would consider the relevant and important values at the project level to minimize effects.

The area would be closed to OHV use, and the associated impacts would be the same as those described under Alternative A.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage this area's relevant and important values.

The area would be managed as closed to mineral leasing. This would ensure the values and resources are adequately safeguarded from surface disturbances associated with this activity. The area would be managed

as closed to mineral materials development, unless for restoration purposes, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This would ensure the biological resources and geological values are adequately safeguarded from surface disturbances associated with this activity. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The area would be managed as unavailable for livestock grazing, except for targeted grazing for weed control on a case-by-case basis. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock may also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The area would be closed to camping and campfires. This would ensure the values and resources are adequately safeguarded from surface disturbances associated with these activities.

Alternative C

The Sacramento Island ACEC designation would not be retained. Without this ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Removing designation would create opportunities for resource uses, such as recreation, OHV and mechanized use, and livestock grazing. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Sacramento River Bend

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under this alternative, the BLM would continue to manage the Sacramento River Bend area as an ACEC (18,600 acres).

The area would continue to be managed as no surface occupancy for mineral leasing within 1 mile of the Sacramento River. This would ensure the values and resources are adequately safeguarded from surface disturbances associated with this activity.

The BLM would continue to manage the area as semiprimitive motorized and roaded natural. The area would continue to be managed as OHVs limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the cultural resources and rare habitats. This also would help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain so if OHVs are allowed to access the area.

The BLM would continue to manage the area as VRM Class II. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained. In addition, VRM Class II would restrict large-scale development if it cannot meet the VRM Class II objectives. This would also limit the effect of disturbance on cultural and paleontological resources.

The area would continue to be managed to allow livestock grazing in upland areas to improve the desired plant community. The BLM would close riparian areas to livestock grazing. This would eliminate the potential effects on cultural resources and rare habitats from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock may also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The BLM would continue to manage the area to permit mineral materials disposal only if such action would not adversely affect habitat or management of the desired plant community.

The area would continue to be managed to acquire available unimproved lands that contain (in descending priority) high-priority habitat along the Sacramento River, as depicted in the 1988 Sacramento River Riparian Atlas; lands that front the Sacramento River; lands that provide physical access to BLM-administered land; lands that contain known or potential wetland or special status species habitat; lands that contain important cultural resources; and lands that facilitate overall public management within the area.

Alternative B

Under this alternative, the Sacramento River Bend ACEC would be expanded to 20,420 acres. Approximately 1,950 acres would be added due to acquisitions since approval of the 1993 Redding RMP and to make it easier to manage some parcels for the relevance and importance criteria. The BLM would manage the area to protect cultural resources and rare habitats (vernal pools and wetlands that support slender Orcutt grass).

The area would be managed to prioritize control of nonnative, invasive species; to add to the wetlands to provide for additional waterfowl habitat; and to manage for riparian relevance and importance. The area would also be managed to prioritize the following: prescribed burning (includes broadcast burning or isolated pile burning) to mimic the natural wildfire return or to reintroduce wildland fire into the ACEC that meets multiple resource objectives; land acquisition to maintain riparian connectivity and to selectively expand the National Register-quality archaeological landscape; restoration for riparian areas; cultural resource interpretation at trailheads, parking lots, and select locations; pursuing barriers or gates to emphasize day-use areas to protect natural and cultural resources; an emphasis on infrastructure at Bass

Pond for recreational day use, including ADA facilities and hardened trails around the recreational fishing pond; trail management to reduce redundant and unsustainable trails; a recreation program to balance and administer SRPs to conserve the identified recreation outcomes; manage visitor use; manage public access; protect recreational, cultural, and natural resources; and provide for the health and safety of visitors; earmark the ACEC as an outstanding location for scientific study; prioritize land acquisition for lands that contribute to the ACEC's relevant and important values; and pursue easements for recreational and administrative access.

The area would be managed as ROW exclusion outside of existing ROWs. This would eliminate the potential for effects on the relevant and important values from this type of surface disturbance. This would help protect the cultural resources and rare habitats by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The area would be managed as OHV limited. OHVs would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the cultural resources and rare habitats. This would also help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain so if OHVs are allowed to access the area.

The area would be managed as closed to mineral leasing. This would ensure the cultural resources and rare habitats are adequately safeguarded from surface disturbances associated with this activity. The area would be managed as closed to mineral materials development. This would eliminate the potential for effects on the relevant and important values from this type of surface disturbance. This would help protect the cultural resources and rare habitats by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The BLM would close the area to overnight camping in parking lots, on trailheads, or by roads. This would help protect the cultural resources and rare habitats by limiting this type of surface-disturbing activity that could impair the relevant and important values. The area would be managed as closed to camping within 500 feet of roads within the Paynes Creek wetlands. This would help protect the cultural resources and rare habitats by limiting this type of surface-disturbing activity that could impair the relevant and important values.

The area would be managed as unavailable for livestock grazing in riparian areas. This would eliminate the potential effects from livestock grazing in the riparian areas. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock may also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The BLM would manage the area as VRM Class III within the ACEC boundaries. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values. The area would be managed as VRM Class II where Wild and Scenic WSR suitable segments are located, as described in the WSR Suitability Report (**Appendix I**), and as VRM Class II in the Sacramento River Bend lands with wilderness characteristics unit (Subunit 2). The objective of VRM

Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the relevant and important values would be maintained.

The area would be managed to limit SRP and non-SRP group uses to minimize resource impacts in the spring and fall. This would help protect the cultural resources and rare habitats by limiting these types of surface-disturbing activities that could impair the relevant and important values.

The BLM would limit target shooting to designated areas. The BLM would engage with stakeholders to determine designated shooting areas. The identification of those areas would be analyzed and disclosed through subsequent implementation-level NEPA analyses. This would help protect the cultural resources and rare habitats by limiting this type of surface-disturbing activity that could impair the relevant and important values.

Alternative C

Under this alternative, the Sacramento River Bend ACEC (18,600 acres) designation would be carried forward. The BLM would manage the ACEC the same as it would manage the ACEC under Alternative B, except camping would be allowed at Perry Riffle (14-day limit), and the area would be managed as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

Alternative D

The impacts under this alternative would be the same as the impacts described under Alternative B, except the width expansions to existing ROW areas would be considered on a case-by-case basis. Larger ROW expansion could increase surface disturbance, which could damage the resources and values. Additionally, camping would be prohibited within 0.25 miles of roads in the Sacramento Bend ERMA. This would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with this activity.

Shasta and Klamath River Canyon

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under this alternative, all BLM-administered land in the Shasta River Canyon below the Highway 263 bridge crossing below Yreka Creek to the confluence with the Klamath River and within a quarter mile of the normal high-water mark would continue to be managed as an ACEC (1,210 acres).

Alternative B

Under this alternative, the Shasta and Klamath River Canyon ACEC designation (1,270 acres) would be retained. It would be managed according to the existing requirements of the Klamath WSR identified under Alternative A, with additional management to protect rare and sensitive riparian and fisheries habitat values. The BLM would work with state agencies and partners on anadromous fish habitat enhancement.

The area would be managed as ROW avoidance outside of existing ROWs. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the rare and sensitive riparian and fisheries habitat at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as OHV limited. OHV use would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the rare and sensitive riparian and fisheries habitat. This also would help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain so if OHVs are allowed to access the area.

The area would be recommended for withdrawal from locatable mineral entry and closed to mineral leasing. The area would be managed as closed to mineral materials development, unless for restoration purposes, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This management would ensure the rare and sensitive riparian and fisheries habitat are adequately safeguarded from surface disturbances associated with this activity. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

Alternative C

Under this alternative, the Shasta and Klamath River Canyon ACEC designation would not be retained. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as

soils are disturbed and seeds are deposited. Removing designation would create opportunities for resource uses, such as recreation, OHV and mechanized use, and livestock grazing. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the rare and sensitive riparian and fisheries habitat from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

South Fork Eel River

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the former South Fork Eel River Watershed ACEC (7,110 acres) was designated as Wilderness and is managed under the Wilderness Act.

Alternative B

Under this alternative, South Fork Eel River would be wilderness and would be managed under the Wilderness Act. The BLM would manage the area to mitigate effects of projects outside the South Fork Eel River boundaries if the proposed mitigation would benefit or promote the ACEC's relevance and importance criteria. Mitigation proposals would be considered on a case-by-case basis. The use of heavy equipment would require approval by the BLM Authorized Officer. The BLM would conduct wildland fire and fuels treatment (including both biological and chemical methods) management to maintain the ACEC's relevant and important values.

The area would be managed to prioritize acquisition of nearby lands to add to the protection of sensitive resources, to add to the overall significance of the area, and to prioritize ACECs for access for scientific research. The area would be managed so that ground-disturbing activities would only be allowed if they are consistent with the ACEC's relevant and important values. In instances where the cumulative effects of casual use could result in more than negligible disturbance, the BLM may establish specific areas to limit further impacts.

Alternative C

Impacts under this alternative would be the same as those described under Alternative B.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Swasey Drive

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under this alternative, Swasey Drive would continue to be designated as an ACEC (470 acres). The BLM would continue to manage the ACEC as semiprimitive motorized and to conserve and interpret prehistoric and historic archaeological resources on public lands.

The area would continue to be managed as OHVs limited to designated roads and trails. Limiting OHV use to designated routes would help keep recreationists on established routes and away from the prehistoric and historic archaeological resources. This would also help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain so if OHVs are allowed to access the area.

Alternative B

Under this alternative, the Swasey Drive ACEC would be combined with the internally nominated Upper and Lower Clear Creek ACEC and other nearby lands and renamed the Swasey Drive Clear Creek Greenway ACEC (see the *Swasey Drive Clear Creek Greenway ACEC* section and **Appendix G**).

Alternative C

Under this alternative, the Swasey Drive ACEC (470 acres) designation would be retained. The area would be managed to establish an interpretive/educational center to assist the public in understanding the relevance and importance of the ACEC. The BLM would collaborate with the Tribes on development and presentation of materials at this center. The BLM would manage the ACEC to protect rare cultural resources. The area would be managed to include limitations to large, organized recreational groups if monitoring indicates adverse impacts on cultural resources in the area. These limitations could include limitations on the group size, limitations on the number of groups annually, and closure of impacted areas to organized events.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the rare cultural resources at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local

native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the rare cultural resources.

The BLM would manage the area as closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This would ensure the rare cultural resources are adequately safeguarded from surface disturbances associated with this activity. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated. The area would be managed as closed to mineral leasing. This would ensure the rare cultural resources are adequately safeguarded from surface disturbances associated with this activity.

The area would be managed so that additional limited trail development in the ACEC would only be allowed in designated areas with a low potential for conflicts or impacts on cultural or natural resources. The BLM would continue to maintain the designated trails within the ACEC. The trail signage would use the following new name for the area: Swasey Recreation and Heritage Area. The trails would also be managed to promote a trail stewardship program to develop a trail monitoring program to gauge the impacts on sedimentation and cultural resources. Additional trail development would be allowed only in designated areas with a low potential for conflicts or impacts on cultural or natural resources. Also, future trailhead, road, and parking area improvements and expansions would only be allowed if they are consistent with relevant and important values. Future expansion of overflow and event parking would only be allowed if it is consistent with relevant and important values. This would ensure the rare cultural resources are adequately safeguarded from surface disturbances associated with new trail development.

Alternative D

Impacts under this alternative would be the same as those described under Alternative C.

Proposed ACECs

Mineral development activities within ACECs can contribute to impacts on relevant and important values.

Table D-83 summarizes mineral management actions from **Table B-1** in **Appendix B** for proposed ACECs by alternative.

Table D-83
Mineral Management Actions for Proposed ACECs

ACEC	Alternative A	Alternative B	Alternative C	Alternative D
Beegum Creek Gorge	No similar management action.	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B
Black Mountain	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B
Butte Creek	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Open to mineral materials development	Same as Alternative B
Corning Vernal Pools	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B

D. Affected Environment and Environmental Consequences (Areas of Critical Environmental Concern)

ACEC	Alternative A	Alternative B	Alternative C	Alternative D
Deer Creek	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Open to mineral materials development	Same as Alternative B.
Eden Creek	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Open to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B
Eden Valley	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B.	Same as Alternative B
Forks of Butte Creek	No similar management action	Closed to leasable mineral development Recommended for withdrawal from locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B.	Same as Alternative B
Gilham Butte	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B.	Same as Alternative B

D. Affected Environment and Environmental Consequences (Areas of Critical Environmental Concern)

ACEC	Alternative A	Alternative B	Alternative C	Alternative D
Grass Valley Creek	No similar management action	Closed to leasable mineral development Recommended for withdrawal from locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B.	Same as Alternative B.
Hawes Corner	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B
laqua Butte	No similar management action	No surface occupancy for leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B
Lacks Creek	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B

D. Affected Environment and Environmental Consequences (Areas of Critical Environmental Concern)

ACEC	Alternative A	Alternative B	Alternative C	Alternative D
Ma-le'l (formerly Manila) Dunes	No similar management action	Closed to leasable mineral development Recommended for withdrawal from locatable mineral exploration and development Closed to mineral materials development	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B
North Fork Eel	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B
North Table Mountain	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B
Sacramento Island	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B

D. Affected Environment and Environmental Consequences (Areas of Critical Environmental Concern)

ACEC	Alternative A	Alternative B	Alternative C	Alternative D
Sacramento River Bend	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B.	Same as Alternative B
Shasta and Klamath River Canyon	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B
Sheep Rock	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B
South Spit	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B

D. Affected Environment and Environmental Consequences (Areas of Critical Environmental Concern)

ACEC	Alternative A	Alternative B	Alternative C	Alternative D
Swasey Drive	Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC.	Same as Alternative A.	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development
Swasey Drive Clear Creek Greenway	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative A	Split into two separate ACECs (Swasey Drive, Upper and Lower Clear Creek).
Upper and Lower Clear Creek	No similar management action	Same as Alternative A.	Same as Alternative A.	Closed to leasable mineral development Open to locatable mineral exploration and development Open to mineral materials development; free use allowed by other agencies only
Upper Burney Dry Lake and Baker Cypress	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B

ACEC	Alternative A	Alternative B	Alternative C	Alternative D
Upper Klamath Bench	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B
Upper Mattole	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Open to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Open to mineral materials development	Same as Alternative B
Willis Ridge	No similar management action	Closed to leasable mineral development Open to locatable mineral exploration and development Closed to mineral materials development	Not managed as an ACEC. Leasable – standard stipulations Open to locatable mineral exploration and development Closed to mineral materials development	Same as Alternative B

Source: BLM GIS 2023

Beegum Creek Gorge

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the Beegum Creek Gorge area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the Beegum Creek Gorge area would be designated as an ACEC (4,380 acres). The BLM would manage the ACEC to protect scenic, fisheries, and wildlife resources; ecological intactness; and rare and sensitive geological and lithological features that support rare and endemic serpentine plant species. The area would be managed to prioritize scientific study, pursue recreational development to increase nonmotorized access to the gorge.

The area would be managed as a ROW exclusion area, so no new ROWs could be developed. This would protect the relevant and important values by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The area would be managed as OHV limited. OHV use would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the relevant and important values. This would also help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain if OHVs are allowed to access the area.

The BLM would manage the area as VRM Class II. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained.

The area would be closed to mineral leasing. This would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with this activity.

The area would be unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The area would be recommended for withdrawal from locatable mineral entry. This would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with this activity. The area would be closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This would ensure the scenic, fisheries, and wildlife resources; ecological intactness; and rare and sensitive geological and lithological features that support rare and endemic serpentine plant species are adequately safeguarded from surface disturbances associated with this activity.

Alternative C

Under this alternative, the Beegum Creek Gorge area would not be managed as an ACEC. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Black Mountain

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the Black Mountain area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the Black Mountain area would be designated as an ACEC (1,110 acres). The area would be managed to protect irreplaceable coniferous forests habitat with old-growth characteristics, unique geological features, cultural resources, and wildlife. The area would be managed to prioritize the ACEC for access for scientific research.

The BLM would manage the area as a ROW exclusion area, so no new ROWs could be developed. This would protect the irreplaceable old-growth coniferous forests habitat, unique geological features, cultural resources, and wildlife by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The area would be managed as OHV limited. OHV use would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the irreplaceable old-growth coniferous forests habitat, unique geological features, cultural resources, and wildlife. This also would help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain if OHVs are allowed to access the area.

The area would be managed as available for livestock grazing; there would be 1,100 acres of the ACEC that overlap with an active livestock grazing allotment. Because the BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP, impacts the ACEC would be limited to those areas of overlap with the active allotment. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer.

This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as closed to mineral leasing and closed to mineral materials development. This would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This management would ensure the irreplaceable old-growth coniferous forests habitat, unique geological features, cultural resources, and wildlife are adequately safeguarded from surface disturbances associated with these activities.

Alternative C

Under this alternative, the Black Mountain ACEC would not be designated. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Corning Vernal Pools

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the Corning Vernal Pools area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the Corning Vernal Pools area would be designated as an ACEC (170 acres). The BLM would manage the area to protect habitat that supports threatened and endangered species. The area would be managed to prioritize acquisition of adjacent land with vernal pools and hydrologic connection for existing pools and to prioritize acquiring administrative access with easements and acquisitions.

The area would be managed as a ROW exclusion area, so no new ROWs could be developed. This would protect the rare critical habitat that supports threatened and endangered species by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The area would be managed as OHV closed, which would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with OHVs. This would eliminate the

potential for effects on the rare critical habitat that supports threatened and endangered species from this type of surface disturbance. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as closed to mineral leasing. This would ensure the rare critical habitat that supports threatened and endangered species is adequately safeguarded from surface disturbances associated with this activity. The area would be managed as open to locatable mineral entry. This would expose the rare critical habitat that supports threatened and endangered species to surface disturbances associated with this activity. The area would be closed to mineral materials development, which would preserve the rare critical habitat that supports threatened and endangered species by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with this activity.

The area would be managed to prioritize prescribed burning (including broadcast burning or isolated pile burning) to mimic natural wildfire or reintroduce wildland fire into the ACEC that meets relevant and important values. This would expose the rare critical habitat that supports threatened and endangered species to surface disturbances associated with these activities.

The area would be managed as available to livestock grazing if grazing is compatible with vernal pool ecology and the relevant and important values. This would expose the rare critical habitat that supports threatened and endangered species to surface disturbances associated with this activity.

Alternative C

Under this alternative, the Corning Vernal Pools area would not be managed as an ACEC. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Eden Creek

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and

important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the Eden Creek area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the Eden Creek area would not be designated as an ACEC. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Removing designation would create opportunities for resource uses, such as recreation, OHV and mechanized use, and livestock grazing. Alternative B would have the fewest restrictions for Eden Creek and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative C

Under this alternative, the Eden Creek area would be designated as an ACEC (4,590 acres as externally nominated). The area would be managed to prioritize improved access through land acquisition or easements; to incorporate acquired adjacent lands into the ACEC, as appropriate, and if they are consistent with maintaining relevant and important values; and to prioritize rare plant surveys.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities would consider the relevant and important values at the project level to minimize effects. They also would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as OHV limited. OHV use would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the relevant and important values. This also would help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain so if OHVs are allowed to access the area.

The BLM would manage the area as VRM Class II (where the area overlaps the WSR corridor) and VRM Class III (the remaining area). The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as no surface occupancy for mineral leasing, recommended for withdrawal from locatable mineral entry, and closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the

characteristic landscape and damage resources. This would ensure the biological resources and diverse landforms of the ACEC are adequately safeguarded from surface disturbances associated with this activity.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

Alternative D

The proposed Eden Creek ACEC would not be designated; instead, it would be included in the Eden Valley ACEC. The BLM would manage the ACEC to protect rare and unique geological features, rare and endemic plants and plant communities, and the cold-water source for listed salmonids. The BLM also would manage the ACEC to conserve cultural and archaeological values. The area would be managed to prioritize improved access through land acquisition or easements; to incorporate acquired adjacent lands into the ACEC, as appropriate, and if they are consistent with maintaining relevant and important values; and to prioritize rare plant surveys.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the relevant and important values at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as OHV limited. OHV use would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the relevant and important values. This also would help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain if OHVs are allowed to access the area.

The BLM would manage the area as VRM Class II in the WSA and VRM Class III for the remaining area. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained.

The area would be managed as closed to mineral leasing and recommended for withdrawal from locatable mineral entry. These would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with these activities. The area would be managed as closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This management would ensure the rare and unique geological features, rare and endemic plants and plant communities, and cold-water sources for listed salmonids are adequately safeguarded from surface disturbances associated with this activity.

The area would be managed as unavailable to livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The area would be managed as open to dispersed camping. This would expose the relevant and important values to surface disturbances associated with this activity.

Eden Valley

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the Eden Valley area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the Eden Valley area would be designated as an ACEC (10,810 acres as internally nominated). The BLM would manage the ACEC to protect rare and unique geological features, rare and endemic plants and plant communities, and the cold-water source for listed salmonids. The BLM also would manage the ACEC to conserve cultural and archaeological values. The area would be managed to prioritize improved access through land acquisition or easements; to incorporate acquired adjacent lands into the ACEC, as appropriate, and if they are consistent with maintaining relevant and important values; and to prioritize rare plant surveys.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the relevant and important values at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as OHV limited. OHV use would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the relevant and important values. This also would help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain if OHVs are allowed to access the area.

The BLM would manage the area as VRM Class II in the WSA and VRM Class III for the remaining area. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained.

The area would be managed as closed to mineral leasing and recommended for withdrawal from locatable mineral entry. These would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with these activities. The area would be managed as closed to mineral

materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This management would ensure the rare and unique geological features, rare and endemic plants and plant communities, and cold-water sources for listed salmonids are adequately safeguarded from surface disturbances associated with this activity.

The area would be managed as unavailable to livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The area would be managed as open to dispersed camping. This would expose the relevant and important values to surface disturbances associated with this activity.

Alternative C

Under this alternative, the Eden Valley ACEC would not be designated. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Grass Valley Creek

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the Grass Valley Creek area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the Grass Valley Creek area would be designated as an ACEC (19,560 acres); this area was externally and internally proposed (**Appendix G**). The area would be managed to protect fragile, highly erosive soils; reduce undesired sediment delivery to the Trinity River; and maintain the important stronghold to climate change and ecosystem resiliency and diversity. The area would be managed to maintain existing roads to minimize erosion and sedimentation. The area would be managed per the Grass Valley Fire Management Plan and subsequent wildland fire management planning, to promote use of

wildfire and prescribed fire to manage fuel loading and wildland fire behavior. Suppression techniques that result in the least amount of resource damage to the underlying granitic soils would be used.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the relevant and important values at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as OHV limited, so OHVs would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the relevant and important values. This also would help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain if OHVs are allowed to access the area.

The BLM would manage the area VRM Class III north of Highway 299. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The BLM would manage the area as VRM Class II south of Highway 299. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained.

The area would be managed as closed to mineral leasing, recommended for withdrawal from mineral entry, and closed to mineral materials development, unless for restoration purposes, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. These would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with these activities. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The area would be unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The area would be managed so that the use of heavy mechanical equipment (i.e., dozers) would be restricted to existing roads; this would ensure passage for suppression equipment and crews unless otherwise authorized by the Redding BLM Authorized Officer. Restricting heavy mechanical equipment to existing roads would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with these activities.

Alternative C

Under this alternative, the Grass Valley Creek area would be designated as an ACEC (13,070 acres), as internally proposed. Impacts under this alternative would be the same as those described under

Alternative B. However, fewer acres would be designated as an ACEC, so the impacts would be more intense.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

North Fork Eel

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the North Fork Eel area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the North Fork Eel area would be designated as an ACEC (500 acres). The BLM would manage the area to protect sensitive geological and lithological features, along with fisheries and wildlife resources. The area would be managed to prioritize acquisition along anadromous fish streams.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the sensitive geological and lithological features, along with fisheries and wildlife resources, at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as OHV closed, which would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with OHVs. This would eliminate the potential for effects on the sensitive geological and lithological features, along with fisheries and wildlife resources, from this type of surface disturbance. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The BLM would manage the area as VRM Class II in the WSR corridor and VRM Class III in the remaining acres. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect

the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as closed to mineral leasing and closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. This management would ensure the sensitive geological and lithological features, along with fisheries and wildlife resources, are adequately safeguarded from surface disturbances associated with these activities.

The area would be unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing can spread the seeds of invasive, nonnative species that can impair sensitive geological and lithological features, along with fisheries and wildlife resources. Trampling by livestock also compacts soil and disrupts the recharge of soil moisture into the habitat. Alteration to hydrology and to the wet and dry cycles can reduce plant densities or extirpate plant species.

Alternative C

The North Fork Eel ACEC would not be designated. Old-growth characteristics would be managed under LSR designations. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

North Table Mountain

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the North Table Mountain area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the North Table Mountain area would be designated as an ACEC (50 acres). The BLM would manage the ACEC to protect habitat that supports the rare Butte County golden clover (*Trifolium jokerstii*). The area also would be managed to prioritize acquisition of nearby land with vernal pools and hydrologic connection for existing pools, to include those lands as part of the ACEC, and to acquire administrative access with easements and acquisitions.

The area would be managed as a ROW exclusion area, so no new ROWs could be developed. This would help protect the habitat that supports the rare Butte County golden clover by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The area would be managed as OHV closed, which would ensure the habitat that supports the rare Butte County golden clover is adequately safeguarded from surface disturbances associated with OHVs. This would eliminate the potential for effects on the habitat that supports the rare Butte County golden clover from this type of surface disturbance. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be closed to mineral leasing and recommended for withdrawal from locatable mineral entry. The area would also be managed as closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. These would ensure the habitat that supports the rare Butte County golden clover is adequately safeguarded from surface disturbances associated with these activities.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations that help support the rare Butte County golden clover. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

Alternative C

Under this alternative, the North Table Mountain area would not be managed as an ACEC. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Sheep Rock

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and

important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the Sheep Rock area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the Sheep Rock area would be designated as an ACEC (1,410 acres). The area would be managed to protect irreplaceable scenic, wildlife, historic, and cultural values. If the USFWS proposes bighorn sheep reintroduction in this area, the ACEC would be unavailable for domestic sheep grazing or trailing. The Yreka Trail would be available for cattle trailing which could expose the scenic, wildlife, historic, and cultural values to surface disturbances associated with this activity; however, cattle trailing would be a continuation of the historical use of the trail.

The BLM would manage the ACEC as a ROW exclusion area, so no new ROWs could be developed. This would protect the irreplaceable scenic, wildlife, historic, and cultural values by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The area would be managed as OHV limited. OHV use would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the irreplaceable scenic, wildlife, historic, and cultural values. This also would help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain so if OHVs are allowed to access the area.

The BLM would manage the area as VRM Class II. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic relevant and important value would be maintained.

The area would be managed as closed to mineral leasing and closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. These would ensure the irreplaceable scenic, wildlife, historic, and cultural values are adequately safeguarded from surface disturbances associated with these activities.

The area would be managed to prioritize scientific studies, acquire lands near the ACEC, and pursue easements for administrative and public access.

Alternative C

Under this alternative, the Sheep Rock ACEC would not be designated. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

South Spit

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the South Spit area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the South Spit area would be designated as an ACEC (630 acres) once BLM acquires fee ownership. The area would be managed to protect sensitive wildlife, plant, and wetland habitat and cultural resources. The area would be managed to prioritize conserving and recovering critically imperiled vegetation types, maintain and promote natural dune processes, maintain the pristine condition of archaeological sites, and prioritize acquisition within the spit area.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the sensitive plant and wetland habitat and cultural resources at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as OHV limited. OHV use would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the sensitive plant and wetland habitat and cultural resources. This also would help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain if OHVs are allowed to access the area.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as closed to mineral leasing and closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise

contrast with the characteristic landscape and damage resources. These would ensure the sensitive plant and wetland habitat and cultural resources are adequately safeguarded from surface disturbances associated with these activities.

The area would be managed as closed to dispersed camping. This would ensure the sensitive plant and wetland habitat and cultural resources are adequately safeguarded from surface disturbances associated with this activity.

Alternative C

Under this alternative, the South Spit area would not be designated as an ACEC. The area would be managed according to existing stipulations in the conservation easement. Even though this South Spit area would not be designated under Alternative C, coastal and recreation management would help protect the relevant and important values by restricting unmanned aerial vehicles to only be allowed within 300 feet of temporary or permanent plover protection areas. Also, the area would be managed so that OHV wave slope access may be restricted on a case-by-case basis, as necessary to protect nesting plovers and plover habitat.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B but would also include the following. Public lands would be available for dispersed recreation, for day use only. No OHVs would be allowed except on vehicle access corridors and wave slope. No vehicles would be allowed on the wave slope within the plover restoration area during plover season. Casual collecting would be allowed year-round. This would expose wildlife, plant, and wetland habitat, as well as cultural resources, to the surface disturbances associated with these activities.

Swasey Drive Clear Creek Greenway

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the Swasey Drive Clear Creek Greenway would not be proposed for ACEC designation.

Alternative B

Under this alternative, the Swasey Drive Clear Creek Greenway would be designated as an ACEC (5,960 acres). This area would consist of the Swasey Drive ACEC, Upper and Lower Clear Creek ACEC, and other nearby areas. The BLM would manage the Upper and Lower Clear Creek portion of the ACEC to prioritize riparian restoration and nonnative and invasive species management. The BLM would manage

the area to develop interpretive educational materials and signage to provide for safe recreational access and use of the area. This would include information regarding the difficulty of rapids on the creek. The BLM would also manage the area so no SRPs for commercial outfitting for fishing would be issued within this ACEC.

The Swasey Drive portion of the ACEC would be managed so that existing trails would continue to be maintained within the ACEC. No new trail development would occur within the ACEC. Also, the BLM would consider trail reroutes to protect relevant and important values, and signage would use a new name for the area: "Swasey Recreation and Heritage Area." The area would be managed to develop a trail monitoring program to gauge the impacts on sedimentation and cultural resources and to promote a trail stewardship program.

The BLM also would manage the area to establish an interpretive and educational center to assist the public in understanding the ACEC's relevance and importance. The BLM would collaborate with Tribes on development and presentation of materials at this center. The area would be managed to limit large organized recreational groups that would be implemented if monitoring indicates adverse impacts on cultural resources in the area. These limitations could include limitations on group size, limitations on the number of groups annually, and closure of impacted areas to organized events.

The BLM would manage the areas outside the Swasey Drive and Upper and Lower Clear Creek portions of the ACEC to prioritize nearby land acquisition in the ACEC that contribute to the relevance and importance criteria. This includes maintenance of anadromous fish habitat and preservation of cultural resources. The area would also be managed to prioritize collaborative management and stewardship with local landowners, interest groups, and agencies.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the riparian restoration and nonnative and invasive species at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as OHV limited. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the riparian area, and protect the area from the spread of invasive, nonnative species. This also would help reduce ongoing soil disturbance from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain if OHVs are allowed to access the area.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be closed to mineral leasing. The area also would be closed to mineral materials development, unless for restoration purposes. The area would be recommended for withdrawal from locatable mineral entry. These would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with these activities.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The area would be managed as closed to dispersed camping. This would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with this activity.

Alternative C

Under this alternative, the Swasey Drive Clear Creek Greenway ACEC would not be designated. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative C.

Upper and Lower Clear Creek

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the Upper and Lower Clear Creek would not be proposed for ACEC designation.

Alternative B

Under this alternative, the Upper and Lower Clear Creek would be designated as an ACEC (0 acres). It would be combined with the existing Swasey Drive ACEC and other nearby lands and renamed the Swasey Drive Clear Creek Greenway ACEC. Impacts under this alternative would be the same as those described above under Swasey Drive Clear Creek Greenway Alternative B.

Alternative C

Under this alternative, the Upper and Lower Clear Creek ACEC would not be designated. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Under this alternative, the Upper and Lower Clear Creek ACEC (4,560 acres) would be designated. The area would be managed to protect and improve anadromous salmonid habitat and the scenic values of the Clear Creek canyon. The BLM would manage the area to prioritize riparian restoration and nonnative and invasive species management. The area would be managed to prioritize nearby land acquisition that would contribute to the relevance and importance criteria, including maintenance of anadromous fish habitat. The BLM would prioritize collaborative management and stewardship with local landowners, interest groups, and agencies. The area would also be managed to develop interpretive educational materials and signage to provide for safe recreational access and use of the area. This would include information regarding the difficulty of rapids on the creek.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the anadromous salmonid habitat and the scenic values at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as OHV limited. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the anadromous salmonid habitat and the scenic values. This also would help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain if OHVs are allowed to access the area.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as closed to mineral leasing and recommended for withdrawal from locatable mineral entry. The area would be managed as closed to mineral materials development. This would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. All these would ensure the anadromous salmonid habitat and the scenic values are adequately safeguarded from surface disturbances associated with these activities.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

The area would be managed as closed to dispersed camping, which would ensure the anadromous salmonid habitat and the scenic values are adequately safeguarded from surface disturbances associated with this activity.

Upper Klamath Bench

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the Upper Klamath Bench area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the Upper Klamath Bench area would be designated as an ACEC (90 acres). The BLM would manage the area to conserve the prehistoric, historic, and Tribal resources. The area would be managed so that cultural sites may be fenced, and trespass livestock would be removed as needed to protect the cultural setting.

The area would be managed as a ROW exclusion area, so no new ROWs could be developed. This would help conserve the prehistoric and historic archaeological resources by precluding this type of surface-disturbing activity that could impair the relevant and important values.

The area would be managed as OHV closed, which would ensure the relevant and important values are adequately safeguarded from surface disturbances associated with OHVs. This eliminates the potential for effects on prehistoric and historic archaeological resources from this type of surface disturbance. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as closed to mineral leasing and recommended for withdrawal from locatable mineral entry. The area would be closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. All these would ensure the prehistoric and historic archaeological resources are adequately safeguarded from surface disturbances associated with these activities.

The area would be managed as unavailable for livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing can spread the seeds of invasive, nonnative species that can outcompete and eradicate sensitive plant species. Trampling by livestock also compacts soil and

disrupts the recharge of soil moisture into the habitat. Alteration to hydrology and to the wet and dry cycles can reduce plant densities or extirpate plant species.

Alternative C

Under this alternative, the Upper Klamath Bench ACEC would not be designated. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Upper Mattole

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the Upper Mattole area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the Upper Mattole area would be designated as an ACEC (460 acres). The BLM would manage the ACEC to protect rare and sensitive riparian and fisheries habitat values. The area would be managed to prioritize fisheries restoration and forest management to promote late-seral conditions, prioritize the acquisition of nearby parcels, promote actions that increase summer streamflows (for example, forest management, beaver dam analogs, and groundwater retention projects), manage projects to increase soil infiltration and groundwater recharge, and work with state agencies and partners on anadromous fish habitat enhancement.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the rare and sensitive riparian and fisheries habitat values at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as OHV limited. OHV use would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the rare and sensitive riparian and fisheries habitat values. This would also help reduce ongoing soil

disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain if OHVs are allowed to access the area.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as open to mineral materials development which would allow stream habitat restoration projects to be completed. The area would be managed as closed to mineral leasing. This would ensure the rare and sensitive riparian and fisheries habitat values are adequately safeguarded from surface disturbances associated with this activity.

The area would be managed as unavailable to livestock grazing. Additionally, the area is unsuitable for livestock grazing given the steep, densely forested terrain. Livestock grazing could spread invasive species which can pressure local native sensitive populations. Trampling by occasional concentrated use by livestock would also encourage soil compaction, altering hydrology of wet and dry cycles that may eventually reduce plant densities.

Alternative C

Under this alternative, the Upper Mattole ACEC would not be designated. Without the ACEC designation, surface-disturbing activities could increase, leading to weed spread as soils are disturbed and seeds are deposited. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Willis Ridge

Impacts Common to All Alternatives

In general, management actions that protect resources, such as improvements in water quality and quantity, restrictions on surface disturbance, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions, would help maintain and improve relevant and important values within this ACEC. Likewise, management actions that create the potential for resource degradation, such as infrastructure development, could lead to impacts on relevant and important values within areas not proposed for ACEC designation or in undesignated ACEC areas. However, implementing various restrictions, policies, stipulations, and BMPs could help reduce these impacts on relevant and important values.

Alternative A

Under Alternative A, the Willis Ridge area would not be proposed for ACEC designation.

Alternative B

Under this alternative, the Willis Ridge area would be designated as an ACEC (3,180 acres). The BLM would manage the ACEC to protect late successional forests, along with fisheries and wildlife resources. The area would be managed to prioritize acquisition along anadromous fish streams.

The BLM would manage the area as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. This would allow for forms of development that could affect the scenic value. It could also allow for expanded development, and surface disturbance could damage the resources and values.

The area would be managed as a ROW avoidance area. ROW development could occur in the area under certain conditions; however, development activities and placement of facilities should consider the late successional forests, along with fisheries and wildlife resources, at the project level to minimize effects. ROW development would be designed to meet VRM class objectives, which would limit the size and placement of most ROWs. In some instances, ROWs could be precluded altogether if they do not meet VRM class objectives.

The area would be managed as OHV limited. OHV use would be limited to designated roads and trails. Limiting OHV use to existing routes would help keep recreationists on established routes and away from the late successional forests, along with fisheries and wildlife resources. This would also help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain if OHVs are allowed to access the area.

The area would be managed as closed to mineral leasing. The area also would be managed as closed to mineral materials development, which would preserve the relevant and important values by precluding development that could otherwise contrast with the characteristic landscape and damage resources. These would ensure the late successional forest, along with fisheries and wildlife resources, are adequately safeguarded from surface disturbances associated with these activities.

Alternative C

Under this alternative, the Willis Ridge area would not be designated as an ACEC. The late successional forest characteristics would be managed as late successional forests. Without the ACEC designation, surface-disturbing activities could increase, leading to invasive, nonnative species spread as soils are disturbed and seeds are deposited. Alternative C has the fewest restrictions and would likely result in the greatest overall impacts on the relevant and important values from ground-disturbing activities, broad visual changes, and increased visitation.

Alternative D

Impacts under this alternative would be the same as those described under Alternative B.

Cumulative Impacts

Past and present actions in the cumulative effects analysis area affecting ACECs are mineral exploration and development, livestock grazing, lands and realty development activities, recreation, travel management, and invasive, nonnative species management.

Effects include surface disturbance and vegetation disturbance, displacement of species, habitat fragmentation, and changes to the visual landscape that could affect resources in ACECs. The BLM would adaptively manage to protect ACEC values and minimize effects, where applicable and feasible.

Reasonably foreseeable future actions are likely to have similar effects as the past and present actions. Grazing in the cumulative effects analysis area is expected to continue. Ongoing mineral exploration and development and renewable energy development have the potential to affect ACECs by creating surface disturbance and potentially removing sensitive resources. Similarly, ROW grants could disturb lands. With a projected increase in population and recreational use, there may also be an increased risk of recreational use and visitation. Under all alternatives, incremental effects on existing and proposed ACECs would be limited from minerals, lands and realty, and renewable energy development; this is because most ACECs have use restrictions applicable to these uses. Vegetation and habitat improvement projects would improve ACEC vegetation values under all alternatives.

D.4.2 National Scenic and Historic Trails

Issue Statements

- How would the alternatives affect the BLM's ability to protect national scenic and historic trails?

The National Trails System Act of 1968, as amended in 2009, established a national system of recreational, scenic, and historic trails “to provide for the ever-increasing outdoor recreation needs of an expanding population and in order to promote the preservation of public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the Nation” (16 USC 1241 Sec. 2(a)). The National Trails System Act allowed Congress to designate national recreation trails, national scenic trails, and NHTs, depending on the proposed trail's national significance. NHTs are “extended trails which follow as closely as possible and practicable the original trails or routes of travel of national historic significance” (16 USC 1242 (a)(3)).

The designation of a national trail requires an act of Congress; the designation is based off a federally mandated feasibility study. If the feasibility study recommends the trail as suitable, Congress may designate the trail. Land use planning guidance requires special management for congressional designations (BLM Land Use Planning Handbook 1601-I, Appendix C, page 27). However, the feasibility study and subsequent recommendation can take up to 15 years; therefore, BLM Manual 6280 (Management of National Scenic and Historic Trails and Trails under Study or Recommended as Suitable for Congressional Designation) requires the BLM to manage the values, characteristics, and settings of any trail under a feasibility study in accordance with the FLPMA (BLM 2012b). Once legislation is enacted designating a national trail, BLM would prepare and file the congressionally-required maps and legal boundary descriptions that officially defines the boundaries (PIM No. 2013-169, Policies and Procedures for Handling Congressional Map Requests, Information Bulletin No. 2022-054, Best Management Practices for Developing Legislative Maps, MS-6120, Congressionally Required Maps and Legal Boundary Descriptions for National Landscape Conservation System Designations, 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-I, Cadastral Survey Handbook). The BLM would then use the National Scenic and Historic Trail Management of Land Boundary Plans to identify high risk boundaries subject to activities that would impair the trail values resources (MS-6250, National Scenic and Historic Trail Administration, MS-6280, Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation, 600 DM 5, Standards for Federal Lands Boundary Evidence, and H-9600-I, Cadastral Survey Handbook).

Affected Environment

Existing Trail Segments

In the Redding FO's administrative boundaries, there is an approximately 1.5-mile-long section of the federally designated Nobles Trail, which is part of the California NHT, and one potential NHT segment, the Yreka Trail segment of the California NHT (1.7 miles), which is currently under a feasibility study. There are no designated NHTs or NHT segments under a feasibility study in the Arcata FO's administrative boundaries (**Map 2-47** in **Appendix A**).

Because the Yreka Trail has not yet been officially designated—but it is under a feasibility study—the segments on BLM-administered land must be managed in accordance with FLPMA. Segments of the Nobles Trail, Lassen Trail, and Beckwourth Trail sections of the California NHT have been designated as NHTs that are administered by the NPS. These trails all cross the Redding FO's boundary. The BLM manages segments of the Nobles Trail for natural, scenic, cultural, and historic values according to BLM policy and the 1998 Comprehensive Management and Use Plan for the California National Historic Trail (USDI NPS 1998).

The California NHT, including the sections of the Nobles Trail and Yreka Trail located on BLM-administered lands, follows the routes westward-bound that immigrants traveled from Missouri to the California gold fields or Oregon Territory. The NHT has a current authorized length of 5,665 miles (covering multiple alternative routes). The California NHT commemorates the massive human migration that occurred to the western United States in the latter half of the nineteenth century, in addition to the economic development of the state of California in terms of gold mining, logging, agriculture, and the rise of cities and towns. The NPS is the national trail administrator, responsible for trail-wide coordination, guidance, technical assistance, and consultation with the on-the-ground national trail managers. The BLM is the trail manager for three segments of the California NHT, totaling approximately 140 miles of trail on BLM-administered land in California; however, most of these trail lands are outside the Redding and Arcata FOs' boundaries.

The Nobles Trail is a segment of the California NHT that starts in Black Rock Springs in western Nevada and ends in the town of Shasta, California, approximately 10 miles west of Redding. During the early days of the gold rush and California statehood, Shasta was the county seat and an important location for accessing gold fields farther west. The Yreka Trail is an approximately 73-mile-long segment of the California NHT connecting Lower Klamath Lake to Yreka and its associated gold fields. The Beckwourth Trail crosses the Sierra Nevada into the gold rush town of Oroville, California.

These trails were in use primarily between the 1850s and 1870s. Wagon trains, military excursions, and cattle drivers were the primary users of the trail. The Nobles Trail, Beckwourth Trail, and Yreka Trail are historically important to the economic development of California during the gold rush era. Of the original trails, approximately 1.5 miles of the Nobles Trail and 1.7 miles of the Yreka Trail are on BLM-administered land in the Redding FO's boundary. The BLM is responsible for managing these portions of the trail in association with the NPS as the national trail administrator for the entire California NHT. Archaeological investigations in 2000 and 2001 of the portions of the Yreka Trail on BLM-administered land conducted by the Redding FO yielded evidence of the historic use, including horseshoes, wagon parts, cobblestone roadbeds, wagon ruts, glass bottles, and an assortment of other artifacts (Barnes et al. 2004; Sullivan et al. 2005).

As the Yreka Trail is currently under a feasibility study, the BLM will continue to manage the portions of the trail on BLM-administered land for the trail's values, characteristics, and settings in accordance with the FLPMA. If Congress designates the trail, the NPS, as the national trail administrator, may add the Yreka Trail to the existing California NHT comprehensive management plan as a revision or addendum. The BLM will work with the NPS to implement that plan when and if it is developed. The BLM will continue to work with the NPS to manage the Nobles Trail in accordance with the comprehensive management plan for the California NHT.

Potential Trails and Existing Scenic Byways

A section of a newly discovered emigrant trail is in Tehama County near Battle Creek and Spring Branch Road; it is unofficially designated the Forgotten Emigrant Trail that, with further study, could be added to the National Trail system. The Trinity Scenic Byway crosses small sections of BLM-administered land between the towns of Shasta and Blue Lake, California.

Environmental Consequences

Nature and Type of Effects

Direct effects on national trails typically result from actions that disturb the soil or alter characteristics of the surrounding environment. These characteristics contribute to trail significance, introduce visual elements out of character with the property or alter its setting, or result in neglect of the resource to the extent that it is deteriorated or destroyed. For example, surface-disturbing activities that impact trail ruts for historical trails are considered a direct impact because the trail segments are nonrenewable. Direct effects also include actions that result in data collection and proactive preservation of NHTs.

Indirect effects on national trails result from project-induced increases or decreases in activity in the decision area. Intensification of uses such as grazing (currently occurring on two vacant allotments), ROW authorizations, and OHVs along or near national trails typically decreases the overall trail quality. This is caused by changing the visual or historical character for which the trail was designated.

Proposed management that would encourage increased visitor use or construct recreation facilities may result in theft or vandalism of the historic trail's cultural resources. It also may damage the trail through increased use. Recreation actions taken to preserve historical values can have both beneficial and adverse impacts on heritage tourism and trail enthusiasts.

Federal actions defined as federal undertakings under Section 106 of the NHPA require the identification, evaluation, and consideration of adverse effects and the appropriate mitigation of those effects. Nearly all implementation actions would be subject to further cultural resource review before site-specific projects are authorized or implemented. If adverse effects are identified, the BLM would have to consider mitigation measures, including avoidance, to minimize or eliminate the effects.

Climate change impacts include increased temperatures, shrub encroachment, and erosion following drought events from high and sudden precipitation. There will likely be increased wildfire intensity, size, and frequency, and changes in vegetation composition. Impacts, including trail erosion, could diminish the integrity of the trail.

Impacts Common to All Alternatives

Management for national trails does not vary by alternative. The number one goal for the NSHT program is to complete an inventory of the natural, cultural/historic, scenic, and recreational resources that are specific to the Nature and Purpose of each federally designated trail segment. There is no existing management included in the current RMPs. The BLM will continue to coordinate with the NPS to develop added protections to the Nobles and Yreka Trail corridors of the California NHT.

Under all alternatives, the BLM will identify utility corridors that can cross trail alignments in non-contributing sections of the California NHT. Corridor infrastructure will not detract from the heritage values except where features are already in place. Future changes to the existing infrastructure in the corridors will not detract from the trails' values.

Nobles Trail Route of the California National Historic Trail

Under all alternatives, the BLM would manage the area to establish a 150-foot-wide national trail management corridor for the Nobles Trail route (1.5 miles on BLM-administered lands). The BLM would manage the area as open to administrative access; also, emergency wildland fire ingress and egress would be allowed. This would expose impacts on the trail's integrity from surface disturbances associated with these activities. Wildland fire and vegetation management can cause short-term impacts on the trail's integrity due to noise and visual impacts; however, wildland fire and vegetation management can also provide for long-term protection of the trail's integrity. Other surface-disturbing activities that are inconsistent with heritage values would be prohibited.

The trail corridor would be managed as OHV closed to dispersed camping. Limiting OHV use to existing routes helps keep recreationists on established routes. This will help reduce ongoing soil disturbance and the spread of invasive, nonnative species from OHV use off designated routes. However, the threat of illegal route proliferation is present and would remain so if OHVs are allowed to access the area.

The BLM would manage the trail corridor as VRM Class II. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic aspects of the trail would be maintained.

The trail corridor would be managed as no surface occupancy for mineral leasing, closed to mineral materials development, and recommended for withdrawal from locatable mineral entry. These ensure the Nobles Trail route and the impacts on the trail's integrity are adequately safeguarded from surface disturbances associated with these activities.

The trail corridor would be managed as ROW avoidance. Activities such as ROW authorizations that cross trail segments or project developments, such as wind energy, in the trail's viewshed can contribute to a decrease in overall trail quality. These actions may cause a change to the visual or historic character and possibly destroy important scientific information related to the trail.

Yreka Trail Route of the California National Historic Trail

Under all alternatives, the BLM would manage the area to establish a 150-foot-wide national trail management corridor for the Yreka Trail route (1.7 miles on BLM-administered lands). The BLM would

manage the area as open to administrative access. Surface-disturbing activities that are inconsistent with heritage values would be prohibited.

The trail corridor would be managed to allow cattle trailing as part of the heritage value of the trail. This could cause impacts on the trail's integrity from surface disturbances associated with this activity.

The trail corridor would be managed as closed to OHV use. This would eliminate the potential for effects on the Yreka Trail route from this type of surface disturbance. Furthermore, the potential for weed spread from vehicles and soil disturbance would be eliminated. However, the trail corridor would be managed as open to dispersed camping. This exposes the integrity of the Yreka Trail route to the surface-disturbing activities associated with this activity.

The BLM would manage the trail corridor as VRM Class II. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic values of the trail would be maintained. Impacts on the characteristics of the surrounding environment are visual elements that are out of character with, or alter, the trail settings. Impacts may also include wildfire damage, such as erosion or downed trees. Indirect impacts are actions that result in data collection and proactive preservation of the trail (for example, partnerships that encourage research or a greater understanding of the trail's historic character).

The trail corridor would be managed as no surface occupancy for mineral leasing, closed to mineral materials development, and recommended for withdrawal from locatable mineral entry. These ensure the Yreka Trail route is adequately safeguarded from surface disturbances associated with these activities.

The trail corridor would be managed as ROW avoidance. Activities such as ROW authorizations that cross trail segments or project developments, such as wind energy, in the trail's viewshed can contribute to a decrease in the overall trail integrity and quality. These actions may cause a change to the visual or historic character and possibly destroy important scientific information related to the trail.

Cumulative Impacts

Approximately 45 miles of the Nobles and 70 miles of the Yreka sections of the California NHT cross the planning area. Since less than 3 percent of the national trail mileage in the planning area is on BLM-administered lands, the incremental effect of implementing each alternative in this RMP would be minimal. Actions on BLM-administered lands would largely serve to protect the physical elements and scenic quality of the trails.

Incremental cumulative effects would be similar for all alternatives. Overall, incremental effects on NHTs would vary based on use restrictions, the size and number of minerals and renewable energy developments; and construction associated with ROW authorizations. Minerals, renewable energy, and lands and realty activities could result in surface disturbance and impact soils during construction of roads, drill pads, power lines, and facilities. Mineral exploration and development are expected to continue for locatable minerals and mineral materials development. Restrictions around national trails due to VRM classifications would reduce effects on these resources.

D.4.3 Wild and Scenic Rivers

Issue Statements

- How would the alternatives affect the free-flowing condition, water quality, and outstandingly remarkable values of designated rivers?
- How would the alternatives affect the free-flowing condition, water quality, outstandingly remarkable values, and tentative classifications eligible and suitable wild and scenic river segments in the planning area?

Affected Environment

The WSR Act (October 2, 1968; Public Law 90-542) established the NWSRS, which is intended to preserve free-flowing rivers with ORVs in their natural condition for the benefit of present and future generations, balancing the nation's water resource development policies with river conservation and recreation goals.

The WSR Act states, "In all planning for the use and development of water and related land resources, consideration shall be given by all federal agencies involved to potential national wild, scenic and recreational river areas..." (Section 5(d) (I)). Federal agencies consider potential rivers by evaluating a river's eligibility, tentative classification, and suitability for designation under the WSR Act. This study process is part of the resource management planning effort for the Redding and Arcata FOs.

Potential classifications are to be determined based on the eligibility and suitability studies during this RMP process. Eligibility and tentative classification are determined by an inventory of existing conditions. Eligibility involves an evaluation of whether a river or river segment is free flowing and possesses one or more ORVs. If found eligible, a river is analyzed as to its current level of development (for example, water resources projects, shoreline development, and accessibility), and segmented accordingly. Each river segment is given one of three tentative classifications—wild, scenic, or recreational—based on the degree of development. The final procedural step, suitability, provides the basis for determining whether to recommend a river as part of the NWSRS. See **Appendix I** for additional information on WSR suitability.

Eligibility

Eligibility Determination Considerations

For a river to be eligible for inclusion in the NWSRS, the WSR Act specifies that certain criteria (summarized below) must be met. These criteria apply not only to each potentially eligible river but also to their immediate environment, which is defined as a river corridor extending, on average, a quarter mile from both sides of the high-water mark.

Free-Flowing Condition: To be considered a free-flowing river, it must be a flowing body of water or estuary, or section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes. A river can be any size or length. The body of water must be existing or flowing in a natural condition without major modification of the waterway, such as channelization, impoundment, diversion, straightening, riprapping, or other modification. However, some minor modifications can be allowed, such as low dams, diversion works, and minor structures. The river can lie between two impoundments or major dams.

Flows: For purposes of eligibility determination, a river's flow is sufficient as long as the flow sustains or complements the ORV for which the river is found to be eligible. It does not have to be floatable or boatable, but should contain regular and predictable flows (even if intermittent, seasonal, or interrupted) from naturally occurring circumstances (for example, seasonal melting from snow or ice, aquifer discharge, normal precipitation).

Outstandingly Remarkable Values: The WSR Act specifies that rivers "with their immediate environment, must possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar value" (Section 1(b)).

The term "outstandingly remarkable" is not clearly defined in the WSR Act; consequently, the determination of what constitutes "outstandingly remarkable" is left to the professional judgment of the managing agencies and their staffs. For purposes of this study, outstandingly remarkable means something that is more than ordinary when considered within a regional (planning area-wide) context. For the river to be considered eligible in this study, the ORV(s) must occur on BLM-administered lands within a quarter mile of the river.

The description of river study corridors may include segments that have no present BLM-administered lands adjoining them. Segments or corridors deemed ineligible because of a lack of ORVs on BLM-administered lands may have ORVs on non-BLM-administered lands. In both instances, the BLM defers to other appropriate federal and state agencies to (re)evaluate these segments and corridors. The BLM would participate in any joint studies with the responsible agencies, as appropriate.

Tentative Classification

Each river segment determined to be eligible is given a tentative classification. The WSR Act provides for three possible classifications: wild, scenic, or recreational. These classifications, when applied to eligible rivers, are based on the type and degree of human development associated with the river and adjacent lands present at the time of inventory. The classifications also prescribe what management activities would be allowed to occur along a river, as long as no ORV is compromised. The tentative classifications are based on the following:

- **Wild:** Rivers classified as wild, which is the most restrictive WSR classification, are rivers that are free of impoundments and those that are generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.
- **Scenic:** Rivers classified as scenic are rivers that are generally free of impoundments, with shorelines or watersheds that are still largely primitive. The shorelines are largely undeveloped, but they are accessible in places by roads.
- **Recreational:** Rivers classified as recreational are rivers that are readily accessible by road or railroad; they may have some development along their shorelines, and they may have substantial evidence of human activity.

Suitability

Suitability Determination Considerations

The purpose of the suitability step of the WSR study process is to determine whether the river would be an appropriate addition to the NWSRS by considering a variety of environmental, social, and economic

factors (listed below). Suitability considerations also include an evaluation of river manageability if Congress were to designate the river. The following factors are considered when determining suitability:

- Characteristics that do or do not make the area a worthy addition to the NWSRS
- Current uses and landownership concerns
- Resources and uses that would be enhanced or curtailed by designation
- The federal agency that would administer the area should it be added to the NWSRS
- Costs of acquiring necessary lands and interests in lands and of administering the area
- State or political subdivision participation
- Local zoning and other land use controls
- Federal, public, state, Tribal, local, or other interests in designation or non-designation
- Consistency of designation with other agency plans, programs, or policies, and meeting regional objectives
- Contribution to the river system or basin integrity
- Ability to manage or protect the river area other than with a VSR designation

Existing Eligible and Suitable Rivers

In 1990, as directed by the Oregon Omnibus Rivers Act, the Redding FO completed an eligibility and suitability study of the upper Klamath River from the John C. Boyle Dam in Oregon to the slack water of Copco Lake in California. As a result of the 1990 studies, the Klamath River segment between the California-Oregon border and the slack water of Copco Lake (5.3 miles) was determined to be suitable for inclusion in the NWSRS. Recreation, wildlife, fish, historic, and scenic ORVs were identified for this segment; it was classified as scenic. This suitability determination has not been revisited in the NCIP process, so the suitability determination remains as found in 1990. The section of the Klamath River that overlaps BLM lands is less than 0.1 miles long, however the preliminary corridor does extend up onto more BLM lands. Overall, the BLM will continue to manage this small area as suitable until a larger interagency effort may occur that looks as the free-flowing river that has been restored due to dam removals in the area.

Both the 1993 Redding RMP and the 1992 Arcata RMP included eligibility inventories of waterways in the VSR study area. Combined, the Redding RMP and Arcata RMP identified 43 eligible rivers in the study area. In 2018, the Redding and Arcata FOs initiated a review of all rivers on BLM-administered land for their eligibility. This included a review of rivers previously studied for eligibility in the Redding and Arcata RMPs for changed circumstances and new information. However, that effort was ultimately terminated due to the catastrophic Camp and Carr wildfires. The BLM reinitiated the eligibility process in 2022 and initiated the suitability process in 2023. **Table D-84** below, provides information on river segments within the Arcata and Redding FOs' boundaries that have been determined eligible and suitable for inclusion in the NWSRS through that effort. See **Appendix I** for additional information.

Table D-84
Eligible and Suitable WSR Segments

River Name	Length on BLM-Administered Land (Miles)	ORVs	Tentative Classification
Ancestor Creek	0.3	Fish	Scenic
Baker Creek	0.3	Fish	Scenic
Battle Creek	6.5	Scenic, Recreation, Fish, Cultural	Recreational
Bear Creek Segment A	1.8	Recreation, Fish	Scenic
Bear Creek Segment B	1.9	Recreation, Fish	Wild
Beegum Creek	4.7	Scenic, Fish	Wild
Bell Springs Creek	1.3	Fish	Wild
Bell Springs Creek tributary	0.4	Ecology, Scenic	Wild
Big Chico Creek Segment A	0.9	Recreation	Scenic
Big Chico Creek Segment B	0.6	Recreation	Recreational
Board Tree Canyon	0.3	Ecology, Scenic	Wild
Brin Canyon Creek	0.9	Fish	Scenic
Butler Creek	0.8	Fish	Wild
Butte Creek I Segment A	0.7	Recreation, Fish	Scenic
Butte Creek I Segment B	4.5	Scenic, Recreation, Fish, Geology, Historic, Cultural	Scenic
Butte Creek 2 (Van Duzen Creek)	1.8	Ecology, Scenic, Fish	Wild
Butte Creek 2 tributary 1	1.3	Ecology, Scenic	Wild
Butte Creek 2 tributary 2	0.1	Ecology, Scenic	Wild
Canyon Creek	2.9	Scenic, Fish, Recreation	Recreational
Casoose Creek	1.6	Fish	Scenic
Cedar Creek Segment A	3.9	Ecology, Scenic	Wild
Cedar Creek Segment B	1.5	Geology	Wild
Cedar Creek tributary 1	0.5	Ecology, Scenic, Fish, Geology	Wild
Cedar Creek tributary 2	0.4	Geology	Wild
Cedar Gulch	0.2	Cultural	Scenic
Chamise Creek	0.5	Ecology, Scenic	Wild
Chamise Creek tributaries	0.6	Ecology, Scenic	Wild
Charlton Creek	2.3	Ecology, Scenic	Wild
Charlton Creek tributaries	2.5	Ecology, Scenic	Wild
Clear Creek Segment A	4.9	Recreation, Fish, Cultural	Scenic
Clear Creek Segment B	1.1	Recreation, Fish	Scenic
Clear Creek Segment C	3.0	Scenic, Recreation, Fish, Geology	Scenic
Coleman Creek	1.1	Fish	Scenic
Cruso Cabin Creek	0.3	Fish	Scenic
Deep Hole Creek	3.1	Fish	Scenic
Deer Creek	0.2	Fish, Recreation, Scenic	Wild
East Branch South Fork Eel	1.2	Fish	Scenic
Eden Creek	3.3	Fish, Cultural	Wild
Eden Creek tributary 1	1.2	Cultural	Wild
Eden Creek tributary 2	1.2	Cultural	Wild
Elder Creek	1.7	Ecology, Scenic, Research, Fish	Wild
Elder Creek tributaries	2.2	Ecology, Scenic, Research, Fish	Wild
Elk Creek	3.3	Fish, Cultural	Scenic
Elkhorn Creek	0.1	Fish	Scenic
Eubank Creek	0.2	Fish	Scenic

D. Affected Environment and Environmental Consequences (Wild and Scenic Rivers)

River Name	Length on BLM-Administered Land (Miles)	ORVs	Tentative Classification
Fish Creek	2.5	Fish	Scenic
Fourmile Creek	4.2	Fish	Scenic
Grindstone Creek	1.5	Fish	Wild
Grub Gulch	0.5	Cultural	Scenic
Hayshed Creek	1.7	Fish	Wild
Horse Canyon Creek	0.7	Fish	Scenic
Hulls Creek Segment A	4.9	Fish	Recreational
Hulls Creek Segment B	2.0	Fish	Scenic
Indian Creek I Segment A	0.8	Fish	Wild
Indian Creek I Segment B	2.9	Fish	Scenic
Indian Creek I Segment C	1.7	Fish	Scenic
Indian Creek 2	1.8	Fish	Recreational
Inks Creek	1.0	Fish, Cultural, Ecology	Wild
Inks Creek tributary	0.4	Fish, Cultural, Ecology	Wild
Lacks Creek	7.6	Fish, Ecology, Scenic	Wild
Lacks Creek tributaries	3.6	Ecology, Scenic	Wild
Mad River	0.9	Fish	Scenic
Massacre Creek	1.8	Cultural, Ecology	Scenic
Mattole River Segment A	0.5	Fish	Wild
Mattole River Segment B	1.6	Fish	Scenic
Mattole River Segment C	0.2	Fish	Scenic
McAdam Creek	0.3	Cultural	Scenic
McAdam Creek tributary	0.5	Cultural	Scenic
Middle Fork Cottonwood Creek Segment A	1.2	Scenic, Fish	Recreational
Middle Fork Cottonwood Creek Segment B	3.4	Scenic, Fish	Wild
Mill Creek	0.2	Scenic, Geologic, Cultural, Wildlife, Fish	Wild
Misery Creek	0.2	Scenic, Ecology, Research	Wild
North Fork Battle Creek	0.9	Fish	Wild
North Fork Cedar Creek	1.0	Geologic	Wild
North Fork Cottonwood Creek	2.1	Scenic, Recreation, Fish	Scenic
Paralyze Canyon and tributaries	3.6	Ecology, Scenic, Research	Wild
Paynes Creek	7.7	Scenic, Fish, Cultural, Ecology	Scenic
Pipe Creek	0.6	Fish	Scenic
Rattlesnake Creek	0.6	Fish	Recreational
Sacramento River Bend tributary I Segment A	0.7	Cultural, Ecology	Wild
Sacramento River Bend tributary I Segment B	0.3	Cultural, Ecology	Scenic
Sacramento River Bend tributary 2	2.1	Cultural, Ecology	Scenic
Sacramento River Segment A	3.8	Scenic, Fish, Cultural, Ecology, Recreation	Recreational
Sacramento River Segment B	7.1	Scenic, Fish, Cultural, Ecology, Recreation	Scenic

River Name	Length on BLM-Administered Land (Miles)	ORVs	Tentative Classification
Sacramento River Segment C	2.0	Scenic, Fish, Cultural, Ecology, Recreation	Recreational
Sacramento River Segment D	1.9	Scenic, Fish, Cultural, Ecology, Recreation	Recreational
Sacramento River Segment E	0.9	Scenic, Fish, Cultural, Ecology, Recreation	Wild
Sacramento River Segment F	0.1	Scenic, Fish, Cultural, Ecology, Recreation	Scenic
Sacramento River Segment G	0.1	Scenic, Fish, Cultural, Ecology, Recreation	Wild
School Section Creek	0.8	Botany	Scenic
School Section Creek tributary 1	1.0	Botany	Scenic
School Section Creek tributary 2	0.7	Botany	Scenic
Scorpion Gulch	0.7	Cultural	Scenic
Sevenmile Creek	1.3	Cultural, Ecology	Scenic
Sevenmile Creek tributaries	5.8	Cultural, Ecology	Scenic
Shasta River Segment A	0.3	Fish, Scenic, Cultural, Recreation	Scenic
Shasta River Segment B	3.1	Fish, Scenic, Cultural, Recreation	Recreational
Shell Rock Creek	1.4	Fish, Geology, Scenic	Scenic
Sholes Creek	2.0	Fish	Scenic
South Fork Battle Creek	4.5	Scenic, Recreation, Fish, Cultural	Recreational
South Fork Cottonwood Creek Segment A	2.0	Scenic, Recreation, Geologic, Fish	Wild
South Fork Cottonwood Creek Segment B	1.1	Scenic, Recreation, Geologic, Fish	Scenic
Tenmile Creek	0.4	Fish, Recreation	Wild
Thatcher Creek	1.6	Fish	Wild
Tom Long Creek	0.3	Ecology, Scenic, Fish	Wild
Tom Long Creek tributaries	0.8	Ecology, Scenic	Wild
Tomki Creek	2.6	Fish	Scenic
Turtle Creek	4.3	Cultural, Ecology	Scenic
West Branch Butte Creek 1	0.8	Scenic, Recreation, Fish, Geology, Historic	Scenic
West Weaver Creek	1.4	Cultural, Fish	Scenic
West Weaver Creek tributary	0.1	Cultural, Fish	Scenic
White Rock Creek	2.5	Ecology, Scenic, Fish	Scenic
White Rock Creek tributary 1	0.3	Ecology, Scenic, Fish	Scenic
White Rock Creek tributary 2	0.9	Ecology, Scenic, Fish	Wild
White Rock Creek tributary 3	1.9	Ecology, Scenic, Fish	Scenic
White Rock Creek tributary 4	0.4	Ecology, Scenic, Fish	Wild
Woodman Creek	0.5	Fish	Scenic

Source: BLM 2023

Existing Designated Wild and Scenic Rivers

In 1972, several rivers within the planning area were designated as wild and scenic by the State of California. The State-designated rivers within the planning area include the Klamath River, Trinity River, Van Duzen River, and all forks of the Eel River system. The WSR Act states, “It is the policy of the State of California that certain rivers which possess extraordinary scenic, recreational, fishery, or wildlife values shall be preserved in their free-flowing state, together with their immediate environments, for the benefit and enjoyment of the people of the state.” The term “river” is defined as “the water, bed, and shoreline of rivers, streams, channels, lakes, bays, estuaries, marshes, wetlands, and lagoons, up to the first line of permanently established riparian vegetation.” The term “immediate environment” is defined as “the land immediately adjacent to the segments of the rivers designated...”

In 1980, the governor of California sought federal protection for the aforementioned rivers under Section 2(a)(ii) of the WSR Act by petitioning the Secretary of the Interior to add the rivers to the NWSRS. In 1980, the Heritage Conservation and Recreation Service, Pacific Southwest Region evaluated this request and completed a report entitled Evaluation Report on the Eligibility of Five California Rivers for Inclusion in the National Wild and Scenic Rivers System (Heritage Conservation and Recreation Service 1980). The report did not change the rivers’ classification or establish corridor boundaries. The one ORV identified in this document is the anadromous fishery for winter-run steelhead. The other value (not identified as outstandingly remarkable) is whitewater boating.

The aforementioned WSRs are administered by the State of California except for affected (adjacent) federal lands. An exception to this, which is discussed below, is the provisions outlined in Section 7 of the WSR Act. Where federal lands are adjacent to these rivers, management falls on the respective jurisdictional agency, such as the BLM, Forest Service, or NPS. Pursuant to Section 10(a) of the WSR Act and BLM Manual 6400 (Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, Planning, and Management), the BLM will administer its affected lands within the river corridor in such manner as to protect and enhance the values that caused the river corridor to be included in the NWSRS. These values include, but are not limited to, (1) the river’s free-flowing condition, (2) water quality, and (3) identified ORV.

Within the planning area, the most commonly identified ORV is anadromous fisheries. The BLM must ensure activities on its federal lands meet the protection and enhancement standard set forth in the WSR Act. This may include actions outside the established river corridor that have the potential to affect the ORV(s). Specific guidelines for a variety of resource management programs and activities are identified in BLM Manual 6400. Within the planning area, the actual mileage of nationally designated rivers under BLM jurisdiction is very small, as summarized in **Table D-85**, below.

Table D-85
Rivers Designated in the National Wild and Scenic Rivers System

Name	Designated Miles on BLM-Administered Lands	Total Designated Miles in the Planning Area	Percentage of Miles on BLM-Administered Lands in the Planning Area
Eel River	4.9	162.1	3.0
Klamath River	3.4	292.2	1.2
Middle Fork Eel River	12.3	54.9	22.4
North Fork Eel River	4.6	34.2	13.0

Name	Designated Miles on BLM-Administered Lands	Total Designated Miles in the Planning Area	Percentage of Miles on BLM-Administered Lands in the Planning Area
North Fork Trinity River	0.8	15.3	5.0
South Fork Eel River	7.1	103	6.7
Trinity River	18.6	191.4	20.1
Van Duzen River	0.2	48.8	0.4

Source: BLM 2023

This table depicts the segments for three WSRs (Trinity River, Klamath River, and Eel River)

The Redding FO manages 24.4 miles of WSRs within its FO boundary. The Arcata FO manages 30 miles of WSRs within its FO boundary. The vast majority of projects and activities adjacent to or within the bed or banks of these rivers occur on private property. To protect and enhance WSR values, Congress included Section 7 of the WSR Act, which is a key provision that directs federal agencies to protect the values of designated WSRs, even when projects and activities are not on federal lands. Section 7(a) prohibits federal agencies from assisting in the construction of any water resources project that would have a direct and adverse effect on the values for which the WSRs were designated. Section 7(a) states, “. . . no department or agency of the United States shall assist by loan, grant, and license or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration.” An interagency agreement between the NPS, Forest Service, and BLM was developed and is currently being implemented to ensure all water resource projects (whether on public or private lands) affecting WSRs designated under Section 2(a)(ii) are coordinated properly and evaluated under Section 7(a).

Environmental Consequences

Until the RMP/EIS is adopted, the BLM would manage all eligible stream segments under consideration for WSR designation under interim protective measures required by the WSR Act and BLM Manual 6400 (BLM 2012c). Any stream segment not found suitable for inclusion in the NWSRS in the NCIP ROD would lose its interim protection. This procedure and the interim protective measures would ensure the values for which these river segments were found eligible and suitable are not compromised until Congress makes a decision regarding WSR designation.

If WSR designation is not provided (that is, if segments are found not suitable and released from further study under the WSR Act), provisions could still remain to protect these river corridors. This would be done under a combination of existing plans, policies, and actions proposed under the alternatives of this RMP. These provisions protect streamside and riparian habitats, riparian and aquatic wildlife, water quality, and cultural and visual resources. The difference between designation and non-designation is the legislative and, thus, lasting protection afforded to designated streams. Decisions in this RMP, however, affect suitability only; once a segment is determined suitable, only Congress can formally designate it as part of the NWSRS.

The BLM would not permit any actions that would adversely affect the free-flowing nature, ORVs, or tentative classification of any of the segments, or that would result in the reduction of water quality to the extent that it would no longer support the ORVs. As such, implementing the management actions would not adversely impact eligible or suitable segments. There would not be effects from other resources with either eligible or suitable segments. Recognizing that, the analysis of effects on eligible and suitable WSR stream segments includes an evaluation of where management actions might be inconsistent with

the tentative classification given to each suitable segment, as well as potential effects on the segment's ORVs or free-flowing nature.

A withdrawal is an administrative designation made by the BLM that prohibits certain activities on the identified federal lands to protect the identified value. The BLM's determination of whether a stream segment is suitable could affect some of these withdrawals. This is especially the case with withdrawals that are designed to protect potential water storage and potential hydropower generation sites. If the BLM determines that a stream segment is suitable, the final management plan could recommend revocation of water storage- or hydropower-related withdrawals. In addition, Congress could require revocation of certain withdrawals if it were to designate a river segment. A WSR management plan created in accordance with the designation could also include a recommendation for revocation of withdrawals.

Nature and Type of Effects

The potential impact on each stream segment depends on the ORVs identified for the segment and the tentative classification of the segment. Segments classified as recreational would allow for the greatest level of development in the study corridor, while segments classified as wild must remain relatively undeveloped. Segments classified as scenic fall in between recreational and wild segments, allowing a moderate amount of development within the study corridor. Because segments classified as recreational would allow development to the extent the development is compatible with the protection of the identified ORVs, effects on segments classified as wild or scenic are the focus of the analysis of effects on the segments' classification. In the planning area, effects on the tentative classification would come mostly from trail and road use and mineral and energy development.

Properly functioning riparian and wetland vegetation communities provide soil stabilization, soil filtration, and diverse vegetation species. In turn, properly functioning riparian and wetland vegetation communities can provide protection for vegetation, fish, and wildlife ORVs. Uses in riparian and wetland vegetation that could degrade the riparian and wetland vegetation ORV include camping, livestock grazing, and trail development. These activities can also cause soil erosion and degrade water quality, potentially impacting the fish ORV.

Management actions that prohibit surface-disturbing activities, including ROW exclusion areas, in the WSR study corridor would provide some amount of protection for several ORVs, including fish, scenic, cultural, and geology, by keeping the ORVs intact. These actions would also ensure the tentative classification of the area remains intact. In areas managed as ROW avoidance, some ROW development could occur, which would primarily impact scenic ORVs. It could also cause soil erosion, vegetation loss, and habitat fragmentation, which could impact wildlife, fish, cultural, and vegetation ORVs.

Managing WSR segments according to VRM Class I or II objectives would directly protect segments with a scenic ORV by requiring that alterations to the landscape be done so as not to dominate the viewshed. Alterations that could not be mitigated to reach the VRM class objective would not be permitted. Because most large-scale developments cannot meet VRM Class I or II objectives, managing to protect the scenic values of the decision area would generally preclude most large-scale developments. In turn, this would incidentally protect segments with geology or cultural ORVs.

In general, livestock grazing leads to use of wetlands and riparian habitats. Detrimental effects on these habitats can occur when they are improperly managed; this can lead to stream bank alteration, water

quality degradation, erosion, loss of vegetation health, and increases in nonnative or upland vegetation. These effects, however, would be minimized due to management actions such as changes in the stocking rate and the timing of grazing. These actions could mitigate effects from livestock grazing on vegetation ORVs. Livestock can also trample and rub against cultural artifacts. Intensive and repetitive use can damage cultural ORVs.

Under all alternatives, the BLM would implement mitigation measures and BMPs to prevent effects on wetlands and riparian habitats during wildland fire suppression and fuels treatment (including both biological and chemical methods) management. Use of retardant would be restricted within stream segments, protecting water quality. These restrictions would be implemented on all surface waters, including NWSRS-eligible streams. In general, these actions would protect the habitats that provide NWSRS-eligible segment ORVs. However, this limitation of fuels treatment (including both biological and chemical methods) management and suppression can increase fuel loads; therefore, wildland fires that do impact NWSRS-eligible segments could be larger or more severe.

WSR study segments could benefit from interpretation and environmental education that teaches users about the importance of protecting the ORVs and encouraging them to recreate in the area in ways that do not threaten the resources. In addition, conducting research to learn more about resources associated with or connected to the ORVs would result in a better understanding of how best to provide long-term protection. This could result in either direct effects (where science and education are aimed directly at the ORV) or indirect effects (where the ORV benefits or protection result from monitoring, research, or education programs aimed at other programs).

Climate change impacts include increased temperatures, increased wildfire occurrence and intensity, and shrub encroachment. Climate change will likely lead to conifer trees being replaced with hardwood trees, decreased snow cover, and an increase in nonnative, invasive species' presence and spread. These changes (for example, vegetation type) could impair the ORVs for which a WSR is designated. Impacts are specific to the WSR and are based on the impact that management actions would have on the ORVs of a WSR.

Alternative A

Consistent with the Arcata RMP (BLM 1992) and Redding RMP (BLM 1993), the BLM would manage the decision area to include 117 river segments (totaling approximately 201.7 miles) as eligible, and a 0.1 mile river segment as suitable for inclusion in the NWSRS. These areas would include approximately 65,300 acres on BLM-administered lands within eligible WSR corridor segments. The BLM would also continue to manage eight designated WSRs (totaling 52 miles).

Impacts Common to All Action Alternatives

The BLM would manage all suitable WSR segments to protect and enhance the free-flowing condition and identified ORVs in accordance with the tentative classifications. Individual projects within the WSR corridors would be analyzed at the site-specific implementation level, as needed.

WSR Segments Identified as Wild

The BLM would emphasize public lands acquisition along these WSR segments. The BLM would manage these segments as ROW exclusion, so no new ROWs could be developed. This would protect the wild values by precluding this type of surface-disturbing activity that could impair the flowing water. Habitat

enhancement and vegetation management projects would be allowed where they have been determined to protect and enhance river values and to be compatible with the area's essentially primitive condition.

The BLM would manage these WSR segments as VRM Class II. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so the scenic ORVs would be maintained. Also, recreational development would be located outside the river corridor and not visible from the river.

These WSR segments would be managed as OHV limited. Motorized travel would be limited to designated roads, trails, and washes, which would help keep recreationists in designated areas and away from sensitive resources.

These WSR segments would be managed as closed to mineral leasing and mineral materials development and would be recommended for withdrawal from mineral entry. This would ensure the ORVs are adequately safeguarded from surface disturbances associated with these activities that could otherwise contrast with the characteristic landscape and impair water resources.

WSR Segments Identified as Scenic

The BLM would emphasize public lands acquisition along these WSR segments and manage the segments as ROW avoidance. The BLM would determine whether ROW proposals would be compatible with the rivers' classification and the protection and enhancement of river values. Habitat enhancement and vegetation management projects would be allowed where they have been determined to protect and enhance river values and to be compatible with the area's essentially primitive condition.

These WSR segments would be managed so that limited recreational development may be located inside the river corridor. However, recreational development should be designed to protect and enhance river values and screened from view from the river, to the extent possible.

The BLM would manage these WSR segments as VRM Class II. The objective of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. The casual observer would be unlikely to notice any changes to the landscape, so scenic ORVs could be maintained.

These WSR segments would be managed as OHV limited. Motorized travel would be limited to designated roads, trails, and washes, which would help keep recreationists in designated areas and away from sensitive resources.

These WSR segments would be managed as closed to mineral leasing and mineral materials development. This would ensure the ORVs are adequately safeguarded from surface disturbances associated with these activities that could otherwise contrast with the characteristic landscape and impair water resources. Any existing or new mining activity would be conducted in a manner that minimizes surface disturbance.

WSR Segments Identified as Recreational

The BLM would emphasize public lands acquisition along these WSR segments and manage these segments as ROW avoidance. The BLM would determine whether ROW proposals are compatible with the rivers' classification and the protection and enhancement of river values. Habitat enhancement and vegetation

management projects would be allowed where they have been determined to protect and enhance river values and to be compatible with the area's essentially primitive condition.

The BLM would manage these WSR segments as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. The area would be managed so that recreational development may be located inside the river corridor. However, the recreational development would be designed to protect and enhance ORVs and to be screened from view from the river, to the extent possible. This would allow for forms of development that could affect ORVs more than development under VRM Class II management.

These WSR segments would be managed as OHV limited. Motorized travel would be limited to designated roads, trails, and washes, which would help keep recreationists in designated areas and away from sensitive resources.

These WSR segments would be managed as closed to mineral leasing. Mineral materials development would be allowed with the application of necessary conditions to protect resource values. Any existing or new mining activity would be conducted in a manner that minimizes surface disturbance.

Existing Designated WSRs

Under Alternatives B, C, and D, the existing designated WSRs (Trinity River WSR, Klamath River WSR, and Eel River WSR [Mainstem Eel, North Fork Eel, Middle Fork Eel, South Fork Eel, and Van Duzen]) would be retained. There are State-designated (Section 2(a)(ii) of WSR Act) rivers in both the Redding and Arcata FOs' boundaries. If a designated WSR does not have an identified management corridor, then the management corridor would be 0.25 miles on each side of the river until an implementation-level WSR management plan is completed. These areas would include approximately 15,000 acres on BLM-administered lands within currently designated WSR corridors. The BLM would pursue perfecting existing federally reserved water rights to protect and enhance ORVs as needed. The BLM would manage all designated WSRs to protect and enhance the free-flowing character and identified ORVs in coordination with the classifications. Individual projects within the WSR corridors would be analyzed at the site-specific implementation level, as needed, including a Section 7(a) review of the WSR Act determination.

Trinity River WSR Corridor

These WSR segments would be managed as recreational. The Trinity WSR has a designated management corridor. The BLM would emphasize public lands acquisition along these WSR segments and would manage them as ROW avoidance. The BLM would determine whether ROW proposals are compatible with the rivers' classification and the protection and enhancement of river values. Habitat enhancement and vegetation management projects would be allowed where they have been determined to protect and enhance river values. The BLM would monitor fishing impacts, in conjunction with the Trinity River Restoration Program and CDFW, to determine whether fish ORVs or the sustainability of the recreational angling opportunities are being adversely impacted. If adverse impacts are occurring, the BLM would collaborate with the Trinity River Restoration Program and CDFW in determining management to reduce impacts on the fish ORVs.

The BLM would manage these WSR segments as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should

be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. The area would be managed so that recreational development may be located inside the river corridor; however, the development would be designed to protect and enhance ORVs and to be screened from view from the river, to the extent possible. This would allow for forms of development that could affect ORVs more than development under VRM Class II management.

The BLM would manage these WSR segments as OHV limited. Motorized travel would be limited to designated roads, trails, and washes, which would help keep recreationists in designated areas and away from sensitive resources.

These WSR segments would be managed as closed to livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing can spread the seeds of invasive, nonnative species that can outcompete and eradicate the fragile plants that contribute to the ORVs. Trampling by livestock also compacts soil and disrupts the recharge of soil moisture into the habitat. Alteration to hydrology and to the wet and dry cycles can reduce plant densities or extirpate plant species.

These WSR segments would be managed as closed to mineral leasing. Mineral materials development would be allowed with the application of necessary conditions to protect resource values.

Klamath River WSR Corridor

These WSR segments would be managed as recreational. If Iron Gate and Copco Dams are removed, the BLM would coordinate with agencies and partners in managing the river. The BLM would emphasize public lands acquisition along these WSR segments and would manage them as ROW avoidance. The BLM would determine whether ROW proposals are compatible with the river's classification and the protection and enhancement of river values. Habitat enhancement and vegetation management projects would be allowed where they have been determined to protect and enhance river values.

The BLM would manage these WSR segments as VRM Class III. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Activities may attract attention, but they should not dominate the view of the casual observer. The area would be managed so that recreational development may be located inside the river corridor; however, the development would be designed to protect and enhance ORVs and to be screened from view from the river, to the extent possible. This would allow for forms of development that could affect ORVs more than development under VRM Class II management.

These WSR segments would be managed as OHV limited. Motorized travel would be limited to designated roads, trails, and washes, which would help keep recreationists in designated areas and away from sensitive resources.

These WSR segments would be managed as closed to livestock grazing. This would eliminate the potential effects from livestock grazing in the area. Livestock grazing can spread the seeds of invasive, nonnative species that can outcompete and eradicate the fragile plants that contribute to the ORVs. Trampling by livestock also compacts soil and disrupts the recharge of soil moisture into the habitat. Alteration to hydrology and to the wet and dry cycles can reduce plant densities or extirpate plant species.

These WSR segments would be managed as closed to mineral leasing. Mineral materials development would be allowed with the application of necessary conditions to protect resource values.

Eel River WSR Corridor

These WSR segments (Mainstem Eel, North Fork Eel, Middle Fork Eel, South Fork Eel) would be managed as wild. The BLM would manage the area as closed to surface-disturbing activities, with the exception of permitted research activities consistent with maintaining ORVs.

WSR Segments Identified as Wild, Scenic and Recreational

The BLM would manage these segments the same as under Alternative A.

Alternative B

New Suitable WSRs

Under this alternative, the BLM would manage all 117 eligible river segments (totaling approximately 201.7 miles) as suitable for inclusion in the NWSRS. These areas would include approximately 65,300 acres on BLM-administered lands within suitable WSR corridor segments.

Alternative C

New Suitable WSRs

Under this alternative, the following river segments would be managed as suitable for inclusion in the NWSRS:

- Lacks Creek (7.6 miles)
- Lacks Creek tributaries (3.6 miles)
- Canyon Creek (2.9 miles)

These areas would include approximately 18,600 acres on BLM-administered lands within suitable WSR corridor segments.

All other eligible rivers and creeks would be released from further consideration under the WSR Act.

Alternative D

New Suitable WSRs

Under this alternative, 62 (147.2 miles) river segments would be managed as suitable for inclusion in the NWSRS.

Segments preliminarily classified as Wild:

- Beegum Creek
- Cedar Creek Segment A
- Cedar Creek Segment B
- Cedar Creek Tributary 1
- Cedar Creek Tributary 2
- Eden Creek
- Eden Creek Tributary 1
- Eden Creek Tributary 2

- Elder Creek
- Elder Creek Tributaries
- Hayshed Creek
- Indian Creek I (Trinity River Tributary) Segment A
- Inks Creek
- Inks Creek Tributary
- Lacks Creek
- Lacks Creek Tributaries
- Middle Fork Cottonwood Creek Segment B
- Misery Creek
- North Fork Battle Creek
- North Fork Cedar Creek
- Paralyze Canyon and Tributaries
- Sacramento River Bend Tributary I Segment A
- Sacramento River Segment E
- South Fork Cottonwood Creek Segment A
- Thatcher Creek

Segments preliminarily classified as Scenic:

- Brin Canyon Creek
- Butte Creek I Segment B
- Casoose Creek
- Clear Creek Segment A
- Clear Creek Segment B
- Clear Creek Segment C
- Deep Hole Creek
- Elk Creek
- Grub Gulch
- Horse Canyon Creek
- Hulls Creek Segment B
- Indian Creek I (Trinity River Tributary) Segment B
- Indian Creek I (Trinity River Tributary) Segment C
- Massacre Creek
- North Fork Cottonwood Creek
- Paynes Creek
- Sacramento River Bend Tributary I Segment B
- Sacramento River Bend Tributary 2
- Sacramento River Segment B

- Sacramento River Segment F
- Sevenmile Creek
- Sevenmile Creek Tributaries
- Shasta River Segment A
- South Fork Cottonwood Creek Segment B
- Turtle Creek
- West Branch Butte Creek I
- West Weaver Creek
- West Weaver Creek Tributary

Segments preliminarily classified as Recreational:

- Battle Creek
- Canyon Creek
- Hulls Creek Segment A
- Middle Fork Cottonwood Creek Segment A
- Sacramento River Segment A
- Sacramento River Segment C
- Sacramento River Segment D
- Shasta River Segment B
- South Fork Battle Creek

These areas would include approximately 36,800 acres on BLM-administered lands within suitable WSR corridor segments. Consistent with the WSR classification, these areas would be managed to prioritize Tribal access, as appropriate, while protecting ORVs.

All other eligible rivers and creeks would be released from further consideration under the WSR Act.

Cumulative Impacts

Past and present actions in the cumulative effects analysis area affecting WSRs are mineral exploration and development, livestock grazing, lands and realty development activities, recreation, travel management, and invasive, nonnative species management.

Effects include surface disturbance and vegetation disturbance, displacement of species, habitat fragmentation, and changes to the visual landscape that could affect ORVs or the free-flow status in WSRs. The BLM would adaptively manage WSRs to protect ORVs and the free-flow status; the BLM would also minimize effects, where applicable and feasible.

The BLM continues to protect the ORVs of eligible and suitable streams since the 1993 Redding RMP (BLM 1993) and 1995 Arcata RMP Amendment (BLM 1995b) were signed. Human development on adjacent private lands will continue. In addition, the proposed Klamath River dam removal project (the dam is scheduled for removal in 2024 [Klamath River Renewal 2020]) would potentially improve water quality and habitat for endangered salmon and steelhead (FERC 2020). Under the project, the Klamath

River Renewal Corporation would take ownership of the dam, remove it, and restore the formerly inundated lands.

Reasonably foreseeable future actions are likely to have similar effects as the past and present actions. Grazing in the cumulative effects analysis area is expected to continue where closures are not proposed. Ongoing mineral exploration and development and renewable energy development have the potential to affect ORVs by creating surface disturbance and potentially removing sensitive resources. Similarly, ROW grants could disturb riparian areas. With a projected increase in population and recreational use, there may also be an increased risk of recreational use and visitation. Under all alternatives, incremental effects on existing eligible and suitable WSRs would be limited from minerals, lands and realty, and renewable energy development; this is because most WSRs have use restrictions applicable to these uses. Vegetation and habitat improvement projects would improve WSR vegetation values under all alternatives.

D.4.4 Wilderness, Wilderness Study Areas, and Lands with Wilderness Characteristics

Issue Statements

- How would the alternatives affect the management of wilderness character in designated Wilderness areas?
- How would the alternatives affect the management of WSAs so as not to impair suitability for future determinations by Congress?
- How would the alternatives affect the management of lands with wilderness characteristics?
- Given the current regional development trends and expected climate change related impacts, how would alternatives affect management of wilderness resources?
- How would the alternatives affect the compatibility of wilderness goals and special status species protection and recovery goals?

Affected Environment

Wilderness

Under FLPMA, wilderness preservation is part of the BLM's multiple-use mandate, and the wilderness resource is recognized as part of a spectrum of resource values to be considered during land use planning. The BLM manages lands that have been designated by Congress as wilderness as part of the National Wilderness Preservation System. Once legislation is enacted designating a wilderness, BLM prepares and files the congressionally-required maps and legal boundary descriptions that officially defines the boundaries. This congressional mandate is to manage each wilderness "to preserve its wilderness character." The five qualities that comprise wilderness character are:

- Untrammeled - wilderness as essentially unhindered and free from modern human control or manipulation. This quality is impaired by human activities or actions that control or manipulate the components or processes of ecological systems inside wilderness.
- Natural - wilderness ecological systems should be as free as possible from the effects of modern civilization. This quality may be affected by intended or unintended effects of human activities on the ecological systems inside the wilderness.
- Undeveloped - wilderness has minimal evidence of modern human occupation or modification. This quality is impaired by the presence of structures or installations, and by the use of motor

vehicles, motorized equipment, or mechanical transport that increases people's ability to occupy or modify the environment.

- Outstanding opportunities for solitude or a primitive and unconfined type of recreation - wilderness provides opportunities for people to experience: natural sights and sounds; remote, isolated, unfrequented, or secluded places; and freedom, risk, and the physical and emotional challenges of self-discovery and self-reliance. This quality is impaired by settings that reduce these opportunities, such as visitor encounters, signs of modern civilization, recreation facilities, and management restrictions on visitor behavior.
- Supplemental values - wilderness areas may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value. Though these values are not required of any wilderness, where they are present, they are part of that area's wilderness character, and must be protected as rigorously as any of the four required qualities.

The planning area contains 19 areas designated by Congress as wilderness, totaling 1,427,700 acres. Five of these areas are managed by the BLM: Elkhorn Ridge Wilderness, Yuki Wilderness, South Fork Eel River Wilderness, Yolla Bolly-Middle Eel Wilderness, and Ishi Wilderness, which make up 50,040 acres (4 percent of the designated wilderness in the planning area).

Wilderness Study Areas (FLPMA Section 603 and Section 202)

The BLM also manages WSAs. With the passage of FLPMA in 1976, Congress directed the BLM to conduct a wilderness review process in three phases: inventory, study, and reporting to Congress. Section 603 of FLPMA first required the BLM to inventory all public lands with roadless areas of 5,000 acres or more and to identify those areas that possess wilderness characteristics as enumerated by Congress in Section 2(c) of the Wilderness Act of 1964:

- Naturalness - generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable. The area appears to be in a natural condition.
- Outstanding opportunities for solitude or a primitive and unconfined type of recreation - an area only must possess one or the other. The area does not have to possess outstanding opportunities for both elements, nor does it need to have outstanding opportunities on every acre.
- Has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition – the size criteria is satisfied for areas by meeting specific circumstances (e.g. contiguity).
- May contain ecological, geological, or other features of scientific, educational, scenic, or historical value - supplemental values are not required to be present.

The BLM's inventory, conducted during the inventory process required by Section 201 of FLPMA, focused on roadless areas of 5,000 acres or more, but also identified those roadless areas of less than 5,000 acres that had wilderness characteristics in association with contiguous roadless areas managed by another federal agency or that could be managed to keep those characteristics in an unimpaired condition. The BLM completed this inventory between 1978 and 1980. The BLM documented those areas identified as having wilderness characteristics and designated them as WSAs.

Section 603 of FLPMA also required the BLM to study those areas identified and designated as WSAs to determine and recommend the suitability or unsuitability of each WSA for designation as wilderness and

to provide a report to the President of these recommendations by October 21, 1991. The President was then required to provide a recommendation of areas for wilderness designation by October 21, 1993. With respect to WSAs identified and designated through Section 603 of FLPMA, Congress mandated that the BLM manage such WSAs “so as not to impair the suitability of such areas for preservation as wilderness” until Congress acts regarding the WSA. 43 USC Section 1782(c). This directive is known as the “non-impairment” standard or mandate. Following completion of the wilderness review process required by Section 603 of FLPMA in 1993, the BLM’s obligation to maintain an inventory of all public lands and their resources and other values consistent with Section 201 of FLPMA continues, including inventorying for wilderness characteristics. Section 202 of FLPMA requires the BLM to develop, maintain, and revise land use plans for public lands; these plans set the framework for management, use, and protection of the planning area. Section 202 of FLPMA further provides BLM with broad discretion and authority in deciding how to manage public lands, including management for the preservation of inventoried wilderness characteristics. After completing the reports to Congress required under Section 603 of FLPMA, BLM retains discretion under FLPMA’s multiple-use mandate to designate WSAs under the authority of Sections 202 and 302 of FLPMA (known as a Section 202 WSA) and to manage such areas of land to protect wilderness resources, including under a non-impairment standard.

The BLM administers all WSAs (both those designated by Congress under Section 603 and those administratively designated under Section 202) under the management policies for WSAs (BLM Manual 6330 – Management of Wilderness Study Areas [BLM 2012c]) to avoid impairing the suitability of such areas for preservation as wilderness. BLM must manage Section 603 WSAs under a non-impairment standard unless or until Congress acts, whereas BLM retains the discretion to change Section 202 WSAs (not reported to Congress in 1993) designated as part of a land use planning process through a subsequent land use planning process. Activities that would impair wilderness suitability are prohibited unless they meet certain exceptions (for example, that use is grandfathered, there is a valid existing right that predates the BLM’s designation of the area as a WSA, or the activity protects or enhances wilderness characteristics or values). Since areas established under Section 202 are a land use allocation determined through the BLM land use planning process, the BLM has discretion to modify Section 202 WSA designations in subsequent land use planning process. The decision to establish Section 202 WSA rests with the BLM Authorized Officer. There are currently no Section 202 WSAs within the planning area. Wilderness Study Areas provide an opportunity to protect wilderness characteristics and undisturbed public lands through collaborative land use planning processes such as the development of the NCIP.

Designating an area as a WSA under FLPMA Section 202 is consistent with the BLM’s mandate to manage public lands for multiple use, including preservation of wilderness resources, while also ensuring that decisions about the future of these lands are made with consideration and public input. As described below in the lands with wilderness characteristics section, and under Section 201 of FLPMA, the BLM conducted inventories of all BLM-administered lands to determine which areas had wilderness characteristics. These inventories found 12 areas that demonstrate wilderness characteristics and the proposed management direction to protect the unique values of these areas are further described in **Appendix B**.

As identified in **Table D-86** and **Table D-87**, the decision area contains nine areas designated as wilderness or WSAs for a total of 58,490 acres, of which four are Section 603 WSAs for a total of 8,450 acres on BLM-administered lands, and of which five are designated wilderness areas for a total of 50,040 acres on BLM-administered lands (**Map 2-53** in **Appendix A**).

Table D-86
Section 603 WSAs in the Decision Area

Area Name	Acres of WSAs (BLM-Administered Surface Land)	Acres Recommended for Wilderness
Yolla Bolly Contiguous	600	600
Eden Valley	6,150	6,150
Thatcher Ridge	150	150
Big Butte	1,550	1,550

Source: BLM GIS 2023

Table D-87
Designated Wilderness within the Decision Area

Area Name (Year Designated)	Acres of Wilderness (BLM-Administered Surface Land)
Elkhorn Ridge (2011)	11,120
Yuki (2006)	17,150
South Fork Eel River (2006)	13,020
Yolla Bolly-Middle Eel (1964)	8,550
Ishi (1984)	200

Source: BLM GIS 2023

Lands with Wilderness Characteristics

Consistent with FLPMA's, multiple-use mandate, the BLM is also evaluating whether to manage for the protection of wilderness characteristics as part of a spectrum of resource values to be considered during land use planning. As noted above, Section 201 of the FLPMA requires the BLM to maintain, on a continuing basis, an inventory of all public lands and their resources and other values, which include wilderness characteristics. Section 202 of the FLPMA requires the BLM to rely on resource inventories in the development and revision of land use plans, including inventory information regarding wilderness characteristics. BLM Manual 6320, Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process (Public), establishes BLM policy on considering lands with wilderness characteristics in land use plans and land use plan amendments or revisions (BLM 2021c). In order for an area to qualify as lands with wilderness characteristics, it must possess sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. In addition, it may also possess supplemental values.

The inventory of lands with wilderness characteristics include roadless areas of any size adjacent to wilderness areas or WSAs. BLM Manual 6310, Conducting Wilderness Characteristics Inventory on BLM Lands, establishes a protocol for defining "roads" for the purposes of the inventory (BLM 2021d).

In 2015, the BLM began a lands with wilderness characteristics inventory for the planning area, the results of which are summarized below in **Table D-88** and on **Map 3-15**, Lands with Wilderness Characteristics, in **Appendix A**.

Table D-88
Wilderness Characteristics Inventory Summary

Area Name	Inventoried Acres	Does the Area, or a Portion of the Area, Have Wilderness Characteristics?
Camp St. Michael (Subunits 3 and 4)	50	Yes
Red Mountain	320	Yes
Cahto Peak (Subunit 1)	310	Yes
Yolla Bolly (Subunits 1, 2, and 3)	250	Yes
Gilham Butte (Subunit 1)	5,840	Yes
Brushy Mountain/English Ridge	5,500	Yes
Chappie Shasta (Subunit 3)	7,250	Yes
Grass Valley South (Subunit 1)	7,700	Yes
Sacramento River Bend (Subunit 2)	6,640	Yes
Trinity Alps (Subunit 4)	220	Yes
Lacks Creek	8,949	No
Eden Valley	4,592	No
Grass Valley North	5,540	No
Total	53,161	—

Source: BLM GIS 2023

The inventory does not represent a formal land use allocation or a final agency decision. The BLM's policy in managing lands with wilderness characteristics directs the BLM to consider options for managing lands with wilderness characteristics focusing on several outcomes that may include or be a combination of: (1) allowing for other multiple uses in an area while not protecting wilderness characteristics; (2) minimizing impacts on wilderness characteristics via management restrictions while emphasizing multiple uses; or (3) protecting wilderness characteristics while providing for compatible uses. Distinct from managing Section 202 WSAs, the BLM's policy provides management options for lands with wilderness characteristics of something less than the non-impairment standard. If the BLM concludes through the land use planning process that protection of wilderness characteristics is appropriate, the BLM would manage consistent with protection of those wilderness characteristics.

Various management decisions have allowed changes in land characteristics to occur. Travel management designations that were completed in the last 20 years provide a good example of recent management decisions that reflect this trend. Through the travel management designations, the BLM designated roads as open, closed, or for administrative use only. Roads previously designated as closed are no longer being used and are slowly naturalizing. In some instances, they are already difficult to find on the ground, particularly when the BLM actively decommissioned them through restoration efforts. Over time, this naturalization process can result in more lands that appear natural and that may meet the criteria for possessing wilderness characteristics.

Lands with wilderness characteristics are also trending toward improvement in their natural condition. The imprint of human activities is receding from these areas, except for disturbances caused by wildfire suppression activities, such as creating bulldozer lines and tree falling to stop the spread of wildfires, thereby affecting the naturalness.

Environmental Consequences

Impacts Common to All Alternatives

Under all alternatives, the BLM would continue to manage the following areas as wilderness areas (50,040 acres [13 percent of the decision area], see **Table D-87**):

- Elkhorn Ridge (11,120 acres)
- Yuki (17,150 acres)
- South Fork Eel River (13,020 acres)
- Yolla Bolly-Middle Eel (BLM-administered lands only) (8,550 acres)
- Ishi (200 acres)

Any new wilderness areas designated by Congress would be managed to preserve wilderness character. These forms of management would continue to preserve the qualities and values of these areas.

Additionally, under all alternatives, the BLM would manage the following areas as Section 603 WSAs (8,450 acres [2 percent of the decision area], see **Table D-86**):

- Big Butte (1,550 acres)
- Eden Valley (6,150 acres)
- Thatcher Ridge (150 acres)
- Yolla Bolly Contiguous (600 acres)

Existing Section 603 WSAs would continue to be managed according to the non-impairment standard under all alternatives. If Congress were to release a Section 603 WSA, the BLM would continue to manage the lands to emphasize primitive recreation opportunities.

The wilderness areas and WSAs would continue to be within VRM Class I. The goal of this class is to preserve the existing character of the landscape. The level of change should be very low and must not attract attention. This is to help minimize impacts and maintain the naturalness of an area.

The wilderness areas and WSAs would continue to be managed as a ROW exclusion area. ROW development may lead to surface disturbances and the presence of infrastructure capable of causing the loss of naturalness and outstanding opportunities for solitude or primitive and unconfined types of recreation. This would continue to not occur in ROW exclusion areas. Land retention, acquisition, or disposal decisions could support or challenge the management of natural values or primitive activities. The BLM would consider acquisitions, exchanges, or other decisions that would increase the functional size of areas managed for wilderness characteristics. The BLM would use Wilderness Management of Land Boundary Plans and Wilderness Study Area Management of Land Boundary Plans to identify high risk boundaries subject to activities that would impair the wilderness or wilderness study area suitability. Wildland fire would be managed in wilderness areas and WSAs to meet multiple objectives, including protection and resource benefit. Naturally occurring wildfire would be used to protect, maintain, and enhance resources and, as nearly as possible, would be allowed to function in its natural ecological role as a disturbance agent as discussed in the Guidance for the Implementation of Federal Wildland Fire Management Policy (USDA and DOI 2009).

Vegetation and fuels treatments would continue to protect or enhance the wilderness characteristics or values in wilderness areas or WSAs. They are allowed if they are carried out in a manner that is least disturbing to the site following the non-impairment standards described in BLM Manual 6330 (BLM 2021c). However, lands with wilderness characteristics are not restricted by the non-impairment standard so a larger variety of treatment methods could be used.

All alternatives contain lands with wilderness characteristics, but not all alternatives have management actions for lands with wilderness characteristics. Each alternative would impact wilderness characteristics to some degree. Generally, actions that create surface disturbances degrade the natural characteristics of lands with wilderness characteristics and the setting for experiences of solitude and primitive and unconfined recreational activities. Mineral development, locatable mineral development, and mineral materials development can impact lands with wilderness characteristics by disturbing the natural landscape surface for drilling and related development, including roads and pipelines. However, the NCIP AMS (BLM 2021a, Chapter 2, Area Profile) forecasts the potential for development of all these mineral types as low. Authorizing ROWs such as roads, communication sites, or transmission lines can impact lands with wilderness characteristics by impacting the size of an unroaded unit. Developed recreation that may occur within an SRMA or ERMA may impact a unit's primitive and unconfined recreation or solitude. OHV use in areas limited to designated routes or existing routes may also impact a unit's primitive and unconfined recreation or solitude.

Wilderness areas (50,040 acres) and WSAs (8,450 acres) would continue to be closed to OHV travel. OHV use could affect wilderness areas and WSAs by leading to a loss of naturalness and outstanding opportunities for solitude or primitive and unconfined types of recreation and increased noise disturbances. OHV use could impact opportunities for solitude or primitive and unconfined recreation by creating noise disturbances from OHV use.

Alternative A

Wilderness and WSA Management

The designated wilderness and Section 603 WSAs would continue to be managed as noted above under *Impacts Common to All Alternatives*.

Lands with Wilderness Characteristics

Under Alternative A, areas identified as having wilderness characteristics would remain under current management (**Table D-88**); however, these areas would not be given priority over other resources or resource uses; the areas are not currently managed for wilderness characteristics. Therefore, the area or a portion of the area containing wilderness characteristics may be altered to the point that the wilderness characteristics are lost.

Within areas with wilderness characteristics, 12,700 acres would continue to be available to livestock grazing under this alternative. Because the BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP, impacts on areas with wilderness characteristics from livestock grazing would be limited to those areas with active grazing allotments. Under Alternative A, current management plans do not provide the proper direction regarding the management of lands that possess wilderness characteristics, and they are currently not given priority over other resources or resource uses. New range improvements are only allowed to protect the naturalness aspect of wilderness characteristics. Fencing could limit unconfined recreation. Maintenance of range improvements could

result in short-term impacts on solitude and apparent naturalness. Solitude on areas with wilderness characteristics would also continue to be affected by the allowable motorized use for livestock grazing operations and construction of any new facilities necessary to manage and utilize AUMs. Mineral development could result in surface disturbances by leading to a loss of naturalness and opportunities for primitive and unconfined recreation. Actions consistent with VRM Class III could result in a loss of natural character of the areas with wilderness characteristics. Areas open to ROW development under this alternative could lead to surface disturbances and if the ROW features bisect an area with wilderness characteristics, it could reduce the area, so it no longer meets the size criteria. Management actions for vegetation, forestry and fuels may result in short term impacts, but over time would promote the health of native vegetation communities leading to no impact on areas with wilderness characteristics.

Travel Management

Within the areas with wilderness characteristics, 34,100 acres of land would continue to be limited to OHV travel under this alternative. The BLM would not authorize OHV use in wilderness, except in cases where ROW maintenance or livestock management is required. OHV use could affect areas with wilderness characteristics by impacting naturalness due to the persistence of travel routes and impacting outstanding opportunities for solitude or primitive and unconfined types of recreation. OHV use could impact opportunities for solitude or primitive and unconfined recreation by creating noise disturbances from OHVs.

Minerals Management

Under this alternative, the wilderness areas and WSAs would continue to be closed to mineral materials development and closed to fluid mineral development. There would be 50,040 acres of wilderness withdrawn from locatable mineral entry. Locatable minerals would continue to be open for development on 8,500 acres of WSAs. By creating surface disturbances, mineral development and leasing could lead to a loss of naturalness and outstanding opportunities for solitude or primitive and unconfined types of recreation.

Within the areas with wilderness characteristics, 33,400 acres would continue to be open to locatable mineral entry, 27,000 acres would continue to be open to mineral materials development, 6,400 acres would continue to be open to mineral leasing with stipulations, and 27,000 acres would continue to be open to leasing with standard lease terms under this alternative. By creating surface disturbances, mineral development could affect areas with wilderness characteristics by leading to a loss of naturalness and outstanding opportunities for solitude or primitive and unconfined types of recreation.

Livestock Grazing

Under this alternative, 11,200 acres of land (reflective of three active allotments) would continue to be available for livestock grazing in wilderness areas and 1,400 acres (reflective of two active allotments) would continue to be available to livestock grazing in Section 603 WSAs. Within these acres, impacts from grazing would be limited to the smaller grazing allotments where grazing is active. Existing range improvements used for grazing, such as fences, stock trails, springs, and stock ponds, constitute an established use and would continue to be maintained. New range improvements are only allowed to protect the naturalness aspect of wilderness character. While new range improvements could have a negative impact on some aspects of wilderness character (untrammelled), they would not be allowed if they would not improve or maintain wilderness character. Fencing could limit unconfined recreation. Maintenance of range improvements could result in short-term impacts on solitude and apparent

naturalness. Solitude would also be affected by the allowable motorized use for livestock grazing operations and construction of any new facilities

Within the areas identified as having wilderness characteristics, 12,700 acres would continue to be available to livestock grazing under this alternative. Within these acres, impacts from grazing would be limited to the smaller grazing allotments where grazing is active. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP. Impacts on areas with wilderness characteristics would continue to occur from livestock grazing under Alternative A. The existing range improvements used for grazing, such as fences, stock trails, springs, and stock ponds, constitute an established use and would continue to be maintained. New range improvements are only allowed to protect the naturalness aspect of wilderness characteristics. While new range improvements could have a negative impact on some aspects of wilderness character (untrammeled), overall, they would not be allowed if they would not improve or maintain wilderness character. Fencing could limit unconfined recreation. Maintenance of range improvements could result in short-term impacts on solitude and naturalness. Solitude would also be affected by the allowable motorized use for livestock grazing operations and construction of any new facilities.

Vegetation, Forestry, and Fuels Management

Vegetation management, including forestry and fuels management treatments would affect the appearance of naturalness in wilderness, WSAs, and areas with wilderness characteristics. However, the objectives of treatments would be to promote the health of native vegetation communities, ultimately leading to no impact on the appearance of naturalness. These treatments sometimes necessitate the creation of temporary roads or trails, which could temporarily impact wilderness qualities until the temporary roads revegetate to a more natural state. BMPs and other techniques to minimize impacts on the naturalness of the areas with wilderness qualities could be used under Alternative A to further limit impacts (**Appendix F**); however, those techniques are not given priority for lands with wilderness characteristics under Alternative A.

Visual Resources Management

Under Alternative A, designated wilderness areas and existing WSAs (Section 603) would continue to be managed as VRM Class I. This would continue to preserve the existing natural character of the landscape in these areas (8,450 acres).

Lands and Realty

Designated wilderness areas and existing WSAs (Section 603) would continue to be managed as ROW exclusion areas. This would continue to preserve these areas (58,490 acres). This would minimize ROW development that may lead to surface disturbances and the presence of infrastructure capable of causing the loss of naturalness and outstanding opportunities for solitude or primitive and unconfined types of recreation.

The BLM would continue to manage 700 acres as ROW avoidance areas within the areas with wilderness characteristics. Also, there would continue to be 33,400 acres open to ROW authorizations under this alternative. ROW development may continue to lead to surface disturbances and the presence of infrastructure capable of causing the loss of naturalness and outstanding opportunities for solitude or primitive and unconfined types of recreation. This would continue to not occur in ROW exclusion areas in lands with wilderness characteristics. Further, ROW features have the potential to act as boundaries

for areas with wilderness characteristics units. If a ROW feature were to bisect a unit, depending on its current size, it could reduce the area so that it no longer meets the size criteria. Developed ROWs are listed in BLM Manual 6310 as a boundary for areas with wilderness characteristics units (BLM 2021d). Authorizing ROWs could impact areas with wilderness characteristics by altering the size of an unroaded unit. With the development of ROWs, like transmission lines, there is an impact on the surface of the land to create these features. This could contribute to a loss of naturalness of the areas with wilderness characteristics.

Alternative B

Wilderness and WSA Management

The BLM identified six areas under Alternative B (**Table B-1** in **Appendix B**) with wilderness characteristics that may be suitable for WSA designation due to their unique values, public input, or contiguity with designated wilderness or their large intact landscapes. The BLM would elect to manage these areas as Section 202 WSAs (12,090 acres [3 percent of the decision area]) under Alternative B:

- Brushy Mountain/English Ridge (5,500 acres)
- Gilham Butte (5,840 acres)
- Red Mountain (320 acres)
- Trinity Alps (220 acres)
- Yolla Bolly (Subunit 1, 30 acres)
- Yolla Bolly (Subunit 2, 180 acres)

These areas under consideration for designation as Section 202 WSAs exhibit naturalness and in combination with the contiguous wilderness, have the same outstanding opportunities for solitude, primitive and unconfined recreation, and supplemental values possessed by the existing wilderness area.

The BLM manages WSAs to a non-impairment standard as reflected in BLM Manual 6330, which includes more stringent management restrictions than lands with wilderness characteristics, such as prohibitions on new permanent roads or structures, and limitations on motorized vehicle use and other activities that could impact their wilderness characteristics. The lands with wilderness characteristics not proposed as Section 202 WSAs may require more flexibility in their management, such as areas with identified needs for long term forest restoration due to past forestry practices and exclusion of fire, which is generally not consistent with the non-impairment standard.

Lands with Wilderness Characteristics

Under Alternative B, the BLM would manage 21,970 acres (6 percent of the decision area and 41 percent of the inventoried lands with wilderness characteristics) as lands with wilderness characteristics to protect wilderness characteristics as a priority over other multiple uses (see **Table 2-1**). Under this alternative, there would be 21,970 more acres (6 percent of the decision area) of lands with wilderness characteristics managed as a priority than under Alternative A. As a result, more lands with wilderness characteristics would be protected as a priority over other multiple uses. This would preserve more areas with natural conditions and outstanding opportunities for solitude or primitive and unconfined recreation.

Under this alternative, the BLM would designate 12,090 acres of lands with wilderness characteristics as Section 202 WSAs. These areas, like the Section 603 WSAs, would be managed under a non-impairment

standard consistent with BLM Manual 6330 – Management of BLM Wilderness Study Areas in order to maintain the area’s suitability for preservation as wilderness. The lands with wilderness characteristics not proposed as Section 202 WSAs under Alternative B may require more flexibility in their management, such as areas with identified needs for long term forest restoration due to past forestry practices and exclusion of fire, which is generally not consistent with the non-impairment standard.

Travel Management

Section 202 WSAs (12,090 acres) would be closed to OHV use. Compared with impacts described above under *Impacts Common to All Alternatives*, this would provide more protection for wilderness and WSAs.

Under Alternative B, OHV use would be limited to travel on existing routes within the 22,000 acres of lands with wilderness characteristics. Compared with Alternative A, there would be similar impacts on lands impacts on lands with wilderness characteristics from OHV use, but it would occur on 12,100 fewer acres.

Minerals Management

Under Alternative B, the types of impacts from minerals management on wilderness and WSAs would be similar to those described under Alternative A. However, under Alternative B, the BLM would recommend the 8,450 acres of Section 603 WSAs for withdrawal from locatable mineral entry. Where not already withdrawn, Section 202 WSAs (12,090 acres) would also be recommended for withdrawal from locatable mineral entry. Compared with Alternative A, this would provide more protection for wilderness and WSAs. These actions would limit the surface disturbance caused by these activities and help preserve the naturalness and outstanding opportunities for solitude or primitive and unconfined types of recreation. Valid existing claims or leases would not be recommended for withdrawal.

Under Alternative B, the types of impacts from minerals management on lands with wilderness characteristics would be similar to those described for the areas of wilderness characteristics under Alternative A. However, under Alternative B, the 21,970 acres of lands with wilderness characteristics that would be managed to protect as a priority over other multiple uses would be closed to mineral leasing, closed to mineral materials development, and recommended for withdrawal from locatable mineral entry. Compared with Alternative A, this alternative provides more protection to lands with wilderness characteristics from surface disturbances created by mineral development because of the 21,970 acres that are closed to mineral development.

Livestock Grazing

Livestock grazing is a grandfathered use and would only be available in wilderness, WSAs, and lands with wilderness characteristics where existing livestock grazing occurs. Even though Alternative B would allocate more acres as available for grazing than Alternative A, this would not automatically mean that there would be an increase in the amount of grazing that would occur. The likelihood of the BLM receiving applications for new areas to graze is low, as is the likelihood of the BLM allocating new AUMs.

Under Alternative B, the types of impacts from livestock grazing on wilderness would be the same as those described under Alternative A. Livestock grazing would be available on 11,300 acres of wilderness; however, only 10,900 acres of wilderness would overlap with three active grazing allotments. Under Alternative B, 1,300 acres of Section 603 and Section 202 WSAs would be available to livestock grazing; however, only 900 acres of the WSAs would overlap with active grazing allotments. Compared with

Alternative A, this would provide more protection to all WSAs as there would be fewer acres available to livestock grazing under Alternative B.

Under Alternative B, livestock grazing would be available on 7,900 acres of lands with wilderness characteristics (6,900 acres of which would be managed to protect as a priority over other multiple uses). Compared with Alternative A, this would provide more protection to lands with wilderness characteristics as there would be 4,800 fewer acres available to livestock grazing under Alternative B.

Within acres available for livestock grazing, impacts from grazing would be limited to smaller grazing allotments where grazing is active. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

Vegetation, Forestry, and Fuels Management

Under Alternative B, vegetation, fuels treatments, and restoration would be implemented based on analysis using the Minimum Requirements Decision Guide. Vegetation and wildlife management may include techniques to minimize impacts on naturalness from activities such as construction of suppression lines and vegetation clearing, and to restore native vegetation communities. Temporary impacts on naturalness may occur with the use of vegetation and fuels treatments; over time, however, these treatments aim to restore the naturalness of the area. Compared with Alternative A, there would be more beneficial impacts caused by the restoration of the naturalness of the wilderness areas and Section 603 and Section 202 WSAs under this alternative.

Vegetation management, including forestry and fuels management treatments, may include techniques to minimize impacts on the naturalness of the lands with wilderness characteristics from activities such as construction of temporary suppression lines for forest and fuel treatment projects and vegetation clearing to restore native vegetation communities. Any fire suppression lines utilizing heavy equipment or post fire vegetation projects utilizing heavy equipment would only be done after appropriate approvals are obtained for equipment use in BLM wilderness areas. These projects would only be permitted if they do not impact wilderness characteristics. Temporary impacts on naturalness may occur with the use of vegetation and fuels treatments. Over time, however, these treatments would aim to restore the naturalness of the area. Additionally, treatments that would be specifically designed to provide for resource benefits, such as threatened and endangered species habitat protection, would be considered in these areas. Compared with Alternative A, there would be more beneficial impacts caused by the restoration of the naturalness from vegetation and forestry management on the lands with wilderness characteristics under this alternative because these areas would be given priority unlike under Alternative A.

Visual Resources Management

Under Alternative B, the lands with wilderness characteristics that would be managed to protect as a priority over other multiple uses would be managed as a VRM Class II. The goal of this class is to retain the existing character of the landscape, and it allows for a low level of change that should not attract the attention of an observer. This would be to help maintain the naturalness of an area. All these multiple uses would be managed to provide as little impact as possible on lands with wilderness characteristics by preserving the naturalness and opportunities for solitude or primitive and unconfined recreation. Compared with Alternative A, there would be 21,970 more acres managed as a VRM Class II which would provide more protection to lands with wilderness characteristics.

The impacts on wilderness areas and WSAs from visual resource management would be similar to those described above under Alternative A, except 70,600 acres (instead of 58,900 acres under Alternative A) would be VRM Class I. This is because of the additional Section 202 WSA acres under Alternative B.

Lands and Realty

The impacts on wilderness areas and WSAs (Section 603) from ROW exclusion areas would be similar to those described above under Alternative A, except 70,600 acres (instead of 58,900 acres under Alternative A) would be ROW exclusion areas. This is because of the additional Section 202 WSA acres under Alternative B.

Under Alternative B, the types of impacts from ROW development on lands with wilderness characteristics would be similar to those described for the areas of wilderness characteristics under Alternative A. Under Alternative B, there would be 22,000 acres of lands with wilderness characteristics that would be managed to protect as a priority over other multiple uses that would be managed as a ROW exclusion area. Compared with Alternative A, lands with wilderness characteristics would be more protected from ROW disturbances under this alternative because there would be lands managed as ROW exclusion. This would also protect the lands with wilderness characteristics from surface disturbances that could impact the naturalness and opportunities for primitive and unconfined recreation as well as new ROWs that could alter the size of the lands with wilderness characteristics unit. The BLM would focus acquisition on non-BLM parcels that are adjacent to lands with wilderness characteristics and assess newly acquired parcels for lands with wilderness characteristics.

Alternative C

Wilderness and WSA Management

The designated wilderness and Section 603 WSAs would continue to be managed as noted above under *Impacts Common to All Alternatives*. No Section 202 WSAs would be designated under Alternative C.

Lands with Wilderness Characteristics

Under Alternative C, 5,840 acres (2 percent of the decision area and 11 percent of the inventoried lands with wilderness characteristics) of land with wilderness characteristics would be managed to protect wilderness characteristics as a priority over other multiple uses and the remaining acres would be managed to minimize impacts on wilderness characteristics while emphasizing other uses, 28,220 acres (9 percent of the decision area and 53 percent of the inventoried lands with wilderness characteristics) (see **Table 2-1**). Under this alternative, compared with Alternative A, there are 5,840 more acres (2 percent of the decision area) of lands with wilderness characteristics managed as a priority over other multiple uses. This would preserve more areas with natural conditions and outstanding opportunities for solitude or primitive and unconfined recreation. Depending on management, activities on lands with wilderness characteristics where the BLM would minimize impacts on wilderness characteristics while emphasizing other multiple uses could degrade the values and qualities of wilderness. This could result, for example, from the development of infrastructure in these areas. Management would consider wilderness characteristics before allowing activities in these areas.

Travel Management

Under Alternative C, OHV use limited to travel of existing routes within the 5,800 acres of lands with wilderness characteristics that are managed to protect as a priority over other multiple uses. Of the

remaining lands with wilderness characteristics, there are 28,200 acres that would be managed as an OHV limited area. Compared with Alternative A, there would be similar impacts on lands with wilderness characteristics from OHV use, but it would occur on 100 fewer acres.

Minerals Management

Under Alternative C, the types of impacts from minerals management on wilderness and WSAs would be similar to those described under Alternative A. However, there are 8,450 acres of WSAs recommended for withdrawal, and 50,040 acres of wilderness withdrawn from locatable mineral entry and development work under this alternative. There are no Section 202 WSAs. The recommendation for withdrawal would not provide protection for WSAs unless the withdrawal was enacted by Congress or the Secretary of the Interior in a separate action, so impacts from locatable minerals would be the same as under Alternative A.

Under Alternative C, the types of impacts from minerals management on lands with wilderness characteristics would be similar to those described for the areas of wilderness characteristics under Alternative A. However, under Alternative C, the 5,840 acres of lands with wilderness characteristics that would be managed to protect as a priority over other multiple uses would be closed to mineral leasing, closed to mineral materials development, and recommended for withdrawal from locatable mineral entry. Of the 28,200 acres of lands with wilderness characteristics that would be managed to minimize impacts there would be 27,500 acres open to locatable mineral development, 13,600 acres open to fluid mineral development, and 13,300 acres open to mineral materials development. Compared with Alternative A, this alternative provides more protection to lands with wilderness characteristics from surface disturbances created by mineral development because of the areas that would be managed to protect lands with wilderness characteristics that would be closed to mineral development.

Livestock Grazing

Livestock grazing is a grandfathered use and would only be available in wilderness, WSAs, and lands with wilderness characteristics where existing livestock grazing occurs. Even though Alternative C would allocate more acres as available for livestock grazing than Alternative A, this would not automatically mean that there would be an increase in the amount of grazing that would occur. The likelihood of the BLM receiving applications for new areas to graze is low, as is the likelihood of the BLM allocating new AUMs.

Impacts from livestock grazing on wilderness and Section 603 WSAs would be the same as under Alternative A. There would be 11,200 acres of wilderness open to grazing (reflective of three active allotments) and 1,400 acres available to grazing in Section 603 WSAs (reflective of two active allotments). There would be no Section 202 WSAs available for livestock grazing under Alternative C.

Under Alternative C, livestock grazing would be available on 3,500 acres of lands with wilderness characteristics that would be managed to protect as a priority over other multiple uses. Livestock grazing would also be available on 12,700 acres of lands with wilderness characteristics that would be managed to minimize impacts while emphasizing multiple uses. The nature and type of impacts from livestock grazing on lands with wilderness characteristics would be the same as described under Alternative A. Even though livestock grazing would be available on 3,500 acres of lands with wilderness characteristics that would be managed to protect as a priority over other multiple uses, the likelihood of new grazing occurring on these lands is low.

Within acres available for livestock grazing, impacts from grazing would be limited to smaller grazing allotments where grazing is active. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

Vegetation, Forestry, and Fuels Management

Under Alternative C, the types of impacts from vegetation and forestry, and fuels management on wilderness and WSAs would be the similar as those described under Alternative B. However, under this alternative they are available on 8,450 acres of Section 603 WSAs and 50,040 acres of wilderness. Compared with Alternative A, there would be more beneficial impacts caused by the restoration of the naturalness of the wilderness areas and WSAs under Alternative C.

Under Alternative C, the impacts from vegetation and forestry management on lands with wilderness characteristics managed as a priority over multiple uses would be similar to those described under Alternative B. When compared with Alternative A, there would be more beneficial impacts caused by the restoration of the naturalness through vegetation and forestry management on the 5,840 acres of lands with wilderness characteristics managed as a priority over multiple uses under this alternative because this management priority does not exist under Alternative A.

Visual Resources Management

Under Alternative C, there would be 5,800 acres of lands with wilderness characteristics managed as a priority over other multiple uses that would be managed as a VRM Class II. There would be 700 acres of lands with wilderness characteristics that would be managed to minimize impacts that would be managed as a VRM Class II and 27,500 acres that would be managed as a VRM Class III. Compared with Alternative A, there would be more protection for lands with wilderness characteristics because of the areas that would be managed as a VRM Class II that permit low levels of change.

The impacts on wilderness areas and WSAs (Section 603) from visual resources management would be the same as Alternative A. There would be no Section 202 WSAs identified under Alternative C.

Lands and Realty

The impacts on wilderness areas and WSAs (Section 603) from ROW exclusion areas would be the same as Alternative A. There would be no Section 202 WSAs identified under Alternative C.

Under Alternative C, 5,800 acres of lands with wilderness characteristics managed as a priority over other multiple uses would be managed as ROW exclusion. There would be 7,200 acres of lands with wilderness characteristics that would be managed to minimize impacts that would be managed as a ROW exclusion area, 20,800 acres that would be managed as a ROW avoidance area, and 100 acres that would be open to ROW authorization. Compared with Alternative A, lands with wilderness characteristics would be more protected from ROW disturbances under this alternative because all lands with wilderness characteristics would be managed as ROW exclusion and ROW avoidance. This would also protect the lands with wilderness characteristics from surface disturbances that could impact the naturalness and opportunities for primitive and unconfined recreation as well as new ROWs that could alter the size of the lands with wilderness characteristics unit.

Alternative D

Wilderness and WSA Management

The designated wilderness and Section 603 WSAs would continue to be managed as noted above under *Impacts Common to All Alternatives*. The BLM identified two areas under Alternative D (**Table B-1** in **Appendix B**) with wilderness characteristics that may be suitable for WSA designation due to their unique values, public input, or contiguity with designated wilderness or their large intact landscapes. The BLM would elect to manage these areas as Section 202 WSAs (540 acres [less than 1 percent of the decision area]) under Alternative D:

- Red Mountain (320 acres)
- Trinity Alps (Subunit 4,220 acres)

These areas under consideration for designation as Section 202 WSAs exhibit naturalness and in combination with the contiguous wilderness, have the same outstanding opportunities for solitude, primitive and unconfined recreation, and supplemental values possessed by the existing wilderness area.

Under Alternative D, if Congress releases Section 603 WSAs, the BLM would manage the lands similarly to surrounding non-wilderness areas. Any new wilderness areas designated by Congress would also be managed to preserve wilderness character. The BLM would manage all WSAs to a non-impairment standard as reflected in BLM Manual 6330, which includes more stringent management restrictions than lands with wilderness characteristics, such as prohibitions on new permanent roads or structures, and limitations on motorized vehicle use and other activities that could impact their wilderness characteristics. Due to their contiguity with existing wilderness, management of the two areas identified under Alternative D for designation as Section 202 WSAs would have few conflicts with the management restrictions that would be implemented under the non-impairment standard.

Lands with Wilderness Characteristics

Under Alternative D, the BLM would manage the 11,570 acres (3 percent of the decision area and 22 percent of the inventoried lands with wilderness characteristics) of lands with wilderness characteristics to protect wilderness characteristics as a priority over other multiple uses. The remaining acres (21,950 acres, or 8 percent of the decision area and 41 percent of the inventoried lands with wilderness characteristics) would be managed to minimize impacts on wilderness characteristics while emphasizing other uses (see **Table 2-1**). If future acquisitions adjacent to an inventory unit increase the size of the unit so that it would meet the size criteria of 5,000 acres or cause the unit to become contiguous with a designated wilderness or WSA, the BLM would update the wilderness characteristics inventory for the unit.

Under this alternative, there would be 11,570 more acres (3 percent of the decision area) of lands with wilderness characteristics managed as a priority than under Alternative A. As a result, more lands with wilderness characteristics would be protected as a priority over other multiple uses. This would preserve more areas with natural conditions and outstanding opportunities for solitude or primitive and unconfined recreation. Depending on management, activities on lands with wilderness characteristics where the BLM would minimize impacts on wilderness characteristics while emphasizing other multiple uses could degrade the values and qualities of wilderness. This could result, for example, from the development of infrastructure in these areas. Management would consider wilderness characteristics before allowing activities in these areas.

Under this alternative, the BLM would designate 540 acres of lands with wilderness characteristics as Section 202 WSAs (see section above for WSA discussion). These areas, like the Section 603 WSAs, would be managed under a non-impairment standard consistent with BLM Manual 6330 – Management of BLM Wilderness Study Areas in order to maintain the area’s suitability for preservation as wilderness. The lands with wilderness characteristics not proposed as Section 202 WSAs under Alternative D may require more flexibility in their management, such as areas with identified needs for long term forest restoration due to past forestry practices and exclusion of fire, which is generally not consistent with the non-impairment standard.

Travel Management

Under Alternative D, OHV use would be limited to travel of existing routes within 11,600 acres of lands with wilderness characteristics that are managed to protect as a priority over other multiple uses. Of the lands with wilderness characteristics that would be managed to minimize impacts, there would be 22,000 acres that would be managed as an OHV limited area. Compared with Alternative A, there would be similar impacts on lands with wilderness characteristics from OHV use, but it would occur on 500 fewer acres.

Minerals Management

Under Alternative D, the types of impacts from minerals management on wilderness and WSAs would be similar to those described under Alternative A. However, there are 8,450 acres of Section 603 WSAs recommended for withdrawal under this alternative. Where not already withdrawn, Section 202 WSAs (540 acres) would also be recommended for withdrawal from locatable mineral entry. The recommendations for withdrawal would not provide protection for WSAs unless the withdrawal was enacted by Congress or the Secretary of the Interior in a separate action, so impacts from locatable minerals would be the same as under Alternative A.

Under Alternative D, the types of impacts from minerals management on lands with wilderness characteristics would be similar to those described for the areas of wilderness characteristics under Alternative A. However, under Alternative D, the 11,600 acres of lands with wilderness characteristics that would be managed to protect as a priority over other multiple uses would be closed to mineral leasing, closed to mineral materials development and recommended for withdrawal from locatable mineral entry. Of the remaining acres of lands with wilderness characteristics that would be managed to minimize impacts there would be 22,000 acres open to locatable mineral development, 7,800 acres open to fluid mineral development, and 7,800 acres open to mineral materials development. Compared with Alternative A, this alternative would provide more protection to lands with wilderness characteristics from surface disturbances created by mineral development because of the areas that are managed to protect lands with wilderness characteristics that would be closed to mineral development.

Livestock Grazing

Livestock grazing is a grandfathered use and would only be available in wilderness, WSAs, and lands with wilderness characteristics where existing livestock grazing occurs. Even though Alternative D would allocate more acres as available for livestock grazing than Alternative A, this would not automatically mean that there would be an increase in the amount of grazing that would occur. The likelihood of the BLM receiving applications for new areas to graze is low, as is the likelihood of the BLM allocating new AUMs.

Under Alternative D, livestock grazing would be available on 9,400 acres of wilderness; however, only 9,100 acres of wilderness would overlap with three active grazing allotments. There would be 100 acres of Section 603 WSAs available to livestock grazing; those 100 acres of WSAs would also overlap with active grazing allotments. There would be no Section 202 WSAs available for grazing under Alternative D.

Under Alternative D, livestock grazing would be available on 6,700 acres of lands with wilderness characteristics that would be managed to minimize impacts. However, there would only be 3,000 acres of lands with wilderness characteristics managed to minimize impacts on wilderness characteristics that overlap with active grazing allotments. Because the BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP, impacts on lands with wilderness characteristics would be limited to these areas of overlap with active allotments. These impacts would be similar to Alternative B, except there would be 1,200 fewer acres of lands with wilderness characteristics. Within acres available for livestock grazing, impacts from grazing would be limited to smaller grazing allotments where grazing is active. The BLM does not anticipate a substantial increase in grazing allotment acreage over the life of the RMP.

Vegetation, Forestry, and Fuels Management

Under Alternative D, the types of impacts from vegetation and wildlife management on wilderness and WSAs would be similar as those described under Alternative B. However, under this alternative they are available on 8,990 acres of WSAs and 50,040 acres of wilderness. Compared with Alternative A, there would be more beneficial impacts caused by the restoration of the naturalness of the wilderness areas and WSAs under this alternative.

Under Alternative D, the impacts from vegetation and forestry management on lands with wilderness characteristics would be similar as those described under Alternative B. However, under this alternative vegetation and forestry management projects would only be permitted on the 11,570 acres being managed as a priority over multiple uses and if they will not impact wilderness characteristics. Compared with Alternative A, there would be more beneficial impacts caused by the restoration of the naturalness from vegetation and forestry management on the lands with wilderness characteristics under this alternative because these areas are given priority unlike Alternative A.

Visual Resources Management

Under Alternative D, 11,600 acres of lands with wilderness characteristics managed as a priority over other multiple uses would be managed as a VRM Class II. The 10,800 acres of lands with wilderness characteristics that would be managed to minimize impacts that would be managed as VRM Class II, and 11,200 acres would be managed as a VRM Class III. Compared with Alternative A, there would be more protection for lands with wilderness characteristics by VRM because 22,400 acres more would be managed as a VRM Class II. As a result, these areas would retain the existing character of the landscape.

The impacts on wilderness areas and all WSAs from visual resource management would be similar to those described above under Alternative A, except 59,030 acres (instead of 58,490 acres under Alternative A) would be VRM Class I. This is because of the additional Section 202 WSA acres under Alternative D.

Lands and Realty

The impacts on wilderness areas and Section 603 WSAs from ROW exclusion areas would be similar to those described above under Alternative A, except 59,030 acres (instead of 58,490 acres under Alternative

A) would be ROW exclusion areas. This is because of the additional Section 202 WSA acres under Alternative D.

Under Alternative D, the 11,600 acres of lands with wilderness characteristics that would be managed to protect as a priority over other multiple uses would be managed as ROW exclusion. The lands with wilderness characteristics that would be managed to minimize impacts would be managed as ROW exclusion for 6,500 acres, and 15,400 acres that would be managed as ROW avoidance. Compared with Alternative A, lands with wilderness characteristics would be more protected from ROW disturbances under this alternative because all the lands with wilderness characteristics would be managed as ROW exclusion and ROW avoidance areas. This would also protect the lands with wilderness characteristics from surface disturbances that could impact the naturalness and opportunities for primitive and unconfined recreation as well as new ROWs that could alter the size of the lands with wilderness characteristics unit.

Cumulative Impacts

Past, present, and future actions that would affect wilderness, WSAs, and lands with wilderness characteristics within the planning area include mineral exploration and development, livestock grazing, recreation, travel management, and vegetation and fuels treatments (**Appendix C**).

Future trends in grazing depend on environmental factors, such as water availability and demand; therefore, it is unknown whether current grazing practices in the planning area will continue or change. Depending on grazing intensity, grazing-induced ground disturbances, such as vegetation trampling, can degrade the quality of the naturalness of wilderness areas, WSAs, and lands with wilderness characteristics.

In considering human actions, the use and popularity of OHVs are likely to increase. This would result in increased impacts on existing trails and roads as well as the need to modify existing or develop new trails to meet this increase in demand. This could lead to impacts on the existing naturalness of wilderness, WSAs, and lands with wilderness characteristics from increased recreation use.

In the long term, any vegetation and fuels treatments would be beneficial to wilderness, WSAs, and lands with wilderness characteristics. Vegetation treatments that include manual, mechanical, biological, and chemical treatments and prescribed fire to reduce hazardous fuels and undesirable vegetation were used in the planning area. These treatments, and maintenance of these vegetation treatments, would likely continue. Temporary impacts on the naturalness of the wilderness areas, WSAs, and lands with wilderness characteristics may occur with any surface disturbances the vegetation and fuels treatments may cause. Over time, however, these treatments would aim to restore the naturalness of the area.

There are no leases or applications for oil and gas leasing on BLM-administered land or mineral estate in the planning area, nor have any been applied for in over 20 years. Mineral development could continue to affect wilderness areas, WSAs, and lands with wilderness characteristics by leading to a loss of naturalness and outstanding opportunities for solitude or primitive and unconfined types of recreation by creating surface disturbances; however, it is likely that this would only come from existing mineral exploration and development.

When impacts on wilderness and WSAs from Alternative A are combined with the impacts on wilderness and WSAs from the reasonably foreseeable future actions described above, there would be minimal

contribution to cumulative impacts. This is because all WSAs and wilderness areas are currently managed in accordance with BLM Manuals 6330 and 6340, respectively (BLM 2012d, 2012e). Wilderness management plans are developed in accordance with BLM Manual 8561, Wilderness Management Plans. These forms of management would continue to preserve the qualities and values of these areas.

The greatest contribution to cumulative impacts under the action alternatives would be under Alternative C, which would include the fewest acres being closed to OHV travel and have the fewest protections for wilderness, WSAs, and lands with wilderness characteristics, including changes to the untrammeled and naturalness of the planning area, opportunities for solitude or primitive and unconfined recreation, and unique or supplemental values, from surface-disturbing activities. Alternative B would have the smallest contribution to cumulative impacts as the amount of acres identified and managed as wilderness, WSAs (Section 603 and Section 202), and lands with wilderness characteristics is larger than the other three alternatives. Alternative A would contribute to cumulative impacts more than Alternative B and Alternative D, as there would be fewer acres of Section 202 WSAs and lands with wilderness characteristics managed to protect the characteristics as a priority over other multiple uses.

D.5 SOCIAL AND ECONOMIC

D.5.1 Social and Economic Conditions

The discussion of the social and economic conditions includes a discussion of the Arcata FO and the Redding FO, which include the following counties: Butte County, Del Norte County, Humboldt County, Mendocino County, Shasta County, Siskiyou County, Tehama County, and Trinity County, **Map 3-18**, Socioeconomic Analysis Area, in **Appendix A**.

Issue Statements

- How would the alternatives affect opportunities and demand for public use of BLM lands considering population and development conditions?
- How would the alternatives affect recreation opportunities, wildfire management, special-status species recovery, and wilderness management goals, given changing demographics and land use patterns?

Affected Environment

Demographics and Economic Setting

The population, housing, jobs, income, and unemployment data in the following section are incorporated by reference from the NCIP Socioeconomic Baseline Report (BLM 2021e, pp. 2-2 to 2-9) and the AMS (BLM 2021a, pp. 2-245 to 2-254).

Population Trends and Forecast

Examining population trends provides valuable information on the impacts of social or economic changes in a community, such as a regional economic downturn or impacts from a natural disaster. The population density of the counties in the planning area (with a range of 4 to 134 people per square mile) relative to California (239 people per square mile) indicates the rural nature of the planning area (US Census Bureau 2018; Headwaters Economics Profile System 2019; BLM 2021a). **Table D-89** shows the population change between 2010 and 2019 and population projections for 2030 and 2040. Between 2010 and 2019, total population increased in Butte, Shasta, Humboldt, and Tehama Counties, while the other counties in the

Table D-89
Population Trends (2010-2040)

Geography	2010	2019	2010–2019 Percent Change	Projected Population in 2030	Projected Population in 2040	Projected 2019–2040 Percent Change
State and Planning Area Overall						
California	36,637,290	39,512,231	7.85	42,263,654	43,946,653	11.22
Planning Area Counties	765,523	775,768	1.34	788,327	803,342	3.55
Counties in the Planning Area						
Butte	218,635	225,817	3.28	239,784	260,890	15.53
Del Norte	28,471	27,495	-3.43	27,180	26,359	-4.13
Humboldt	133,058	135,940	2.17	128,690	122,964	-9.55
Mendocino	87,487	87,224	-0.30	88,009	86,759	-0.53
Shasta	176,906	179,212	1.30	180,103	182,059	1.59
Siskiyou	44,690	43,468	-2.73	42,924	41,290	-5.01
Tehama	62,575	63,912	2.14	68,681	70,558	10.40
Trinity	13,701	12,700	-7.31	12,956	12,463	-1.87

Sources: US Census Bureau 2019, California Department of Finance 2020, Headwaters Economics Profile System 2020.

planning area experienced a population decrease. Population projections from the California Department of Finance show that Butte, Shasta, and Tehama Counties will continue to see an increase in population growth through 2040, while the remaining counties in the planning area will experience a decrease. One reason for a decrease in population is likely due to post-wildfire migration. Recent wildfires in southern Oregon have had some influence on population dynamics and economic trends in northern California, such as influences on post-wildfire recovery efforts and migration between the states. For more a more detailed discussion of planning area population trends and forecasts, see the NCIP Socioeconomic Baseline Report (BLM 2021a, pp. 2-2 to 2-5).

Housing

The availability of housing units can be an indirect indicator of economic and social stability. The amount of overall availability and vacant rooms can also be an indicator of how well a community is responding to changes in resources and natural disasters, such as wildfires. The percentage of homes directly exposed to wildfire risks is relatively high in the planning area. The increasing likelihood (the probability of a wildfire starting and spreading) and intensity of wildfires in this area have resulted in housing shortages in the planning area. An increase in post fire out-migration particularly from WUIs, where most housing losses from wildfires occur, have exacerbated preexisting supply deficits in the planning area in more developed areas where population growth is occurring (BLM 2021e, pp. 2-6 to 2-8). **Table D-90** shows 2019 housing occupancy characteristics in the planning area, which are based on 5-year estimates. Vacancies due to seasonal, recreational, or occasional use can indicate the area's ability to attract retirees or others, in part due to amenities provided by public lands. Homes purchased for seasonal use may affect housing markets by exacerbating issues of limited availability, as has been seen in portions of the planning area. Vacancies for seasonal use in the planning area represent a larger share of vacancies than that of the state of California as a whole. In particular, these properties represent a substantial portion of properties in Mendocino (10.4 percent), Siskiyou (11.5 percent), and Trinity Counties (25.6 percent).

Table D-90
Housing Tenure and Occupancy Characteristics, 2019 (Based on 5-Year Estimates)

Geography	Total Housing Units	Percent Occupancy	Percent Vacant	Percent Vacant for Seasonal, Recreational, or Occasional Use
State and Planning area Overall				
California	14,084,824	92.1	7.9	2.8
Planning Area Counties	352,775	86.6	13.7	5.6
Counties in the Planning area				
Butte	98,743	87.9	12.1	2.5
Del Norte	11,373	86.2	13.8	4.8
Humboldt	62,826	86.4	13.6	5.4
Mendocino	40,909	83.3	16.7	10.4
Shasta	78,535	89.7	10.3	3.8
Siskiyou	24,102	79.9	20.1	11.5
Tehama	27,437	87.6	12.4	3.6
Trinity	8,850	65.5	34.5	25.6

Source: Headwaters Economics Profile System 2020

An important indicator of economic stability is housing affordability. In addition, housing costs above 30 percent of income can represent an economic burden. The median monthly mortgage for counties in the planning area was lower than the California median in all counties. Mendocino County had the highest median mortgage at \$1,851 and Siskiyou County had the lowest at \$1,315 (Headwater Economics Profile System 2020). As shown in **Table D-91**, renters in all planning area counties, with the exception of Del Norte County, had rental costs that represented more than 30 percent of income. Mendocino County had the highest percentage of owner-occupied households where more than 30 percent of the household income was spent on mortgage costs (48.4 percent), while Butte County had the lowest (34.9 percent).

Table D-91
Housing Costs as a Percentage of Household Income (2018)

Geography	Owner-occupied mortgaged homes	Mortgage Cost >30 Percent of household income	Renter-occupied units	Rent > 30 Percent of household income
California	5,022,699	38.70	5,880,000	52.60
Butte County	30,553	34.90	35,439	57.90
Del Norte County	3,122	36.70	3,684	46.40
Humboldt County	17,714	45.70	23,414	57.20
Mendocino County	10,919	48.40	13,917	51.90
Shasta County	27,341	37.40	25,752	53.50
Siskiyou County	6,256	39.00	6,624	49.80
Tehama County	9,944	43.70	8,450	51.10
Trinity County	1,723	44.50	1,928	55.90

Sources: Headwaters Economics Profile System 2020

Jobs and Income

According to 2018 employment data, service-related jobs were the predominant employment industry in the planning area. Within the service-related sector, health care and social assistance made up the highest percentage of jobs that had an average higher than the state average (11.2 percent), followed by retail

trade, for which all the counties had a higher percentage than the state average of 8.6 percent. In general, all the counties had a similar breakdown for estimated employment by industry; the exception was the percentage of jobs in government. Del Norte County had the most government jobs at 33.9 percent, while Mendocino County had the least at 14.0 percent. **Table D-92** shows the proportion of employment by industry in the planning area counties and California.

As discussed in more detail in the Socioeconomic Baseline Report (BLM 2021e, pp 2-19 and 2-20) the cannabis industry in the “Emerald Triangle” of Mendocino, Humboldt, and Trinity Counties is a large contributor to local economy. It is not clear whether jobs in the cannabis industry show up in regularly collected data.

As shown in **Table D-93**, 2018 per capita income and average earnings per job in the planning area counties were below the California averages (\$76,347 and \$88,670, respectively). Non-labor income in the planning area accounted for a higher percentage of total income in the planning area than in California (36.1 percent). Particularly, age- and hardship-related transfer payments were greater than in California in all the planning area counties. An aging population, a more mobile population, and an increasing homeless population (see **Section D.5.2**, Environmental Justice, for more detail) are some of the reasons behind the increase in non-labor income.

Unemployment

As shown in **Table D-94**, unemployment rates for each county in the planning area were, in general, slightly higher—or very close to—the state unemployment rate average between 2000 and 2020. Humboldt and Mendocino Counties had the lowest unemployment rates in the planning area after 2010, and Siskiyou, Tehama, and Del Norte Counties had the highest unemployment rates.

All counties had a large increase in unemployment in 2020 due to the COVID-19 pandemic. As previously discussed, all counties in the planning area relied on service-related jobs and government jobs, both of which were affected by the pandemic. Siskiyou County had the highest unemployment rate at 11.2 percent in 2020.

Table D-92
Employment by Industry (2018)

	Butte County	Del Norte County	Humboldt County	Mendocino County	Shasta County	Siskiyou County	Tehama County	Trinity County	Planning Area	California
Total Employment	116,908	11,068	74,294	50,181	92,944	21,486	26,339	4,681	397,901	24,218,195
Non-services related	14.7%	12.2%	14.1%	18.9%	12.4%	16.1%	24.6%	16.3%	15.3%	13.0%
Farm	3.0%	2.8%	1.8%	3.2%	1.9%	5.7%	28.4%	4.4%	3.1%	1.0%
Forestry, fishing, and related activities	1.4%	3.7%	1.8%	3.0%	1.1%	N/A	3.3%	N/A	1.7%	1.0%
Mining (including fossil fuels)	0.2%	0.4%	0.2%	0.2%	0.3%	N/A	0.1%	N/A	0.2%	0.2%
Construction	5.8%	3.4%	6.2%	6.3%	5.6%	5.3%	4.9%	6.2%	5.8%	5.0%
Manufacturing	4.5%	1.9%	4.0%	6.0%	3.5%	5.2%	7.9%	5.7%	4.6%	5.9%
Services related	70.5%	51.9%	68.3%	66.6%	73.0%	59.7%	57.4%	46.6%	67.9%	75.3%
Utilities	0.5%	N/A	0.4%	0.3%	0.5%	0.3%	0.4%	0.4%	0.4%	0.3%
Wholesale trade	2.0%	N/A	1.7%	2.1%	2.4%	1.4%	1.6%	0.7%	1.9%	3.3%
Retail trade	11.9%	10.3%	11.9%	11.9%	12.4%	10.5%	10.0%	10.9%	11.8%	8.6%
Transportation and warehousing	2.0%	1.5%	4.2%	2.0%	3.0%	2.5%	7.7%	1.7%	3.0%	5.2%
Information	1.0%	0.8%	0.8%	0.8%	0.9%	1.0%	0.5%	0.9%	0.9%	2.5%
Finance and insurance	3.5%	1.45%	2.5%	2.3%	3.8%	2.4%	2.0%	1.5%	3.0%	4.4%
Real estate, rentals, and leasing	4.0%	3.0%	3.8%	4.0%	3.8%	3.5%	2.8%	3.6%	3.8%	5.0%
Professional and technical services	4.5%	2.9%	5.2%	4.6%	5.3%	4.4%	2.5%	4.8%	4.7%	8.5%
Management of companies and enterprises	0.5%	0.1%	0.3%	0.4%	0.6%	0.3%	0.7%	0.0%	0.5%	1.2%
Administrative and waste services	4.2%	1.9%	4.4%	4.9%	6.7%	3.8%	3.6%	3.0%	4.8%	6.3%
Educational services	1.0%	0.8%	1.0%	1.0%	1.8%	0.8%	0.5%	0.6%	1.1%	2.2%
Health care and social assistance	18.4%	14.1%	14.2%	13.3%	16.5%	11.8%	12.3%	N/A	15.4%	11.2%
Arts, entertainment, and recreation	1.9%	1.3%	2.6%	2.8%	2.1%	2.3%	1.2%	2.4%	2.1%	2.8%
Accommodation and food services	7.7%	8.8%	8.1%	9.8%	7.0%	8.5%	6.0%	9.0%	7.8%	7.5%

D. Affected Environment and Environmental Consequences (Social and Economic Conditions)

	Butte County	Del Norte County	Humboldt County	Mendocino County	Shasta County	Siskiyou County	Tehama County	Trinity County	Planning Area	California
Other services, except public administration	7.3%	4.8%	7.0%	6.3%	6.4%	6.2%	5.6%	6.9%	6.7%	5.9%
Government	14.7%	33.9%	19.5%	14.0%	14.4%	20.3%	16.0%	22.9%	16.5%	11.6%

Source: Headwaters Economics Profile System 2020

Table D-93
Employment by Industry – 2018 (2022 dollars)

	Butte County	Del Norte County	Humboldt County	Mendocino County	Shasta County	Siskiyou County	Tehama County	Trinity County	Planning area	California
Employment (full- and part- time jobs)	116,908	11,068	74,294	50,181	92,044	21,486	26,339	4,681	397,901	24,218,195
Average earnings per job	\$61,487	\$63,071	\$64,898	\$58,023	\$61,801	\$54,478	\$62,869	\$56,161	\$61,454	\$88,670
Per capita income	\$53,271	\$44,768	\$58,547	\$60,243	\$55,956	\$53,393	\$51,033	\$48,818	\$55,079	\$76,347
Total personal income (\$1,000)	\$12,319,168	\$1,245,811	\$7,984,190	\$5,277,582	\$10,074,264	\$2,366,924	\$3,261,815	\$611,937	\$43,141,692	\$3,067,272,654
Labor earnings	\$6,536,721	\$583,311	\$4,358,401	\$2,591,469	\$5,134,264	\$987,536	\$1,650,960	\$231,563	\$22,074,223	\$1,927,242,211
Non-labor income	\$5,782,447	\$662,500	\$3,625,791	\$2,686,113	\$4,940,000	\$1,379,388	\$1,610,855	\$380,374	\$21,067,469	\$1,092,830,443
	45.7%	54.2%	46.3%	50.4%	49.0%	56.3%	48.9%	62.8%	48.5%	36.1%
Dividends, interest, and rent	\$2,643,866	\$243,743	\$1,815,501	\$1,321,410	\$20,457,633	\$613,109	\$758,040	\$165,877	\$9,611,179	\$677,026,623
	20.6%	19.1%	22.2%	23.8%	19.6%	23.8%	21.7%	27.4%	21.4%	21.9%
Age-related transfer payments	\$1,617,595	\$197,438	\$908,371	\$740,520	\$1,583,958	\$408,305	\$491,256	\$113,759	\$6,061,201	\$218,926,326
	13.1%	15.6%	11.4%	13.7%	15.4%	16.5%	14.8%	18.1%	13.9%	7.0%
Hardship-related transfer payments	\$1,028,505	\$189,844	\$709,788	\$523,804	\$1,013,126	\$290,772	\$296,313	\$83,157	\$4,135,309	\$150,123,722
	8.8%	15.9%	9.6%	10.3%	10.5%	12.3%	9.6%	14.0%	10.1%	5.2%
Other transfer payments	\$398,026	\$44,528	\$242,361	\$140,814	\$362,675	\$88,966	\$96,365	\$21,695	\$1,395,431	\$58,382,649
	3.5%	3.2%	3.1%	2.6%	3.5%	3.6%	2.9%	3.4%	3.2%	1.9%

Source: Headwaters Economics Profile System 2020

Note: Other government transfers include veteran's benefits, education and training assistance, and workers compensation

Table D-94
Average Annual Percent Unemployment (2000–2020)

Geography	2000	2005	2010	2015	2016	2017	2018	2019	2020
California	4.9	5.5	12.2	6.3	5.4	4.8	4.3	4.0	10.9
Butte County	6.2	6.9	13.9	7.4	6.6	5.8	5.0	5.1	10.0
Del Norte County	7.4	7.3	13.2	8.5	7.5	10.5	5.8	5.7	10.5
Humboldt County	5.8	6.2	10.6	5.8	4.9	4.2	3.6	3.6	8.7
Mendocino County	5.6	5.6	11.6	7.5	5.3	4.5	4.0	4.0	9.5
Shasta County	6.1	7.5	16.8	8.0	7.0	5.8	4.6	4.7	9.6
Siskiyou County	7.5	9.6	16.8	9.9	8.5	7.3	6.8	6.5	11.2
Tehama County	6.5	7.0	15.4	8.0	7.1	6.4	5.8	5.5	9.9
Trinity County	9.8	11.2	17.0	8.0	7.1	6.2	5.8	5.5	9.0

Sources: US Bureau of Labor Statistics 2020

BLM-Administered Lands and Resource Use and Revenue

The BLM provides value to surrounding communities and economies through the uses and resources it supplies and the services it supports. The following section describes how these resources contribute to the local and regional economies by providing direct financial contributions, employment, and increased economic output, or non-market values, through services like increased water quality and reduced wildfire damage.

The amount of federal land in the planning area varies by county, with 13.3 percent in Mendocino County and 75.8 percent in Trinity County. Overall, about 42 percent of the land throughout the planning area is federal land. Only 3.4 percent of the federal land in the planning area is managed by the BLM, which is lower than the state average of 14.9 percent of federal land. Most of the federal lands within the planning area are managed by the Forest Service (Headwaters Economics Profile System 2019).

Local governments are not able to receive property tax revenue from lands owned by federal agencies, so the government implemented payments in lieu of taxes (PILT), which are federal payments to local governments, to offset this loss in property tax revenue. Payments in lieu of taxes are calculated based on the amount of federal land that is located in the county. In 2020, the planning area counties received about \$8.1 million in PILT for over 6.9 million acres of federal lands. Only 8.4 percent of those lands were BLM-administered lands, largely due to the low percentage of BLM-administered lands in the planning area. **Table D-95** shows the total PILT, acres of federal lands associated with the PILT, acres of BLM-administered lands associated with the PILT, and percentage of BLM-administered lands.

Table D-95
Planning Area PILT (Fiscal Year 2020)

County	Total PILT	Total Entitlement Acres (all qualifying federal lands)	BLM-Administered Acreage	BLM-Administered Acreage as a Percentage of Total Acreage
Butte	\$280,326	155,551	16,832	10.8
Del Norte	\$787,821	447,574	195	0.0
Humboldt	\$1,006,344	496,184	86,188	17.4
Mendocino	\$730,567	304,671	122,596	40.2

County	Total PILT	Total Entitlement Acres (all qualifying federal lands)	BLM-Administered Acreage	BLM-Administered Acreage as a Percentage of Total Acreage
Shasta	\$2,033,573	986,089	142,938	14.5
Siskiyou	\$1,833,109	2,502,300	85,069	3.4
Tehama	\$825,130	445,515	48,593	10.9
Trinity	\$625,681	1,565,394	74,669	4.8
Total for Planning Area	\$8,122,551	6,903,278	577,080	8.4

Source: DOI 2020

Livestock Grazing

The BLM allows local farmers and ranchers to use the land for livestock grazing in exchange for a fee. There are about 46,200 acres of land that are currently being used for grazing allotments, with almost 22,000 acres in the Arcata FO and over 24,000 acres in the Redding FO.

There are currently 24 active livestock grazing allotments within the planning area (see **Table D-80, Section D.3.8**, Livestock Grazing). The majority of active allotments are in the Redding FO. The active allotments range from 5 to 9,100 acres, and their grazing allocations range from 10 to 1,330 AUMs (the amount of forage needed to sustain one cow and her calf, five sheep, or five goats for one month). **Table D-96** shows livestock inventory and AUMs for the planning area. Total BLM-administered AUMs for the planning area equal 4,978 AUMs, with 963 AUMs in the Arcata FO and 4,015 AUMs in the Redding FO (BLM 2021a). Only 0.1 percent of the total AUMs in the planning area are administered by the BLM.

Table D-96
Livestock Inventory and AUMs

Geography	Total Cow Inventory	Total Sheep Inventory	Total Estimated AUMs	Total AUMs supported by BLM Forage	Total AUMs supported by BLM Forage as a Percent of Total AUMs
State and Planning Area Overall					
State of California	5,185,593	475,291	63,367,814	N/A	N/A
Planning Area Counties	275,221	26,627	3,366,557	4,978	0.1

Source: BLM 2021a

Grazing receipts that the BLM receives for use of the land are distributed to the state and the BLM's range improvement fund as required by federal law and BLM regulations for Taylor Grazing Act Section 15. According to BLM Rangeland Administration System data, with a billed usage of 4,978 AUMs and a \$1.35 per AUM federal grazing fee, total contribution of grazing to each of the counties in the planning area ranged from \$840 to \$3,360 (see **Section D.3.8**, Livestock Grazing).

Minerals

There have been neither leases nor applications for oil and gas leases on BLM-administered lands or federal mineral estate in the planning area, nor have any been applied for in over 20 years (BLM 2021e). As a result, there are no social and economic contributions from leasable minerals on BLM-administered lands.

Most of the locatable mineral development within the planning area consists of casual use in the form of gold panning or metal detecting (as defined in 43 CFR 3809). Casual use mining has very little to no permanent impact on the land. There has, however, been an uptake in damage to historic resources by metal detectorists directly or indirectly searching for minerals. There are currently several active gold mining operations in the Redding FO.

There have been no recent sales of mineral materials in either the Redding or Arcata FOs. Mineral materials include sand, gravel, clays, fill material, broken rock, and building stone. The BLM provides mineral materials free of charge to state, county, and federal agencies for use in public projects under an FUP. There is currently one FUP in the Arcata FO and seven FUPs within the Redding FO. These FUPs are the only current mineral materials development within the planning area.

See **Section D.3.5**, for more information on current mineral use on BLM-administered lands.

Forest Products and Ecological Restoration

The BLM's contributions to the forest products industry are minimal. The average annual amount of timber harvested from county, municipal, and BLM-administered lands in the planning area over the past 5 years was approximately 1,058 MBF per year, representing an average of 0.1 percent of the overall timber harvest in the planning area (UMBBER 2023). The majority of contributions to the state come from private entities or the Forest Service (BBER 2016).

Special forest products (SFPs), which include non-timber vegetative material such as mushrooms, seeds, berries, greenery, and fuelwood, are harvested on BLM-administered lands for recreation, personal use, and income. In the Arcata FO, there were a total of 35 permits for SFPs in 2020, resulting in \$870 received. In the Redding FO there were 27 permits, which resulted in \$13,295 received in 2020.

Ecological restoration projects occur periodically on BLM-administered lands in the planning area. Ecological restoration in general has become an important industry generating \$10 billion annually in U.S. output and 126,000 jobs (BenDor et al. 2015). Case studies in the northwest have shown that forest and watershed restoration support approximately 16 jobs per million dollars of investment (Nielsen-Pincus and Moseley 2013).

Recreation

Recreation and tourism are important parts of northern California's economy. Employment and economic output from the recreation-related and tourism industries help support local area economies, and many of those recreation-related activities occur on the roughly 396,000 acres of BLM-administered lands within the planning area. In 2015, more than 1,049,000 people used lands managed by the Arcata and Redding FOs for nonmotorized recreation, contributing \$41.2 million to the local economy (The Pew Charitable Trusts 2017).

Some of the areas within the Arcata FO that have seen high and increasing numbers of visitors are the Samoa Peninsula SRMA (about 200,000 visits annually), Lacks Creek Management Area (about 6,500 visits annually), and Red Mountain Management Area (about 20,000 visits annually). In the Redding FO, the Trinity Management Area receives about 100,000 visits annually (BLM 2021e).

Data on spending associated with recreational visits to BLM-administered lands are not currently available. However, the National Visitor Use Monitoring Program data from 2019 indicates that area visitors spent

an average of \$1,026 per party per trip to Forest Service lands in the Pacific Southwest Region (Forest Service 2019). Spending includes lodging, transportation, food, and supplies, and recreational spending supports jobs and income in local industries including but not limited to accommodations and food service, as well as the arts, entertainment, and recreation industries.

Non-Market Contributions

The values of many goods and services that BLM-administered lands provide can be measured through market mechanisms, such as the fees that the BLM charges for its uses and services. There are some goods and services, however, that provide value to society but are not accounted for through markets; these are often called non-market values. Non-market values include use and non-use values. Use values of a non-market good is the value to society from the direct use of the asset (for example, through recreation, such as hiking on a trail) or indirect use (for example, downstream communities receiving watershed protection). Indirect uses typically reflect non-market values, though they might be related to market decisions. Non-use, or passive use, of a non-market good is the value to society of preserving the resource—either for potential future use, for future generations to use, or for the knowledge that the resource exists. This can include preservation of plant and animal habitats that are not currently providing economic benefits.

One good or service might provide many types of values to society. For example, recreation through camping has a market mechanism to measure some of the value (the fee for the camping permit), but there is also an additional non-market value that society receives from camping, such as the use value of viewing the surrounding scenery and non-use value of preserving the area for future generations of visitors. This additional value, on top of the value measured by market mechanisms, is called “consumer surplus.” Consumer surplus occurs when the price consumers pay for a good or service (that is, the fee for camping) is less than what the consumer would be willing to pay for the good or service.

Across the planning area, the key non-market values that BLM-administered lands provide are hazardous fuels management, recreation, and land and resource protection and conservation for future generations. Other non-market values identified by stakeholders include education and research, wilderness, and the spiritual benefits associated with enjoying nature (BLM 2021e).

Active and passive forms of fuels management on BLM-administered lands, which move forests towards historical wildland fire regimes, can assist with minimizing the risk of uncharacteristic wildfires for local communities. Uncharacteristic wildfire (that is, high-intensity, large wildfires) can affect non-market values through impacts on forest ecosystems, safety of the residents in the surrounding areas, potential for property damage, health impacts from smoke, impacts on scenery and quality of life, potential damage to unique and sensitive cultural resources, and decreased outdoor recreational opportunities on public lands. Wildfire frequency and intensity, suppression costs, and damages are expected to increase due to climate change, so continued fuel management will become an increasingly important non-market value.

Recreation provides a variety of non-market benefits to the community, including but not limited to improved health, reduced potential health costs, stress reduction. **Table D-97** shows estimated average consumer surplus values for recreational use by primary activity in the Forest Service Pacific Southwest Region. The activities with the highest consumer surplus are nonmotorized boating, biking, and hiking.

Table D-97
Estimates of the Economic Value of Recreation-related Benefits (use value) by Primary Activity for the Forest Service Pacific Southwest Region (per person per primary activity day)

Primary Activity	Average Consumer Surplus for the Pacific Southwest Region
Backpacking	\$26.64
Biking	\$80.23
Cross-country skiing	\$50.01
Developed camping	\$29.11
Downhill skiing	\$75.72
Fishing	\$65.01
Hiking	\$77.95
Hunting	\$70.90
Motorized boating	\$51.87
Nature related	\$53.62
Nonmotorized boating	\$102.42
Off-highway vehicle use/snowmobiling	\$43.94
Other recreation	\$58.49
Picnicking	\$42.67
Weighted average	\$63.19

Source: Rosenberger et al. 2017

Preserving and maintaining the natural environment for future generations is an important non-market value for many types of stakeholders, including those who value conservation, recreation, cultural or Tribal resources (BLM 2021e).

Environmental Consequence

BLM-administered lands and resources provide many benefits and contributions to the surrounding communities. The importance of BLM-administered lands and resources is shown by the value of these benefits and contributions and the reliance of some community members on these resources. For example, some community members rely on the BLM for jobs and income, others find value in the land through their cultural or Tribal uses and experiences. Still others gain value through the services the BLM provides, like vegetation treatments that reduce/modify hazardous fuel loading and help protect their nearby properties. These values and contributions are discussed below.

Social and economic contributions from BLM-administered lands and resources and support of local economies: Economic contributions are measured in terms of level of use of BLM-administered land and resources. Changes from baseline levels of economic contribution are based on quantified level of change in resources in GIS acres. For resources where no quantified data are available, impacts are discussed qualitatively.

A qualitative discussion is provided for management actions supporting communities with ties to BLM-administered land resources, including consideration of the level of coordination with communities, consistency with existing plans, level of monitoring and coordination efforts, access to lands and resources supported, and contribution to local jobs and income for local residents.

Impacts Common to All Alternatives

Under all alternatives, the BLM would continue to work with local non-profit volunteer groups, non-governmental organizations, and Tribes to manage vegetation, maintain trails, construct and maintain facilities, and conduct monitoring. The BLM would also provide opportunities for local communities, through planning and implementation of restoration activities, to meet other resource requirements and provide road associations and access through road maintenance for commercial uses and landowners using BLM-administered lands. Management actions would affect local communities and visitors by improving quality of life through recreational opportunities, reducing the risk to human health and property from wildfires, and alleviating impacts from climate change such as changes in weather patterns and droughts.

The BLM contributes to jobs and income for local communities by directly employing residents and indirectly supporting industries that depend on BLM-administered lands for resources. Industries that rely on resources from BLM-administered lands include, but are not limited to, forestry, fishing, and related activities; small-scale mining; agriculture, specifically livestock grazing; renewable energy (from biomass); and recreation.

Economic Contributions from BLM Resources and Resources Uses

Under all alternatives, habitat enhancement and vegetation management projects would be allowed in riparian zones only where they can protect and enhance river values. Timber harvest in VSR corridors, WSAs and wilderness, and late successional forests would only be allowed for restoration and habitat protection. Timber harvesting is allowed in other areas, such as ERMA and SRMA, under all alternatives, as long as the harvesting does not impact recreation or recreation setting. Impacts on economic contributions would be limited overall, given the minimal level of contributions from commercial timber harvest. However, ecological restoration projects may support local employment and income associated with the forestry sector.

Under all alternatives, recreators would continue to visit the area for recreation under either an SRMA or ERMA designation that would continue to provide local communities with employment, labor income, and economic output in recreational and tourism-related industries. Under all alternatives, OHV use would be allowed in 84 percent of the decision area, limited to existing and designated routes. However, under all alternatives recreation associated with OHV travel would be fully open to recreators in the Samoa Dunes area, and the amount of acres that would be limited and closed do not change materially across alternatives. The changes to economic contribution associated with changes in acres limited or closed to OHV uses would be limited. Recreational use of OHVs will continue to be an economic driver in the planning area. Under all alternatives, WSAs and designated wilderness would be 58,490 acres. Within these areas, recreators could find quiet and potentially high-quality recreational opportunities, which could contribute to visitation to the area and result in economic contributions from recreation and tourism-related industries.

Under all alternatives, it is anticipated that there would be minimal changes to locatable mining compared with current use, and the economic contributions to the local communities would not change. Most of the lands within the planning area would stay open to mineral materials development. The areas that would be closed to minerals development include designated VSRs, wilderness, and Section 603 WSAs. The acres closed to mineral materials development would depend on the acres associated with each of these protected areas under each alternative. Mineral materials development falls under FUPs, which may

have exception for closures in restoration areas. Under all action alternatives, the impact on mineral materials development will be minimal, meaning that the economic contributions from mineral materials would be similar across all alternatives and the levels of use for minerals materials would not change materially from current use.

Contribution to Non-market Values

Protected and undeveloped lands provide values to society through non-market values. Non-market values cannot be measured by economic contributions that occur through market mechanisms, like payments or fees, so the following discussion describes non-market values that occur due to protected lands and the amount of land as a way of illustrating the value of the lands in the planning area. The exact level of contributions and value from non-market values can vary based on a number of factors including visitor group demographics and preferences of visitors to the region.

Under all Alternatives 58,490 acres of WSA and wilderness would provide non-market use values such as benefits from viewing and recreating in nature. The non-use values that these lands contribute include values that people place on conserving areas for future generations and supporting quality of life for area residents including but not limited to mental and physical health associated with recreation opportunities.

Alternative A

Table B-1 in **Appendix B** identifies the acres available for each resource under each alternative. The differences in acres are discussed and related to how the change in acres might affect the economic contributions of the resource.

The economic contributions for the current use were calculated using the Impact Analysis for Planning Model (IMPLAN), an input-output model that measures the indirect and induced impacts from a one-time direct change to the economy (BLM 2021f). The outputs calculated from IMPLAN include gross regional economic output, employment, or labor income. Direct impacts are changes to gross regional economic output, employment, and labor income from changes in activities on BLM-administered lands (for example, changes in expenditures of accommodations and food by recreational visitors). Indirect impacts are changes to the industries that support the directly affected industries (for example, changes in expenditures of supplies made by accommodations and food businesses). Induced impacts are changes to purchases made by employees of the directly affected industries due to higher income. Together, these impacts make up the total economic impact on the local economy. The data used in the modeling are from each FO, and the modeling was done as part of an annual report on economic contributions at the FO level.

The following discussion, under Alternative A, describes the current economic contributions to the local economy based on current levels of use. Any changes in future use would result in contributions that differ from what is discussed here.

Economic Contributions from BLM Resources and Resources Uses

The current economic contribution of the three key resource areas to the FOs—recreation, livestock grazing, and timber—are shown in **Table D-98** and **Table D-99** for the Arcata FO and the Redding FO, respectively.

Table D-98
Economic Contributions to the State Economy by Resource in the Arcata Field Office
(2021)

Resource Group	Direct Jobs	Total Jobs	Direct Labor Income (\$000)	Total Labor Income (\$000)	Direct Output (\$000)	Total Output (\$000)
Recreation	474	705	\$21,200	\$37,000	\$55,700	\$102,400
Grazing	1	2	\$9.3	\$53.4	\$67.1	\$194.0
Timber	0	0	\$1.6	\$3.5	\$5.4	\$10.7
Total	475	706	\$21,210	\$37,056	\$55,772	\$102,604

Source: BLM 2021f

Table D-99
Economic Contributions to the State Economy by Resource in the Redding Field Office
(2021)

Resource Group	Direct Jobs	Total Jobs	Direct Labor Income (\$000)	Total Labor Income (\$000)	Direct Output (\$000)	Total Output (\$000)
Recreation	402	598	\$18.0 M	\$31.4 M	\$47.4 M	\$87.0 M
Grazing	3	6	\$35.6 K	\$205.0 K	\$257.9 K	\$745.4 K
Timber	14	31	\$829.0 K	\$1.8 M	\$2.8 M	\$5.5 M
Total	420	636	\$18.9 M	\$33.5 M	\$50.4 M	\$93.3 M

Source: BLM 2021g

Under Alternative A, the acreage available for grazing would continue to be 186,900 acres. This would result in economic contributions associated with two grazing-related jobs, or \$53,400 in total labor income and \$194,000 in total output in the Arcata FO and six grazing-related jobs, or \$205,000 in total labor income and \$745,400 in total output in the Redding FO (see **Table D-98** and **Table D-99**).

Under Alternative A, timber harvest does not make up a large part of the economic contribution in the Arcata FO; it only contributes to about \$10,700 total output. However, timber harvest makes up a bigger part of the economy in the Redding FO—it contributes to about 31 total jobs, or \$1.8 million in total labor income and \$5.5 million in total output. It should be noted that this contribution analysis does not capture contributions from ecological restoration, which is of growing importance in the planning area.

Under Alternative A, recreation is the biggest resource in both the Arcata FO and the Redding FO. Recreation supports 474 and 402 direct jobs and over \$100 million and \$80 million in total output in the Arcata FO and the Redding FO, respectively. Recreation would be emphasized in 40,190 acres of SRMAs. Areas in the wild and scenic corridor associated with 253.8 miles of wild and scenic rivers and within the 54,600 acres of ACECs would continue to provide quiet and potentially enhanced recreational opportunities for those recreators who seek recreation in wild and remote areas.

Under Alternative A, 61,300 acres would be closed to mineral leasing. However, there have been no mineral leasing applications in the planning area over the past 20 years, so there are no economic contributions associated with mineral leasing on BLM-administered lands.

Under Alternative A, the areas identified for disposal would be 101,000 acres. When these acres are removed from federal lands, the amount of PILT the counties receive will decrease. The current amount of PILT that the counties in the planning area receive is \$8,122,551 and the amount of BLM-administered land associated with the PILT is 577,080 acres. If BLM-administered lands decreased by 101,000 acres, that would be a reduction of about 18 percent of the land and associated contributions. It should be noted that based on past trends in land disposal, it is likely that only a portion of the identified amount of land would be disposed of; therefore, the implications for PILT at implementation would likely be more limited.

Contribution to Non-market Values

Under Alternative A, there would not be any land managed for wilderness characteristics or as Section 202 wilderness study areas, while the lands designated as ACECs would continue to be 54,600 acres. The miles of stream within WSR corridors would continue to be 253.8 miles. The non-market use values such as benefits from viewing and recreating in nature that support quality of life for area residents would continue within the designated protected areas.

Alternative B

Economic Contributions from BLM-administered Lands and Resources

Under Alternative B the acres available for livestock grazing would be about 232,800 acres, which is about 45,900 more acres (or 25 percent) than under Alternative A. As a result, under Alternative B, the economic contributions associated with grazing may increase compared with Alternative A. However, actual level of contributions would be dependent on the change in the level of authorized grazing AUMs, which may be limited due to the low number of suitable acres.

As discussed in **Section D.3.1**, Forestry, Alternative B, would result in less restriction on forestry activities and increased timber and SFP harvest when compared with Alternative A. Overall, however, impacts on economic contributions would be limited, given the low level of contributions from this resource use.

Under Alternative B, there would be an increase in recreational opportunities for most types of recreation (see **Section D.3.6**, Recreation and Visitor Services). There would be about 16,390 fewer acres of SRMAs designated under Alternative B than Alternative A (41 percent decrease); however, there would be about 21,790 more acres designated as ERMAs under Alternative B than Alternative A. This would be a total increase of over 4,900 acres of SRMAs and ERMAs (which is about a 12 percent increase). The increase in developed recreational opportunities may increase the recreation-related economic contribution in both the Arcata and Redding FOs. Opportunities for motorized recreation would be present under all alternatives. However, under Alternative B, 14,400 acres would be moved from OHV limited use to OHV closed use, which would decrease the recreational opportunities for OHV users compared with Alternative A. This could result in a reduction in economic contributions associated with motorized recreation; however, economic impacts would likely be minimal due to retention of OHV managed areas.

Under Alternative B, there would be 88,820 acres of ACECs (63 percent more than under Alternative A), 12,090 acres of Section 202 wilderness study areas, and 21,970 acres of lands with wilderness characteristics managed to protect wilderness characteristics as a priority over other multiple uses. Increasing ACECs and lands with wilderness characteristics would enhance the recreational experience for some recreators, particularly those interested in quiet recreational experiences, by preserving wildlife and improving visual resources and scenery. Compared with Alternative A, retaining more land under

Alternative B could maintain access to public lands and potentially high-quality recreational opportunities to recreators, which could increase visitation to the area and the resulting economic contributions from recreation and tourism-related industries.

Wildland fire management, under Alternative B, would temporarily limit recreational opportunities through trail closures; however, the long-term impacts from wildland fire management under Alternative B would be increased scenic views and recreational safety, which could increase visits to the area and increase economic contributions over time. Similarly, under Alternative B, riparian management area management would limit access to recreational opportunities in the short term, which may decrease recreation-related visits. However, riparian management area management would increase habitat quality and improve scenery over time, which would benefit recreation.

Under Alternative B, areas that would be closed to mineral materials development would cover additional special designation areas including Section 202 WSAs, SRMAs, ERMA, suitable WSR segments, BLM-administered lands in the Coastal Strip, the California National Historic Trail on BLM-administered lands, lands with Wilderness Characteristics managed as a priority, and most ACECs. Under Alternative B, areas that would be closed to mineral materials development would cover an area that would be 2.5 larger than under Alternative A. However, as discussed under *Impacts Common to All Alternatives*, mineral materials development falls under FUPs, which may have exception for closures in restoration areas. Consequently, the levels of use for minerals materials would not change materially from current use and the impact on mineral materials development would be minimal. Therefore, the economic contributions from mineral materials would be the same as Alternative A.

Under Alternative B, the areas identified for disposal would be 6,000 acres, which is about 95,000 fewer acres than under Alternative A (or 94 percent less). This could result in a higher level of retained lands and PILT contributions compared with Alternative A over the planning period.

Contribution to Non-market Values

Under Alternative B, the land managed for wilderness characteristics would be 21,970 acres (an increase from zero under Alternative A). In addition, land designated as ACECs would be 88,820 acres (63 percent increase over Alternative A). This suggests that the non-market values to society associated with conserved and non-developed land would be increased under Alternative B, compared with Alternative A. The miles of WSR corridors would be 253.7 miles.

Under Alternative B, contributions to quality of life associated with preservation and maintenance of culturally important resources, intact natural landscapes, and reduction or prevention of wildfire impacts would increase compared with Alternative A. Contributions to quality of life from developed recreation activities in SRMAs and ERMA would continue to be supported and may decrease due to the decrease in acres of these designated areas. Decreased recreation can improve gateway communities' quality of life (e.g., from reduced traffic). To the extent that decreasing acres of SRMAs and ERMA would result in decreased recreation, Alternative B could improve the quality of life for some residents.

Alternative C

Economic Contributions from BLM-administered Lands and Resources

Under Alternative C, the acreage available for livestock grazing would be about 271,800 acres, which would leave the total number of acres that will be closed to grazing at about 110,400 acres—the smallest

acreage closed to grazing out of all the alternatives. The acreage available to grazing, under Alternative C, is about 84,900 more acres than under Alternative A (or 45 percent more than under Alternative A). This means that under Alternative C, the economic contributions associated with grazing would increase compared with Alternative A. As noted under Alternative B, actual impacts on economic contributions would be based on the level of authorized grazing, which may have only slight changes from Alternative A.

Compared with Alternative A, Alternative C would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the planning area (see **Section D.3.1, Forestry**). This may result in increased economic contributions; however, overall contributions from the forestry sector to the regional economy from BLM-administered lands would likely remain low.

Alternative C would include management for 41,790 acres of SRMAs and 46,480 acres of ERMAs, which would be an increase in recreation management of about 2.18 times the acres under Alternative A, in total. This would support the potential for increased recreational use and associated economic contributions, particularly for those interested in developed recreational experiences. Under Alternative C, 400 acres would be moved from OHV closed to OHV limited, so there would be a greater amount of acreage available to OHV travel compared with Alternative A, this could increase the opportunities and economic contributions associated with motorized recreational experiences.

Under Alternative C, there would be 12,170 fewer acres (22 percent reduction) designated as ACEC than under Alternative A. The total acres of ACECs would be 42,430 acres. Areas with lands with wilderness characteristics managed to protect wilderness characteristics as priority over other multiple uses would be higher than Alternative A (5,841 acres as compared with zero acres). The length of streams managed as VSRs would decrease from 253.8 miles to 66.2 miles. There would not be any Section 202 wilderness study areas. Overall, this would decrease the recreational opportunities associated with quiet, non-developed recreational experiences compared with Alternative A.

Under Alternative C, the same protected areas would be closed to mineral materials development as under Alternative B. The acres closed to mineral materials development depends on the acres associated with each of the protected areas, therefore the areas closed to mineral materials development would be 2.1 times larger than Alternative A. However, similar to Alternative B, the levels of use for minerals materials would not change materially from current use and the impact on mineral materials development would be minimal. Therefore, the economic contributions from mineral materials would be the same as Alternative A.

Compared with Alternative A, retaining more land under Alternative C could maintain access to public lands and potentially high-quality recreational opportunities for recreators, which could increase visitors to the area. The impacts of the acquisitions would be the same as under Alternative B.

Under Alternative C, the areas identified for disposal would be 49,400 acres, which is about 51,600 fewer acres than under Alternative A (or 51 percent less). This could result the retention of more lands and PILT as compared with Alternative A over the planning period. However, as noted under Alternative B, actual lands disposed would likely be less than total lands identified for disposal, thereby limiting the changes to PILT.

Contribution to Non-market Values

Under Alternative C, land designated as ACECs would be reduced by 22 percent, miles of WSRs would be reduced by 74 percent, compared with Alternative A. Areas with wilderness characteristics that would be managed to protect their wilderness characteristics as a priority over other multiple uses would be 5,840 acres, which is an increase from zero under Alternative A; however these areas would still allow for multiple uses. This suggests that the non-market values to society associated with conserved and non-developed land—because they are associated with ACECs and wild and scenic river corridors to a greater degree than lands with wilderness characteristics, would be less under Alternative C, compared with Alternative A.

Under Alternative C, quality of life associated with preservation and maintenance of culturally important resources, intact natural landscapes, and reduction or prevention of wildfire impacts would increase compared with Alternative A. Contributions to quality of life from developed recreation activities in SRMAs and ERMAAs would continue to be supported and may increase due to the increase in acres of these designated areas. Conversely, increased recreation can also adversely impact gateway communities' quality of life (e.g., from increased traffic). To the extent that increasing acres of SRMAs and ERMAAs would result in increased recreation, Alternative C could result in reduced quality of life for some residents.

Alternative D

Under Alternative D, the acreage available for livestock grazing would be 188,600 acres, which would be 1,700 more acres (or 1 percent) than under Alternative A. The economic contributions associated with grazing may increase compared with Alternative A. However, actual level of contributions would be dependent on the change in the level of authorized grazing AUMs, which would be impacted from the lower number of suitable acres.

Compared with Alternative A, Alternative D would result in an increased pace and scale of forest restoration management activities including but not limited to, increased harvest of timber and SFPs, and more resilient forests throughout the planning area. Overall, however, economic contributions from the forestry sector under Alternative D would remain low.

Alternative D would include management for 41,190 acres of SRMAs and 45,880 acres of ERMAAs, which would be an increase in recreation management of about 1.2 times the total acres designated under Alternative A. This would support the potential for increased recreational use and associated economic contributions, particularly from visitors interested in developed recreational experiences. The impacts of limiting OHV by an additional 2,300 acres would be the similar to impacts under Alternative B, as they would reduce access to recreational opportunities for OHV users with minimal impacts.

Under Alternative D, there would be 87,890 acres of designated ACECs (an increase of 33,290 acres or 61 percent, compared with Alternative A) and 540 acres of Section 202 wilderness study areas (increased from zero under Alternative A). The length WSRs would decrease from 253.8 miles to 199.2 miles. Areas with lands with wilderness characteristics managed to protect wilderness characteristics as priority over other multiple uses would increase from zero under Alternative A, to 11,570 acres. The increase in acres of ACECs is largely accounted for by the decrease in acres within the WSR corridor. Overall, there would not be a measurable difference between Alternatives A and D in terms of the economic contribution from recreation within special designation areas.

Impacts from land tenure and riparian management area management would be the same as under Alternative B and may result in a short-term decrease in recreation in areas with limited access.

Under Alternative D, the same protected areas would be closed to mineral materials development as under Alternative B which would be an area 2.6 times larger than under Alternative A. However, similar to Alternative B, the levels of use for minerals materials would not change materially from current use and the impact on mineral materials development would be minimal. Therefore, the economic contributions from mineral materials would be the same as Alternative A.

Under Alternative D the areas identified for disposal would be 5,900 acres, which is about 95,100 fewer acres (or 94 percent less) than under Alternative A. Compared with the total amount of BLM-administered land associated with the 577,080 PILT acres, a reduction in acres identified for disposal under Alternative D would be a decrease in land of about 1 percent. This would result in a reduction of PILT to the counties in the planning area compared with current PILT, but it would result in more PILT to counties compared with under Alternative A. Actual economic impacts would be limited to the acres disposed, which has historically been less than the total amount of land initially identified.

Contribution to Non-market Values

Under Alternative D, the increase in acres of lands with wilderness characteristics and ACECs suggests that the non-market values to society associated with conserved and non-developed land would be greater under Alternative D in those areas, when compared with Alternative A. However, the miles of stream within WSR corridors would decrease by 54.5 miles compared with Alternative A and the non-market values associated with non-developed lands could decrease along the portions of the streams that would no longer be protected.

Under Alternative D, quality of life associated with preservation and maintenance of culturally important resources, intact natural landscapes, and reduction or prevention of wildfire impacts would increase compared with Alternative A. Contributions to quality of life associated with more developed recreation activities in SRMAs and ERMAs would continue to be supported under Alternative D and would likely increase due to the increased acres in these areas under this alternative. Conversely, increased recreation can also adversely impact gateway communities' quality of life (e.g., from increased traffic). To the extent that increasing acres of SRMAs and ERMAs would result in increased recreation, Alternative D could reduce quality of life for some residents.

Cumulative Impacts

The population within the planning area is expected to continue according to the trends and projections discussed in the Affected Environment. This includes an out-migration from WUIs, which can exasperate the population growth elsewhere in the planning area. Additionally, wildfires in southern Oregon have had some influence on population dynamics and economic trends in northern California, such as influences on post fire recovery efforts and migration between the states.

There are no known future, foreseeable developments that would impact livestock grazing, so there would be no livestock grazing-related cumulative impacts on socioeconomic conditions at this time.

Mineral leasing is not expected within the planning area in the foreseeable future. While there are active operational plans for locatable mineral mines, most mining in the recent past has been for casual use (as

defined in 43 CFR 3809), which has minimal impact on the land. As a result, there would be no anticipated mineral development-related cumulative impacts on socioeconomic conditions in the planning area.

Climate change and wildland fire management projects could have cumulative impacts on socioeconomic conditions related to livestock grazing and forestry resources. The increasing temperatures and droughts due to climate change are expected to increase the frequency, risk, and severity of future wildfires. Wildfires can destroy forests and reduce the economic contributions from harvesting forest products. However, there is an increase in the amount of future foreseeable proposed fuel reduction management projects, which might increase the amount of forest products harvested and increase the economic contributions from forestry. Wildfires can also impact livestock grazing through changes in forage availability and quality or from damage and loss of infrastructure or livestock.

Currently, there are 20 proposed wildland fire management projects in the Redding FO, two proposed projects in the Arcata FO, and many other proposed projects near the two Fos. The number of fuel reduction projects conducted each year can vary depending on the number of available personnel, resources, and the existing or predicted wildfire risk. These fuel reduction management projects might reduce visual resources, but the impacts would be short term. In the long term, continued hazard fuels reduction treatment would increase health and safety in the surrounding communities. When added to the impacts from past, present, and reasonably foreseeable future vegetation treatment projects, impacts from vegetation management treatments under Alternative B would increase the rate of improvements in health and safety in the surrounding area to the greatest degree followed by Alternative D. Because all action alternatives have more proactive vegetation treatment approaches than Alternative A, they would be expected to result in more cumulative improvements across the planning area than under Alternative A.

Improvements to major transportation infrastructure and construction of new infrastructure will be ongoing and can contribute to cumulative socioeconomic impacts in the planning area. Currently, there are approximately 20 ROW applications for new access roads within the two FOs. There are several projects and initiatives to improve telecommunication network (e.g., Digital 299 Broadband Project involving 300 miles of underground fiber optic cable to connect nearby communities) or protection of the telecommunication and utility infrastructure (e.g., Wildfire Risk Reduction, Reliability and Asset Protection Project). Past, present, and reasonably foreseeable infrastructure improvements can contribute to cumulative impacts by adding jobs and contributing to local economies, and on the residents' quality of life in such a way that they would improve safety of the travel network, shorten travel times, and improved communication networks.

The cumulative impacts of infrastructure improvement projects can also contribute to short-term cumulative impacts across the planning area. Concurrent construction projects in close proximity can add to the quality-of-life impacts by causing traffic delays and creating human health and safety concerns (e.g., from cumulative air quality impacts of concurrent construction activities in the planning area). Short-term cumulative impacts of concurrent activities can also be in the form of local workforce shortages (e.g., construction workers during a lot of construction activity in the area) or potential to create a housing shortage if workforce has to be brought in from outside of the planning area. Because Alternative C (followed by Alternative D) would include management that emphasizes multiple use and public enjoyment, under Alternative C (followed by Alternative D), incremental impacts from infrastructure construction

projects that improve quality of life would result in the most cumulative impacts by way of improving local residents' quality of life.

Recreation is expected to increase as the population increases, especially recreation associated with OHVs and e-bikes. This might increase congestion along trails and result in more conflicts across user groups. However, there are many proposed projects to develop new trail systems and modify existing trails and campsites, which would mitigate the congestion issues. When added to the impacts from past, present, and reasonably foreseeable future trails and recreation improvement and construction projects, Alternative C (followed by Alternative D) would relieve the most pressure on the trails network and recreational infrastructures in the planning area.

D.5.2 Environmental Justice

Issue Statements

- How would the alternatives impact environmental justice (disproportionately high and adverse effects on minority, low-income, or Tribal populations or communities)?

Affected Environment

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (59 *Federal Register* 7629), requires federal agencies to identify and address any disproportionately high and adverse human health, environmental, economic, and social effects of their actions, programs, and policies on minority and low-income populations (**Map 3-19**, Low-income Populations, in **Appendix A**). Executive Order 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All, was enacted on April 21, 2023 to complement Executive Order 12989. Until further guidance is issued on how to implement Executive Order 14096 the BLM continues to implement Executive Order 12898.

Environmental justice refers to the fair treatment and meaningful involvement of people of all races, cultures, and incomes with respect to the development, implementation, and enforcement of environmental laws, regulations, programs, and policies. It focuses on environmental hazards and human health to avoid disproportionately high and adverse human health or environmental effects on environmental justice populations. Within the planning area, communities of environmental justice concern include low-income populations—including homeless populations and those displaced by recent wildfires—minority populations, and members of Native American Tribal communities. Given the potential for disproportionate effects on these communities, enhanced efforts above and beyond normal public engagement as described in **Chapter 4**, Consultation and Coordination, may be required to reach these communities. BLM has solicited feedback from impacted communities and will continue to take this feedback into consideration.

Analysis consists of two steps: (1) screening planning area populations to identify the presence of communities of concern for further environmental justice consideration, and (2) reviewing impacts to determine the potential for disproportionate adverse impacts on communities of concern.

The CEQ's 1997 environmental justice guidelines state that a minority population is present if: "(a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis." A minority is a person who self-identifies as one or

more of the following racial or ethnic groups: Hispanic or Latino of any race, Black or African American, Asian American, American Indian, and Native Hawaiian. CEQ does not define a meaningfully greater threshold for consideration of a minority population as an environmental justice population. BLM defines meaningfully greater as 110 percent or higher than the minority population in the reference area (BLM 2022g).

Low-income populations are defined relative to the annual statistical poverty thresholds from the US Census Bureau (CEQ 1997). The CEQ guidance does not provide criteria for determining low-income populations as specifically as it does minority populations. Therefore, for this analysis, low-income populations are defined as people whose income is less than or equal to twice (200 percent) the federal “poverty level” (BLM 2022g). Populations are considered low-income when (a) 50 percent of the population is classified as low income, or (2) any geographic area of analysis has a low-income percentage of the population equal to or higher than the reference area.

To identify environmental justice populations, minority and low-income population percentages in each census tract were screened in comparison with a reference area to identify low-income or minority populations that meet the determination criteria and would receive further consideration regarding environmental justice concerns. A reference area may be the state or respective county within which the census tract is located. For this analysis, respective counties were used as reference populations. California has a large overall minority population (64.2 percent); using the meaningfully greater percentage for California (70.7 percent) would exclude all but three census tracts (of 207 census tracts) as having a minority population that would qualify them as environmental justice populations (US Census Bureau 2021a, 2021b). Using nearby counties as reference areas allows for identification of environmental justice populations at a finer scale and reveals populations that would not have been identified otherwise.

Table D-100 provides an overview of the environmental justice screening results for the planning area. Overall, 123 of the 207 census tracts in the planning area met at least one environmental justice criterion. Of the census tracts in each county, 50 percent or more qualified for further environmental justice consideration (US Census Bureau 2021a, 2021b).

Table D-100
Census Tracts with Environmental Justice Population within Each County in the Planning Area (2021)

Reference Areas ¹	Reference Area Minority Population – Meaningfully Greater Percentage	Reference Area Low-Income Percentage	Number of Census Tracts with Environmental Justice Population	Percent Census Tracts within Reference Area with Environmental Justice Populations
California	70.7	28.5	-	-
Butte County	32.7	36.6	32	60.4
Del Norte County	43.9	38.0	5	55.6%
Humboldt County	30.7	40.7	22	61.1
Mendocino County	40.2	37.3	13	54.2
Shasta County	24.2	33.1	30	60.0

Reference Areas ¹	Reference Area Minority Population – Meaningfully Greater Percentage	Reference Area Low-Income Percentage	Number of Census Tracts with Environmental Justice Population	Percent Census Tracts within Reference Area with Environmental Justice Populations
Siskiyou County	27.7	38.4	8	50.0
Tehama County	37.0	39.9	10	71.4
Trinity County	22.4	43.0	3	75.0

Source: US Census Bureau 2021a, 2021b

¹Respective counties are used as reference areas for environmental justice screening in this analysis. California is included for comparison only.

Low-income populations are represented at the census tract level in **Map 3-19, Low-Income Populations in Appendix A**. Tracts meeting the criteria for future environmental justice considerations based on poverty level include the following:

- Butte County: 1.02, 2.02, 3, 5.02, 6.03, 10, 11, 12, 13, 17.03, 17.04, 18, 19, 21, 23, 24.01, 24.02, 25, 28, 29, 30.01, 32, 35.01, 35.02, and 37
- Del Norte County: 1.01, 1.04, and 2.03
- Humboldt County: 1, 2, 3, 4, 5, 10.01, 10.02, 11.02, 12, 13, 102, 107.02, 108, 109.01, 110, 111, 115.02, 116, and 9400
- Mendocino County: 101, 102, 103, 104, 105, 107, 108.02, 110.03, 112, 113, and 116
- Shasta County: 101, 102, 104, 105, 107.03, 107.04, 108.03, 108.06, 109, 110.02, 112.09, 113, 115.02, 116, 117.01, 117.02, 117.03, 118.03, 120, 121.02, 123.01, 125, and 126.06
- Siskiyou County: 1, 2, 6, 7.02, 7.03, 9.01, 11, and 13
- Tehama County: 5, 6, 7.01, 7.02, 10, and 11.01
- Trinity County: 1.01 and 5

Minority populations in the planning area are shown on **Map 3-20, Minority Populations, in Appendix A**. At the census-tract level, the following tracts met the criteria for further environmental justice considerations based on minority populations:

- Butte County: 2.02, 3, 4.01, 5.02, 6.03, 6.04, 9.03, 11, 13, 25, 28, 29, 30.01, 30.02, 32, 33, 34, 35.02, 36, and 37
- Del Norte County: 1.02, 1.04, 2.01, and 2.03
- Humboldt County: 1, 2, 5, 10.02, 11.02, 101.02, 105.02, 105.03, 109.01, and 9400
- Mendocino County: 101, 105, 113, 115.02, 116, and 118
- Shasta County: 101, 103, 107.03, 108.04, 110.02, 112.09, 114.01, 114.02, 117.03, 120, 121.01, 122, 123.01, and 127.02
- Siskiyou County: 1, 2, 7.02, 9.01, and 13
- Tehama County: 3, 8, 9, 10, 11.01, and 11.02
- Trinity County: 1.02

Homelessness

Homelessness is a shared characteristic of a section of the low-income population that is of particular significance in this area and therefore is being considered specifically. Homeless or displaced populations may rely on public lands for subsistence use, as well as areas that are designated for day use or camping. As shown in **Table D-101**, all planning area counties except Mendocino County saw a considerable increase in overall homelessness between 2015 and 2019. The homeless populations in Butte, Del Norte, Shasta, Siskiyou, and Tehama Counties more than doubled (US Department of Housing and Urban Development 2019). Homeless persons experience high rates of health problems including, but not limited to, diabetes, heart disease, and human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS). Air quality can be a risk to those with additional health issues, and those without access to a home are more at risk for impacts from breathing heavily smoky air. These impacts will continue to grow with the higher intensity and likelihood of wildfires.

Table D-101
Point-in-Time Homeless Populations in Planning Area Counties (2015–2019)

Geography	Total Homelessness Populations (2015)	Total Homelessness Populations (2019)	Percent Change (2015–2019)
California	115,738	151,278	31%
Butte County	571	1,266	122%
Humboldt County	1,180	1,702	44%
Mendocino County	947	785	-17%
Del Norte, Shasta, Siskiyou, Lassen, Plumas, Modoc, and Sierra Counties	591	1,349	128%
Tehama County	138	288	109%
Trinity County	136	192	41%

Sources: US Department of Housing and Urban Development 2019

Note: The US Department of Housing and Urban Development groups together smaller counties when accounting for homeless populations. As a result, Del Norte County was combined with Shasta, Siskiyou, Lassen, Plumas, Modoc, and Sierra Counties. The other counties in the planning area (Humboldt, Mendocino, Tehama, and Trinity) show data for those areas alone.

Indigenous Population

Federally recognized Tribes are considered environmental justice populations; when possible, they are included in the analysis. A detailed discussion of Tribes and Tribal resources can be found in **Section D.5.3**, Tribal Interests, and the NCIP Socioeconomic Baseline Report (BLM 2021e, pp. 2-17 and 2-18).

Tribes and Tribal communities maintain a general concern for the protection of and access to areas of traditional and religious importance, as well as the welfare of plants, animals, air, landforms, and water on reservations and public lands. In addition to these general concerns, individual Tribes have specific treaty rights or Tribal concerns that may vary within the planning area. Thirty-one federally recognized Tribes and 14 Tribes (currently not listed per Public Law 103-454) have identified traditional use of resources in the planning area.

Environmental Consequences

The impacts on environmental justice populations in the planning area are discussed qualitatively in terms of management decision of all resources and utilizes/refers to analysis of other resource sections. Impacts

are measured in terms of changes to baseline level of indicators and in the context of potential disproportionate adverse or beneficial effects on environmental justice populations. Indicators and assumptions for analysis would be the same as those indicators and assumptions from those resources (see **Appendix C**, Approach to the Environmental Analysis).

Environmental justice populations are geographically defined populations, as discussed in the Affected Environment section, and non-geographically defined groups with common uses and interests (for example, homeless/displaced populations). Potential impacts on homeless or displaced people and their use of public lands includes management decisions affecting their ability to use the area for temporary shelter, for example, management of camping regulations/restrictions and areas designated as day use.

The environmental justice analysis area includes all census tracts with environmental justice populations and BLM-administered lands which reflect the scale of effects on traditional use of resources by Tribal communities.

Impacts Common to All Alternatives

Common to all alternatives, the BLM would work with federal agencies and local partners to develop land access for underserved populations. Consistent with existing Executive Orders, Secretarial Orders, and existing laws and regulatory requirements, the BLM would consider environmental justice impacts, including those impacts arising from climate change, in its decision-making process. The BLM would prioritize cleanup of hazardous material sites with eminent or existing discharge of hazardous materials where historic and prehistoric cultural resources and traditional Tribal economic resources, such as plant products, would be impacted.

Under all alternatives, impacts on identified environmental justice populations would include human health, air quality, water quality, and cultural ways of life, as well as social and economic impacts. The impacts on the general population would be the same as those described under the relevant analysis for those resources, and they are summarized in the discussion below.

Low-income populations are more likely to experience different impacts from displacement after wildfires than populations with higher incomes. Wildfires resulting in a sudden decrease in housing availability can disproportionately impact low-income households if housing costs (for example, property taxes and rents) increase as a share of their income more than they rise for the rest of the population. In addition, other disparate impacts on low-income families could occur in areas with low housing vacancies. Travel time to work for low-income families could increase if they are displaced. During the Camp Wildfire, 47 percent of households who made less than \$25,000 a year moved more than 30 miles from where they lived before the wildfire and 23 percent stayed in Chico. In contrast, just 28 percent of the families making more than \$150,000 a year moved more than 30 miles from where they lived before, and 50 percent stayed in Chico (Chico State University 2019).

Potential short-term impacts on the human health of local communities could occur as a result of wildfire and the use of prescribed fire as a management tool. Limited studies have been conducted on the short-term impacts of wildfire smoke on vulnerable populations. Some information suggests that low-income and minority populations may be more susceptible to impacts from smoke due to a higher level of existing health conditions that smoke may impact, such as asthma (Rappold et al. 2012). Some populations may also experience a higher level of exposure due to disparities in time spent outdoors (for example,

farmworkers) or due to indoor home and work environments that have a higher infiltration of outdoor pollutants (Burke et al. 2021).

Across all alternatives, there would be no difference in how the use of prescribed fire affects air quality, in terms of protecting human health in the long term. This is because NAAQS are set at levels that are necessary to meet that objective (see **Section D.2.1**, Air Quality and Climate). As a result, no long-term adverse impacts are anticipated on any populations, including those identified for environmental justice consideration, from this activity.

Vegetation treatments to reduce wildfire risk also would occur under all alternatives (see **Section D.2.4**, Vegetation). However, variations in vegetation treatments could affect the potential for large-scale wildfire and its associated impacts on communities. In addition, there is the potential that rural communities with a higher-level of minority and/or low-income populations may be particularly vulnerable as they have a historically lower level of public participation in implementation-level management decisions affecting vegetation management (for example, see Davies et al. 2018). Management approaches to coordinating with local communities during implementation of management actions could reduce the risk of impacts on all communities, including minority and low-income populations.

Under all alternatives, effects of climate change—such as those from more frequent and longer droughts, changing precipitation patterns, floods, and resource loss—can have adverse and disproportionate impacts on environmental justice populations. Severe weather events and floods can result in housing and property damage/loss, which are similar to impacts from wildfires and would disproportionately impact low-income populations. Low-income and minority populations are more likely to live in areas with limited access to clean water and other resources; these groups would experience disproportionate impacts from drought events and loss of natural resources brought on by climate change. More than other groups, Tribal populations who rely on natural and cultural resources such as vegetation for medicinal purposes, timber, fish habitat, and sacred sites on BLM-administered lands can experience disproportionate impacts from climate change. For example, impacts from sea levels rising in coastal areas with traditional Tribal resources or severe wildfires that destroy important cultural and natural Tribal resources would adversely and disproportionately impact Tribal populations.

Under all alternatives, the BLM would collaborate with cooperators, where practicable, to find and designate suitable near-urban areas for temporary homeless camping. Camping limitations within SRMAs and all other BLM-administered lands would have potential impacts on the homeless and displaced populations who may rely on BLM-administered lands.

Management which impacts the amount or locations of motorized routes can impact that ability of those with mobility disabilities to access BLM routes and/or resources, as this population may not be able to access locations in the absence of motorized route access. This population can include some members of Tribal populations, who may rely on motorized routes to access remote natural and cultural resources with cultural significance. See **Section D.3.7**, Travel and Transportation Management, for additional details.

Alternative A

Under Alternative A, management of fire suppression and vegetation treatments on BLM-administered lands would continue as under current management. The risks from wildfires would continue to impact

nearby communities, which would have adverse and disproportionate impacts on low-income communities as described under the *Impacts Common to All Alternatives* section.

Impacts from climate change would continue to adversely and disproportionately impact environmental justice populations at the current rate as described under the *Impacts Common to All Alternatives* section, potentially increasing in severity with worsening effects of climate change.

The BLM would continue to make a reasonable and good faith effort to identify and consider contemporary Native American concerns where projects might affect sociocultural and religious values. Protective measures within existing special designation areas (for example, ACECs, WSAs and designated wilderness areas, lands with wilderness characteristic, and WSRs) would continue to protect natural and cultural resources pertinent to Tribes.

As discussed in **Section D.3.7, Travel and Transportation Management**, the No Action alternative would result in the least amount of OHV access limitations, compared with all other alternatives, providing continued support for those with mobility impairments, including Tribal members.

Alternative B

Although environmental management actions related to environmental justice populations do not vary by alternative, Alternative B introduces several resource measures and management practices that are not in place under Alternative A; these measures and practices have the potential to uniquely impact environmental justice populations.

Management actions would prioritize landscape resiliency against climate change impacts (for example, severe wildfires, more frequent droughts, severe weather, and rising sea levels). These actions would indirectly benefit environmental justice populations who are more sensitive to sudden changes in public health and local economies. Identifying climate-vulnerable vegetation communities in consultation with Tribes and implementing adaptive management strategies to maximize climate resiliency would benefit Tribal communities who rely on local vegetation and other natural and cultural resources in the planning area.

Vegetation management and hazardous fuel reduction would be prioritized to mimic historical wildland fire intervals. A return to historical wildland fire regimes would help reduce wildfire smoke-related health risks on environmental justice populations. A transition in data collection used to identify future infrastructure placement in areas that are subject to frequent wildfire ignition would help to alleviate the burden on low-income populations from property loss and sudden decreases in housing availability. Adverse impacts from severe wildfires would be reduced compared with Alternative A. However, forestry management under Alternative B would emphasize habitat resilience and protection; therefore, impacts on environmental justice populations who rely more on resources for subsistence use than the general public, may not be as beneficial as those offered under Alternatives C and D, which provide additional management specific to wildfire resiliency.

Under Alternative B, lands with ACEC designations would increase by 63 percent compared with Alternative A. This could benefit Tribal communities who access potential resources within these protected areas. While wilderness areas and miles of wild and scenic river (253.7 miles) would be similar to Alternative A, the existing WSA-designated lands would be recommended for withdrawal from locatable mineral entry, which could provide more protection of Tribal resources compared with

Alternative A. Alternative B would provide additional protection to Tribal resources within the 12,090 acres that would be designated as Section 202 WSAs (which would restrict multiple uses) and the 21,970 acres that would be managed to protect wilderness characteristics as a priority over other multiple uses.

The BLM would improve facilitation of cultural and spiritual use of federal lands and resources consistent with existing laws and regulations and all Tribes and minority groups, which would result in beneficial impacts on Tribal and minority populations. Impacts on cultural resources that are important to Tribal populations under each alternative are discussed in more detail in **Section D.5.3**, Tribal Interests, and **Section D.2.9**, Cultural Resources.

As discussed in **Section D.3.7**, Travel and Transportation Management, Alternative B would result in more acres closed to OHV travel than under Alternative A, and fewer acres designated as OHV limited than under Alternative A. However, under Alternative B, the BLM would increase and prioritize development of recreational opportunities in historically underserved or disadvantaged communities and offer visitor services that are accessible to all user groups (for example, multiple languages and braille) and would include adaptive management to facilitate understanding of diverse outdoor recreation styles among demographics. Within RMAs, the BLM would offer free or low expense, disability-inclusive, facilitated experience programs that introduce people to outdoor recreational activities in a safe and supportive environment. American Disability Association mobility devices would be allowed on routes that are consistent with the safe use of those devices, and Americans with Disabilities Act access points would be developed where feasible. Compared with Alternative A, Alternative B would result in beneficial recreational impacts on disadvantaged and environmental justice populations.

Alternative C

Resiliency to wildfires, particularly in forested areas, would be emphasized under Alternative C. The adverse impacts of severe wildfires on environmental justice populations, especially from wildfire risks within forested areas, would be reduced to the greatest degree under this alternative.

Under Alternative C, a 22 percent reduction in lands with ACEC designations and a 74 percent reduction in miles of wild and scenic rivers compared to Alternative A could result in the removal of some protection for resources with Tribal importance. Protection for natural and cultural resources would, however, be maintained based on existing federal laws and BLM regulations, including but not limited to NHPA, Antiquities Act of 1906, ARPA, and NAGPRA. The BLM would continue to work with Tribes to ensure access, management, and use of important areas (see Section D.5.2 for additional details).

Impacts from management of WSAs and wilderness, similar to Alternative B, could result in increased protection of Tribal resources based on the recommendation that WSAs and wilderness be withdrawn from locatable mineral entry. Alternative C would provide additional protection to Tribal resources within the 5,840-acre area of Gilham Butte, which would be managed to protect wilderness characteristics as a priority over other multiple uses.

All other impacts from BLM management and practices under Alternative C would be the same as those described under Alternative B and impacts common to all alternatives.

Alternative D

Thinning treatments in forested areas would be conducted with the purpose of creating/maintaining wildland fire resiliency while protecting natural habitat; adverse impacts of severe wildfires on environmental justice populations, especially from wildfire risks within forested areas, would be reduced compared with the No Action alternative.

Under Alternative D, a 61 percent increase in ACEC designations compared with Alternative A would increase protection of potential Tribal resources and benefit Tribal communities. Miles of wild and scenic rivers would be reduced by 21 percent compared with Alternative A. As noted in Alternative C, this could result in the site-specific removal of some protection for resources with Tribal importance. Protection for natural and cultural resources would, however, be maintained based on existing federal laws and BLM regulations.

Impacts from management of WSAs and wilderness, similar to under Alternative B, could result in increased protection of traditional resources compared with Alternative A. This would be based on the recommendation that WSAs and wilderness be withdrawn from locatable mineral entry. Alternative D would provide additional protection of traditional resources within the 540 acres that would be designated as Section 202 WSA and the 11,360 acres that would be managed to protect wilderness characteristics as a priority over other multiple uses.

All other impacts from BLM management and practices under Alternative D would be same as those described under Alternative B and impacts common to all alternatives.

Cumulative Impacts

Cumulative impacts on environmental justice populations would be the same as those described under the socioeconomic cumulative impacts (**Section D.5.3**) where they would disproportionately affect environmental justice populations. These involve the cumulative impacts from past, present, and reasonably foreseeable future vegetation treatment and wildland fire management projects, which improve wildland fire resiliency and protect resources that are important to Tribal populations. The cumulative impacts from past, present, and reasonably foreseeable future infrastructure and recreational facilities' improvement projects can contribute cumulatively to the creation of jobs and increased income available to environmental justice populations. The cumulative impacts of infrastructure construction projects, when involving a decline in quality of life (e.g., increased traffic times), can have disproportionate impacts on environmental justice populations who may not have the economic resources to help them alleviate the quality of life impacts that can be undesirable.

Continued population growth in the planning area would have adverse and disproportionate impacts on low-income populations if new housing does not grow at a rate to support an increasing population. This population growth would potentially also impact the size of the homeless populations in the planning area. Population growth would also increase strains on social services and amenities that the environmental justice populations depend on, resulting in adverse and disproportionate impacts on these communities.

Interest in use of the area for recreation is expected to continue to increase. This could indirectly and disproportionately impact Tribal communities who depend on the local natural and cultural resources that may be degraded as a result of increased recreation. Environmental justice populations who are already

marginalized would also experience disproportionate impacts due to overcrowding and reduced resource availability.

D.5.3 Tribal Interests

Issue Statements

- How would the alternatives affect Indian Tribal assets, interests, and uses?
- How would the alternatives affect neighboring Tribally managed lands?

Affected Environment

Native American Tribal treaty rights and interests include a variety of economic and resource rights related to use and a continued ability to engage and promote in cultural practices, general use, economic development, and areas of other concern for Native Americans.

There are 31 federally recognized Tribes and Tribal entities that claim traditional use and resources within the planning area (see **Table D-102**, below). Of these, 15 federally recognized Tribes claim such uses within the Redding FO area while 10 federally recognized Tribes claim the same within the Arcata FO area. Four federally recognized Tribes/Tribal entities claim traditional use of the resources in both FO areas. Each Tribe and/or Tribal entity maintains a general concern for the protection of and access to areas within the analysis area of traditional and religious importance, as well as burial, residential, economic, sacred, and religious use locations. This also includes the health and condition of plants, wildlife, air, landforms, and water sources on both reservation and BLM-administered lands, as well as the protection of cultural and archaeological resources. In addition to these general interests in these resources, individual Tribes and/or Tribal groups also hold specific treaty rights or unique concerns that may vary within the analysis area.

In addition to federally recognized Tribes there are at least 10 Native American groups or organizations that also claim direct ancestral ties to the planning area. While not formally federally recognized, these are important groups within the community that have valid interests in the management of resources and ensured access for continued use and cultural practices to BLM-administered lands within the planning area. Regardless of status, all Tribes and Tribal entities/organizations, federally recognized and otherwise, are integral partners in developing BMPs within the planning area (BLM 2021a).

In accordance with federal regulations, policies, and treaties, the BLM is required to engage in meaningful consultation and coordination with Native American Tribes, particularly with regards to treaty rights and ongoing preservation. While there are no known congressionally approved treaties in place within the boundaries of the Redding and Arcata FOs, the general rights to access natural, medicinal, and sacred resources and spaces are guaranteed to federally recognized Tribes. In addition, the Hupa, Yurok, and Karuk were guaranteed membership in the Klamath River Basin Fisheries Task Force under the Klamath Act of 1986, which mandated the rebuilding of the fisheries along the Klamath River. This act recognized the critical importance of the fishery resources of the Klamath and Trinity Rivers for subsistence and ceremonial purposes, as well as for commercial harvest, recreational fishing, and the health of the local economy. While the act expired in 2006, members of these Tribes continue to be involved in salmonid habitat restoration projects within the planning area.

Table D-102
Federally Recognized Tribes and Tribal Entities with Traditional Resources and Uses in the Planning Area

Organization	Tribal Affiliation	BLM Field Office
Alturas Indian Rancheria, California	Achomawi	Redding
Bear River Band of Rohnerville Rancheria	Wiyot, Mattole, Bear River, and Wiyot	Arcata
Berry Creek Rancheria	Maidu	Redding
Big Lagoon Rancheria	Yurok and Tolowa	Arcata
Blue Lake Rancheria	Wiyot, Yurok, and Tolowa	Arcata
Cachil DeHe Band of Wintun Indians of the Colusa Indian Community of the Colusa Rancheria	Wintun	Redding
Cahto Tribe of the Laytonville Rancheria	Cahto	Arcata
Cher-Ae Heights Indian Community of the Trinidad Rancheria	Yurok, Miwok, and Tolowa	Arcata
Confederated Tribes of Grand Ronde	Chasta (Shasta), Chasta Costa, Chinook, French Canadian Iroquoian, Kalapuya, Santiam, Tualatin, Yamhill, Yoncalla, Marys River band, Mohawk, Molalla, Lower Umpqua, Rogue River peoples, Talekma, Upper Umpqua peoples, Lower Rogue Athapaskan peoples, and Tillamook	Redding
Confederated Tribes of Siletz Indians of Oregon	Alsea, Yaquina, Chinook, Clatsop, Coos, Hanis, Miluk, Kalapuya, Santiam, Tualatin, Yamhill, Yoncalla, Marys River band, Molalla, Lower Umpqua, Siuslaw, Shasta, Klamath River peoples, Rogue River peoples, Klickitat, Takelma, Dagelma, Latgawa, Cow Creek, Tututni, Applegate River, Chetco, Chasta Costa, Euchre Creek, Galice Creek, Miconotunne, Pistol River, Port Orford, Sixes, Tolowa, Upper Umpqua, Upper Coquille, Yashute, Lower Rogue Athapaskan peoples, Tillamook, Siletz, Salmon River, Nestucca, Nehalem, and Tillamook Bay	Redding
Elk Valley Rancheria	Tolowa and Yurok	Arcata
Enterprise Rancheria	Maidu	Redding
Greenville Rancheria of Maidu Indians	Maidu	Redding
Grindstone Indian Rancheria of Wintun-Wailaki Indians of California	Wintun and Wailaki	Redding
Hoopa Valley Tribe	Hoopa (Hupa)	Arcata and Redding
Karuk Tribe of California	Karuk	Arcata and Redding
The Klamath Tribes	Klamath, Modoc, and Yahooskin	Redding
Mechoopda Indian Tribe of the Chico Rancheria	Maidu	Redding
Modoc Tribe of Oklahoma	Modoc	Redding
Mooretown Rancheria	Konkow and Maidu	Redding
Paskenta Band of Nomlaki Indians	Nomlaki	Redding
Pit River Tribe	Big Bend, Burney, Likely, Lookout, Montgomery Creek, Roaring Creek, and XL Ranch Rancherias	Redding
Quartz Valley Reservation	Klamath, Karuk, and Shasta	Redding

Organization	Tribal Affiliation	BLM Field Office
Redding Rancheria	Wintu, Pit River, and Yana	Redding
Resighini Rancheria	Yurok	Arcata
Round Valley Reservation	Yuki, Concow, Little Lake Pomo, Nomlaki, Wailaki, and Pit River	Arcata and Redding
Sherwood Valley	Pomo	Arcata
Susanville Indian Rancheria	Achomawi, Atsugewi, Maidu, Northern Paiute, Washoe	Redding
Tolowa Dee-ni' Nation	Tolowa	Arcata
Wiyot Tribe (formerly Table Bluff Reservation-Wiyot Tribe)	Wiyot	Arcata
Yurok Reservation	Yurok	Arcata and Redding

In 2007, the BLM cooperated with the US Forest Service, the California Indian Basketweavers Association, and the California Indian Forest and Fire Management Council to develop a traditional gathering policy relative to culturally utilized non-timber plant species and fungi. This enabled local free use of these resources, without needing to obtain a permit, provided such use was for personal, community, and other noncommercial purposes. This agreement ensures that access will be maintained to traditional gathering areas and that Tribal groups are afforded expanded opportunities for involvement in local land management decisions to enhance traditional plant populations.

A number of modern cemeteries used or visited by local Tribes are on BLM-administered lands within the planning area, as are other historic-era cemeteries of concern to Tribal groups. These cemeteries could need additional protection if disturbance is identified or proposed. The BLM is committed to continue to facilitate access to these burial places and to provide protection from disturbance, as needed.

Within the context of federal legislations (the NHPA, NEPA, FLPMA, American Indian Religious Freedom Act of 1978, and NAGPRA), executive and secretarial orders, and BLM policies, consultation is intended to meet the federal government's responsibility to protect and preserve Tribal rights and resources that are on federal lands or have the potential to be affected through various federal actions and undertakings.

For all Tribes and Tribal entities, maintaining confidentiality and discretion regarding resource locations and uses to support cultural practices is essential to protecting these resources. Ensuring continued access and use is also essential. While these two activities may seem inherently contradictory, for Tribal groups that maintain relationships to the landscape, the confidentiality regarding resource locations and any Traditional, sacred, or religious cultural uses may take precedence. The BLM manages sensitive Tribal information collected through consultation. This information includes historic and current data, such as visual effects on sacred sites and TCPs. The BLM maintains this information for planning purposes to facilitate avoidance and mitigation measures that may need to be implemented for future projects.

The BLM recognizes the importance of maintaining these relationships that respect confidentiality but also acknowledges the need for specific resource information to shape management processes. Coordination and engagement between the BLM, Tribes, and Tribal entities is carried out through essential government-to-government consultation and a cooperative approach, which drives the stewardship efforts between Tribes and federal agencies. Within the analysis area, the BLM understands that the nature, extent, and locations of resources that are important to Tribal entities have not all been disclosed, nor have the specifics related to certain uses or cultural practices. However, both the Arcata FO and Redding FO foster these important relationships to improve protections to resources and continued use, and they support

the development of economic opportunities. In accordance Secretarial Order 3403, BLM will identify opportunities for co-stewardship and engage in meaningful consultation at the earliest phases of planning to provide Tribes with an opportunity to shape the direction of management practices that consider the preservation of Tribal interests and develop agreements consistent with the nation-to-nation responsibilities and trust obligations.

Environmental Consequences

The analysis area for Tribal interests encompasses BLM-administered lands within the planning area, which reflects the scale of the effects on traditional use of resources as they occur on BLM-administered lands.

Impacts Common to All Alternatives

Common to all alternatives, the BLM would continue to engage with Tribes and Tribal entities, including the formal government-to-government consultation process, as required under federal regulations. BLM would also engage with descendent groups and similar interested parties under all of the alternatives. The general rights to access natural, medicinal, and sacred resources and spaces would continue to be guaranteed for federally recognized Tribes. Additionally, members of the Hupa, Yurok, and Karuk Tribes, who were guaranteed membership in the Klamath River Basin Fisheries Task Force under the Klamath Act of 1986, would continue to be involved in salmonid habitat restoration projects within the analysis area under all alternatives. Local free use of culturally utilized non-timber plants and fungi would also continue for personal, community, and noncommercial uses under the 2007 agreement. Ensuring access to traditional gathering areas would be maintained. Also, Tribal groups would be given the opportunities to be involved in local land management decisions for the benefit of traditional plant populations.

Under all alternatives, management of resources would continue to be guided by BLM regulations and policies, as well as federal and state laws (where applicable). Implementing management actions for other resources would have the potential to affect Tribal interests; however, concerns from Tribes and Tribal entities would be disclosed through the formal consultation process and other engagement opportunities. This would occur as part of the decision-making process for all other BLM-administered resources. This would allow the BLM to understand Tribal concerns within the context of a specific resource or resource use, which is particularly important where confidentiality and discretion are required to preserve sensitive Tribal information and to protect traditional, sacred, and religious practices. Furthermore, all BLM lands in the planning area would be considered suitable for co-stewardship and co-management, and would be approached through and would be approached through government-to-government consultation between the BLM and Tribes.

It is challenging to discern the potential impacts under all alternatives. This is because the confidentiality and protection of sensitive information and Tribal knowledge pertaining to culturally important places, sacred sites, and traditional practices makes it challenging to make direct assessments of where increased uses or surface-disturbing activities may directly intersect with resources of Tribal interest. For these purposes, general management trends and use patterns under each alternative would have to form the programmatic understanding of how effects on resources of Tribal interest, whether direct or indirect, may occur.

Under all alternatives, specific protections, including VRM classes, ACEC designations, lands with wilderness characteristics, WSRs, wilderness areas, WSAs, and riparian management areas, would continue to provide protections that would restrict surface-disturbing activities while also preserving and

enhancing areas with natural or culturally important characteristics. Surface-disturbing activities have the potential to affect Tribal resources and areas of Tribal interests directly and indirectly through a variety of alterations and disturbances. These may include physical alteration to culturally important spaces and sacred sites, as well as changes to larger landscapes that may be of importance to Tribal entities. Increased development and intensive use have the potential to result in increased visitation to areas where resources associated with Tribal interests are present, which can increase the potential for physical impacts resulting from human activities. These can occur from increased exposure and alterations from construction of new infrastructure, mineral exploration development, timber harvesting, grazing, and similar activities that have the potential to disturb sensitive resources.

Increased recreation also has the potential to result in disturbance to resources through vandalism or illicit removal of unknown artifacts or culturally sensitive materials. Increased visitation and use also have the potential to result in changes to the atmospheric and audible qualities of sites, landscapes, and TCPs resulting from an increase in people and resource use activities in areas with potential Tribal sensitivities. Therefore, where protections are in place, the limitations to development and use reduce the direct impacts on aspects of the environment that Tribes and Tribal groups hold as culturally important, as well as indirect affects related to increased visitation, use, and changes in access and mobility by Tribal members. While the acreage projected under each category shifts under each alternative, designations would provide additional protections by limiting specific uses or forms of development. In areas with demonstrable, natural and cultural importance, overlap with resources of Tribal interests is likely.

Under all alternatives, approaches to specific resources (cultural, coastal, fish, forestry, soils, plants and vegetation, visual, water, and wildlife) would utilize management strategies that consider Tribal uses, access, and Traditional knowledge management practices. Similarly, consultation related to specific uses and actions (archaeology, wildland fire management, transportation planning, livestock grazing, ROW development, climate change initiatives, mineral development, and recreation) would continue to involve consultation with Native American Tribes at the planning level, as well as during the design development and project-specific level. Additionally, under all alternatives, land tenure adjustments (retention and disposal) would require consultation with Native American Tribes. The BLM would not dispose of lands with cultural and Tribal sensitivity, except in specific circumstances, such as land transfers to Tribes. Policies related to acquisition of lands to create more cohesive holdings would likely improve issues surrounding Tribal access in addition to overall protection of resources and uses as they pertain to Tribal entities.

Alternative A

Under Alternative A, the existing management practices would continue in their current capacity and trajectory. While not formalized in previous RMPs, the BLM has conducted its management of resources in relation to Tribal interests in accordance with relevant federal regulations, executive orders, and BLM policies. Similarly, other federal agencies within the planning area are also bound by the same federal regulations and executive orders, although specific agency policies may vary. Under the current practices, meaningful government-to-government consultation between federal agencies and Tribal governments is required for all federal actions and federal undertakings.

As discussed above under the *Impacts Common to All Alternatives*, protections and special designations would protect and enhance the natural and cultural qualities of an area. For resources of Tribal interest, the exact locations of these resources, spaces, and landscapes are often confidential and protected

information that is sensitive to the Tribes. While these resources associated with Tribal interests may extend beyond the protective areas, the more acreage under protection would generally correlate with increased protection. **Table B-1** in **Appendix B** outlines the special designation acreage currently under protection under Alternative A.

Aside from VRM Class IV, these designations or resource uses would provide degrees of protection from certain uses and developments, particularly in areas where known sensitivities related to cultural or Tribal interests are in place. At the project-specific level, particularly for new uses, Tribal consultation is required and would continue to address potential effects during the design phases as part of the funding or permit process. Additionally, the BLM would continue to build the existing relationships; work with the Tribes to avoid and minimize potential effects on areas with sensitive resources of Tribal interests, including changes to traditional landscapes; and continue to improve access for Tribal use.

Alternative B

While federal regulations typically only require federal agencies, such as the BLM, to consult with federally recognized Tribes and Tribal entities, efforts to engage with other Tribal groups have been an integral shift in Tribal consultation effort in recent years, particularly in California. Under Alternative B, this process—reflective of an existing trend to increase Tribal engagement under current BLM practices—would be integrated into management policies. As such, this would allow for increased consultation and coordination involving Tribal interests, leading to increased stewardship of resource types, uses, and access that are importance to the various Tribal groups that have interests within BLM-administered areas, as well as the broader Redding FO and Arcata FO planning areas.

Where Alternative B most notably differs from the existing conditions is through the introduction of several measures and management practices that are not currently in place under Alternative A. These management practices are all designed to increase coordination and cooperation with Native American Tribes and Tribal entities, as well as use and access to resource types of importance. Summaries of each resource type and specific practices related to Tribal interests are outlined below, although more nuanced discussions of each resource type can be viewed in their respective sections:

- **Coastal Resources:** The BLM would look for opportunities to work with Tribes regarding coastal resource management. The BLM would collaborate with Tribes to facilitate traditional cultural ceremonies and use of coastal resources. Also, the BLM would prioritize Tribal consultation during the cultural survey of coastal regions and provide feedback related to data recovery.
- **Cave and Karst:** The BLM would prioritize cave inventories for cultural resources within ACECs, as well as all rock shelters and natural caves. Collaboration and consultation with Tribes would be undertaken as part of the survey efforts and to create management protocols for specific cave sites with natural and cultural sensitivities. These areas would also be protected and have no public interpretation without Tribal consultation. All access to cave sites would be limited where important cultural resources are found, with exceptions for Tribal use and access.
- **Fish:** The BLM would work with Tribes and Tribal entities to identify strategic land for future acquisition to protect fish habitat. Also, the BLM would develop cooperative management relationships to manage fish resources and habitats.
- **Wilderness Characteristics:** The BLM would facilitate Tribal access to lands with wilderness characteristics with traditional Tribal values and uses. BLM will also take into consideration Tribal

interests before promoting WSAs and inform relevant public officials about these interests, when appropriate, to be certain wilderness designation does not impede Tribal traditional use of areas. It should be noted that wilderness designations may impede access to these areas of Tribal traditional importance, particularly for Tribal elders or others with mobility issues.

- **Vegetation and Plants:** BLM facilitates Tribal access to and use of plant resources of cultural importance. The BLM would work with Tribal partners to coordinate invasive, nonnative species management through the planning area and across jurisdictional boundaries to preserve important resource types, in addition to seeking opportunities to co-manage areas where culturally important vegetation exists.
- **Water:** The BLM would work with Tribes to develop approaches and practices for watershed management efforts related to water quality, habitat restoration, and sediment reduction.
- **Wildlife:** The BLM would work with Tribes to conduct research on wildlife populations, habitat conditions, and other environmental factors.
- **Wildland Fire:** Through meaningful consultation and coordination, the BLM would promote Native American traditional fire management practices. The BLM would consider potential traditional and cultural burning with prescribed burns. Vegetation management would be afforded similar cultural and traditional uses, in addition to robust programmatic planning efforts, which would entail further consultation. Fire suppression activities would be restrained in areas with cultural characteristics or in areas with cultural or Tribal interest sensitivities. No heavy equipment would be used for suppression within burial grounds, cemeteries, or other important Tribal cultural sites.
- **Land Adjustments:** Land with heritage areas and cultural sensitivity, including TCPs and adjacent buffer lands (i.e. wilderness areas), shall be retained, except where land transfers are being extended to other federal agencies or Tribes. This would also include protection of cultural landscapes and other traditional settings. Mineral withdrawals would also include TCPs, cemetery properties, and other cultural resources, particularly within identified ACECs. Land acquisitions would be driven in part by a variety of resource sensitivities, including cultural resources, landscapes, and TCPs. Land acquisitions under Alternative B would also rely on transitioning land to create cohesive units and to reduce access and logistic challenges related to sporadic, piecemeal holdings. Under this alternative, proposed land withdrawals and transfers includes previously identified parcels that would be transferred to the Tribe and held in trust by the Bureau of Indian Affairs, which would promote Tribal interests within a specific area. However, the proposed withdrawal would exclude a WSA. The exclusion of the WSA may result in challenges accessing the area but would maintain protections of existing conditions and potentially important Tribal resources.
- **ROW Authorizations:** While ROW authorizations are addressed on a case-by-case, project-level basis, which requires consultation with Tribes and consideration of important Tribal cultural resources under Section 106 of the NHPA, Alternative B would include management strategies specific to future ROW development:
 - Identified TCPs would be managed as ROW avoidance areas.
 - Film permits would not impact cultural resources, and they would adhere to general protocols and policies regarding use, transportation, and other activities. These would include restrictions on lands and areas of high Tribal interest.

- Communication developments would avoid TCPs, which would be investigated in greater detail during the Section 106 compliance process.
- **Recreation:** Opportunities for Tribal engagement would be integral to the planning process for recreational opportunities in areas of Tribal cultural sensitivity and beyond. This includes trail construction, campsite development, and river and creek access. In all instances, new recreation uses would not be placed near TCPs or areas of sensitive Tribal interests. Other practices would include the following:
 - Monitoring of recreational use, especially camping, may result in closures of areas to recreational activities if uses are found to damage or infringe upon important cultural resources. These may include TCPs, although confidentiality related to these places would likely ensure that recreational activities avoid placement near sensitive areas of Tribal importance.
 - Where recreation with high visitation overlaps areas of sensitivity, particularly related to cultural resources, these areas would include robust education and interpretive programs to outline resource stewardship, etiquette, rules, and policies. These would be prepared in coordination with Tribal representatives to ensure appropriate information is being shared so as to not jeopardize confidentiality and invite additional impacts related to inadvertent uses or trespasses related to sites, properties, or Tribal resources.
- **Minerals:** Casual mining and prospecting, particularly the use of metal detectors, would not be allowed within ACECs, especially those identified with important cultural values. This would reduce the potential for collection, vandalism, and other forms of alteration or destruction related to potentially important cultural and Tribal resources.
- **Transportation and trails:** Access related to sacred sites and traditional gathering areas and other resources would be maintained physically and in terms of confidentiality to reduce potential trespasses and degradation of culturally important spaces from infringing uses. OHV trail development would require specific plan developments and monitoring, which would be developed in consultation and cooperation with Tribes and Tribal entities.
- **Renewable and Alternative Energy:** All renewable energy projects would be addressed on a case-by-case basis and involve consultation with Tribes through various regulatory practices. This is particularly true of biomass projects, as well as wind and solar, which would all be considered and reviewed on a case-by-case basis; these would be restricted from areas with cultural settings (including cultural landscapes and TCPs) and from areas with VRM Class I and Class II objectives.
- **Wild and Scenic Rivers:** As part of the protection of scenic values along watersheds, individual management plans for particular rivers would be developed. These would include the protection of important Chinook spawning sites and other riverscapes. The BLM would prepare these plans and management protocols in cooperation with Tribal representatives to ensure Tribal interests are reflected.
- **Socioeconomic:** The BLM would continue to use agreements with Tribes for maintaining and monitoring sensitive resources and work with Tribes to enhance recreation, natural, and cultural resource management along important watersheds. The BLM also would prepare and provide materials in multiple languages and explore other opportunities to reflect increased diversity and underserved communities. This may include Tribal languages, upon further request; consultation; and coordination.

- **Interpretation and Education:** The BLM would develop interpretive plans using specific BLM guidelines and goals to interpret key cultural resources, primarily at existing areas where high visitation presents increased risks of impacts. Specific to sensitive cultural sites and areas of Tribal interest, any interpretive programs would only be used if they would not infringe upon confidentiality or potentially affect the integrity of any important resource associated with Tribal interests. All cultural sites with Tribal importance or associations would be interpreted through close collaboration with the Tribes.
- **Public Health and Safety:** Increased law enforcement to facilitate more resource protection would be explored and secured in agreement documents with Tribes. Efforts to prioritize removal of trespass uses, including cannabis cultivation sites, and illegal dumping would be increased. The BLM would prioritize these efforts in resource-sensitive areas, including those that have the potential to include sensitive areas of Tribal interest, or areas where access may be considered limited or unsafe.

As these management policies specific to resources uses and types demonstrate, Alternative B would include robust consultation, coordination, and cooperation efforts with Tribes and Tribal entities to increase appropriate protection and maintenance of Tribal interests related to resources, settings, and access.

As with all alternatives, the BLM would continue to consult with Tribal representatives on a variety of topics related to the identification and appropriate management of various resources, including protection, preservation, and assurance of continued Tribal use, under Alternative B. **Table B-1 in Appendix B** demonstrates the acreage totals, as well as the percentage of each acreage amount with protections or special designations, under Alternative B compared with Alternative A.

Compared with the other alternatives, Alternative B is generally the most restrictive related to potentially disturbing uses, especially compared with Alternative A. This is partially demonstrated in **Table B-1 in Appendix B** with the increased allocations of special designations, including lands with wilderness characteristics where wilderness characteristics and qualities are the most restrictive. In addition to the management policies outlined in the discussion above, Alternative B includes some intensive use restrictions that would limit the potential for additional disturbances. Limiting ground disturbance would thereby reduce impacts on resources associated with Tribal interests.

As demonstrated in the table, the limitation on specific uses is increased under Alternative B compared with Alternative A. This increased protection, combined with the aforementioned common management practices discussed under Alternative B and consultation, as required under federal regulations, would continue to reduce impacts on resources with Tribal interests. Where potential uses remain comparable or are increased, such as with livestock grazing and increased recreation, the overall management approaches outlined above would continue to avoid and minimize impacts. Furthermore, any projects or efforts that may result in adverse effects on resources of Tribal interest would require project-specific consultation during the development phase. This is true for all uses outlined in **Table 2-1** where openness to development is not explicitly prohibited.

Alternative C

Under Alternative C, effects on Tribal interests would be the same as those described under *Impacts Common to All Alternatives* as well as those discussed under Alternative B. This is because the same

management practices and policies would be enacted. As with Alternative B, these management practices would provide increased Tribal cooperation and coordination regarding specific resources and uses that have the potential to impact Tribal interests. These management practices, coupled with required consultation under Section 106 and various policy documents, would greatly reduce the potential for impacts on resources of Tribal interest. This is particularly true in relation to Alternative A, where these management practices are not currently enacted in a formal capacity, although some may currently be practiced in a more informal capacity.

Where Alternative C differs from both Alternatives A and B is the acreage related to land designations and use restrictions. Alternative C is generally less restrictive with development and uses with the least amount of formal protection through special designations (see **Table B-1** in **Appendix B**).

As illustrated above, Alternative C has fewer acres that would be specially designated. This is particularly true with designated ACECs; Alternative C has the least amount of acreage allocated to ACECs, including when compared with Alternative A. This presents a situation where lands currently under increased protections may not receive the same level of treatment going forward. While this has the potential to result in increased uses and impacts on Tribal resources, the specifics surrounding these ACECs and the potential for Tribal sensitivities are unknown, due in large part to the confidentiality of important Tribal sites.

This is also true in areas with lands with wilderness characteristics. Alternative C would have the least amount of areas with strict wilderness characteristics as the primary goal; instead, Alternative C would shift to increased acreage with multiple uses as a priority. The increased variation in use, compared with Alternative A, would have the potential to result in increased impacts related to those uses. This potential for increased use under Alternative C is highlighted further in **Table B-1** in **Appendix B**, which outlines specific resource use allocations.

As demonstrated, the management actions under Alternative C would result in increased development and use when compared with Alternatives A and B. However, the management approaches outlined under Alternative C would aim to avoid tangible impacts on resources associated with Tribal interest when exploring increased use through the planning process. Through increased cooperation and consultation, any projects or efforts that could result in adverse effects on resources of Tribal interest would require project-specific consultation during the development phase. This is true for all uses outlined in **Table B-1** where openness to development is not explicitly prohibited. Alternative C does not include the disposal of specific parcels to Tribes for management as Tribal trust lands by the Bureau of Indian Affairs. However, Alternative C does include the disposal of isolated parcels, generally in areas where the BLM is not able to manage effectively, which may coincide with lands appropriate for transfer to Tribes. All disposals or transfers would be addressed through Section 106 review and other relevant regulations.

While Alternative C has the potential to result in increased impacts on resources of Tribal interest through increased use and decreased protections, the combination of management practices and required consultation would lead to situations where any effects would likely be avoided, minimized, or mitigated at the project level. As such, Alternative C is unlikely to result in tangible impacts on Tribal interests.

Alternative D

Under Alternative D, effects on Tribal interests would be the same as those described under *Impacts Common to All Alternatives* as well as those discussed under Alternative B. This is because the same management practices and policies would be enacted. Generally, Alternative D is a middle-ground approach between Alternatives B and C. Alternative C provides increased levels of protections and limits or built-in flexibility on some intensive surface-disturbing activities, while allowing for some increased use and access, particularly for recreation purposes. Regarding protections, which have the potential to limit disturbing places and settings with cultural and Tribal importance, Alternative D generally reflects the conditions illustrated in Alternative B with increased acreages with heightened protections. However, some protections illustrate the increased levels of flexibility (see **Table B-1** in **Appendix B**).

As illustrated previously, Alternative D is generally protective. There is no change in the VRM Class I designations, and the acreage dedicated to VRM Class II designations, which would provide similar protections would be notably higher at 61,600 acres when compared to 24,600 acres. This increase in Class II designated lands would offer protection while also allowing for some flexibility of use, which may be beneficial related to ease of access to sites and settings of Tribal importance. The inherent flexibility of Alternative D is also reflected in the lands with wilderness characteristics designations with a balance of strict wilderness and multi-use priorities, compared with the other action alternatives. However, compared with Alternative A, the increased lands with wilderness characteristics protection under Alternative D would provide protections that are not currently in place. These would result in a decreased chance for impacts on resources of Tribal interest within these areas.

In addition to the management policies common to all the action alternatives, which place an increased emphasis on protection and cooperations involving resources of Tribal interest in resource development and specific land uses, the use allocations under Alternative D demonstrate a balance between increased protections and limitations on uses that have the potential to be particularly damaging to resources of Tribal interests with associated surface disturbances.

With regards to Tribal interests, Alternative D would provide a mixture of strict protection of habitats and sensitive areas, while also allowing for increased access for not only Tribal members but the public at large. This provides a situation for increased impacts from various uses, higher visitation, and an increased potential for surface disturbance; however, the management practices described under Alternative B would also be implemented under Alternative D., including the potential withdrawal of lands from BLM to the Tribes and Bureau of Indian Affairs. Also, continued consultation would put forward an approach of avoidance and minimization related to areas where sensitive resources of Tribal interests are found, while also guaranteeing continued use and access for Tribal members. Further consultation related to federal undertakings—such as grazing and mineral permits, ROW applications, and recreation planning and implementation—would be required at the project level to fully develop an understanding of potential effects and necessary mitigation measures to alleviate those.

Cumulative Impacts

The cumulative impacts analysis area for resources and uses associated with Tribal interests includes the entire planning area, and it likely extends beyond its boundaries to include areas of traditional habitation and ancestry. Simultaneously, potential Native American Tribes and Tribal entities outside the planning area may also have interests related to resources within the planning area. Beyond the legacies of colonial exploration and settlement within the planning area during previous centuries, various forms of resource

extraction, land development, other uses, and encroaching urbanization have greatly affected the integrity of Tribal resources.

Current practices, which have largely been informed by environmental regulations and increasingly culturally aware policies from the 1970s to the present day, have taken Tribal interests into greater account through increased government-to-government engagement. In recent years, this engagement has expanded beyond only federally recognized Native American Tribes and included engagement and cooperation with other Tribal entities as well. Cooperation with Native American Tribes and Tribal entities related to resource management (fisheries, wildfire, and wildlife) has extended beyond cultural resources and TCPs. New opportunities for beneficial and productive cooperative stewardship continue to present themselves to face the ongoing challenges and issues related to climate change, population growth, and increased visitation and overall use of public lands. Reasonably foreseeable actions with the potential to affect resources of Tribal interests and use would be consistent with these current actions and overall trajectory.

All the alternatives would contribute to cumulative impacts on Tribal interests within the planning area. This is particularly true of Alternative A, which would maintain the current practices, which clearly illustrated the previous RMPs in terms of Tribal interests in resources; however, the practices have evolved in an ad hoc capacity over time and through subsequent policy changes, which are subject to political changes in the future. However, federal regulations would require ongoing consultation related to federal actions involving the BLM, as well as all other federal agencies. These regulations apply to federally administered lands and projects within the broader planning area that are subject to federal funding or permitting processes.

While federal involvement is an important part of managing resources with Tribal interests, California and various state and local agencies are also required to consider potential impacts on Tribal resources under CEQA. This also includes a formal consultation component with all Native American entities under Assembly Bill 52. While these regulations are not typically pertinent to the BLM-administered lands, they offer a level of protection and due process to properties and projects outside federal ownership and regulatory nexuses. However, these projects are administered by a variety of agencies and departments that may provide consultation and impact identification efforts in different ways. While these regulations, in combination with existing federal regulations and agency planning efforts, help to decrease cumulative impacts throughout the planning area, the potential for some impacts on resources of Tribal interests remain plausible.

All the action alternatives would increase management of resources of Tribal interest through specific management goals, approaches, and policies. These are predicated on protecting and improving Tribal interests and access to important Traditional resources associated with Tribal interests through consultation and cooperation, in addition to potential co-stewardship and sharing of knowledge and approaches. In terms of potential impacts, all action alternatives are inherently based on avoidance and minimization of potential effects through consultation and fostering relationships with Native American Tribes, entities, and representatives. That said, some alternatives are more restrictive of potentially damaging uses, which, while likely managed through the proposed practices, would result in increased chances for potential disturbance.

Generally, management under Alternative B would be the most restrictive toward increased uses of many resources and resource types. Alternative B would lead to more lands that would be closed to

development or uses that would have the potential to create surface, subsurface, or access-disturbing activities. The BLM considers Tribal interests with all management of the open lands, as well as those that are more restricted, to prioritize Tribal access and use alongside other programs.

Alternative C would be the most use driven while also including the least restrictive use protections. However, the overall use patterns and allocations, in addition to the improved management practices under the action alternatives, would improve the management of resources of Tribal interests through avoidance and minimization. Mitigation would also be implemented through close consultation at the project level in support of any expanded uses requiring leases, permitting, funding, or other federal mechanisms. Although the potential for impacts is increased under this alternative, the conditions would improve for Tribal interests under Alternative C compared with current practices under Alternative A.

Alternative D provides both intensive protections and restrictions on use. The protections and restrictions are similar to those presented under Alternative B. The expansion of uses is similar to under Alternative C, particularly those related to increased recreation opportunities. While recreation and increased visitation throughout the planning area have the potential to compound and create situations where resources of Tribal interest are at increased risk, all federal agencies are required to treat Tribal interests with confidentiality and discretion. This, combined with further consultation and nuanced education and interpretive programs catering to sensitive areas with increased visitation, would offset some of these impacts. Further recreation planning and project-level reviews would further reduce the potential for impacts on resources of Tribal interest.

D.5.4 Public Health and Safety

Issue Statements

- How would the alternatives address public health concerns?

Affected Environment

The BLM is charged with sustaining public lands for the use and enjoyment of present and future generations which includes efforts to minimize and reduce impacts from releases of hazardous materials on the health, diversity, and productivity of those lands and on the health and safety of the individuals who utilize public lands. In the execution of its mission, the BLM will likely increase the regularity of informal Tribal consultations on land management activities, cooperative management agreements, local Tribal hiring, and the potential land acquisition from BLM through Congressional action. Additionally, the Federal Land Policy and Management Act of 1976 requires that BLM actions comply with approved standards for public health and safety.

Public health and safety concerns in the planning area include illegal trespass; marijuana growing operations and unauthorized water diversions; hazardous substances generation; homeless camps and trash at long-term camping sites; trash and human waste at various locations; OHV use; general misuse of BLM-administered lands; abandoned mine land sites; use of firearms; and hazardous materials/waste generation.

The potential for wildfire also creates public health and safety issues with respect to firefighter access and public escape from wildfires. In addition, recent wildfire events have resulted in steep areas that lack protective vegetation cover, which thereby create a greater likelihood of soil slumping and landslides.

Hazardous materials management is carried out under the authorities contained in the Resource Conservation and Recovery Act of 1976 (as amended); the Federal Water Pollution Control Act, as amended by the CWA of 1977; and the Comprehensive Environmental Response, Conservation, and Liability Act of 1980, as amended by the Superfund Amendments and Re-Authorization Act of 1986. Hazardous materials management includes cleaning up illicit drug lab dumps, abandoned used oil, chemicals at abandoned mine sites, and various hazardous materials on occupancy trespass sites.

Environmental Consequences

This section discusses impacts on public health and safety from proposed management actions of other resources and resource uses. See **Appendix C** for the analysis methodology and assumptions used.

Impacts Common to All Alternatives

BLM-administered lands designated as ROW exclusion would not allow for ROWs, while lands designated as ROW avoidance would allow ROWs and other land use authorizations only if they are compatible with existing land designations and management direction. Because construction, operation and maintenance of roads, pipelines, mines, energy-related facilities, transmission lines and similar projects come with associated safety risks, increasing the acreage of lands designated as ROW exclusion and, to a lesser extent ROW avoidance, would reduce the potential for public health and safety impacts.

Lands identified as suitable for disposal (i.e., lands deemed difficult or uneconomic to manage for public use due to low or no public access) would increase public health and safety risks once released because BLM management of those lands would no longer be provided. Lands identified as suitable for acquisition (i.e., lands contiguous with existing BLM lands or higher value resources) would reduce risks to public health and safety once acquired because BLM management actions would increase public accessibility, disseminate information to the public on safe practices or hazards, and provide more areas with opportunities for solitude and recreation opportunities.

Management of livestock grazing increases public health and safety risks due to potential interactions between livestock or guard/herding dogs and individuals that result in physical injury. Lands unavailable for livestock grazing lower public health and safety risks because interactions between livestock and the public would be avoided.

Lands open for consideration for locatable minerals, fluid and solid minerals leasing, and mineral materials exploration and development have the potential for present day and future short term and long-term public health and safety impacts as well as hazardous materials generation. Public health and safety impacts from minerals exploration and development activities could include, but not be limited to, improperly closed/abandoned minerals exploration excavations, increased truck and heavy equipment traffic on narrow area roadways; sediment-laden stormwater runoff into nearby streams affecting water quality; chemical releases from oil and gas well drilling and completion (such as., hydraulic fracturing additives and diesel fuel) and production equipment (for example, heater-treater/separator units and oil storage tanks); discharges of stormwater runoff that contacted toxic spoil/overburden from surface and underground mining operations; increased safety hazards from unstable high walls (surface mining) and ventilation shafts (underground mines); discharge of contaminated groundwater from underground mining operations; chemical releases from leach mining operations; and emissions from heavy equipment operations. The number of acres open to minerals development is proportional to the potential for short-term and long-

term, indirect public health and safety impacts, meaning, the greater the acreage available for mineral development, the higher the potential health and safety risk.

Lands open for consumptive recreational activities, such as the casual use of unmanned aerial system vehicle take offs and landings OHV use, unrestricted firearms shooting or recreational target shooting, user made mountain bike or OHV trail construction, and casual mining activities (i.e., gold panning) could increase public health and safety risks because of the potential for interactions with individuals pursuing non-consumptive recreational activities (for example, hiking, sightseeing, bird watching, picnicking, surfing, fishing) and/or water quality impacts. Some interactions between these user groups could be antagonistic in nature wherein individuals in one group do not think that the activities of the other group are acceptable in a particular area, while other interactions could be accidental in nature resulting in physical injury to individuals, such as from OHV or mountain bike collisions and stray bullets from firearms use.

To manage competing consumptive and non-consumptive resource uses, the BLM can designate SRMAs, ERMAs, and RMZs with the following purposes and characteristics:

- SRMAs are administrative units where the existing or proposed recreation opportunities and recreation setting characteristics are recognized for their unique value, importance and/or distinctiveness, especially as compared with other areas used for recreation. SRMAs are managed to protect and enhance a targeted set of activities, experiences, benefits, and desired recreation setting characteristics, and may be subdivided into RMZs to further delineate specific recreation opportunities. Within SRMAs, R&VS management is recognized as the predominant land management focus, where specific recreation opportunities and recreation setting characteristics are managed and protected on a long-term basis.
- SRMAs/RMZs must have measurable outcome-focused objectives. Management actions and allowable use decisions are required to: 1) sustain or enhance recreation objectives, 2) protect the desired recreation setting characteristics, and 3) constrain uses, including non-compatible recreation activities that are detrimental to meeting recreation or other critical resource objectives (e.g., cultural or threatened and endangered species). The SRMA/RMZ objectives must define the specific recreation opportunities (the activities, experiences, and benefits derived from those experiences) which become the focus of R&VS management.
- To achieve SRMA/RMZ objectives, management actions and allowable use decisions for R&VS and other programs are identified, as follows:
 - Within the R&VS Program. Identify decisions necessary to:
 - Facilitate the targeted recreation opportunities.
 - Maintain or enhance the desired physical, social, and operational recreation setting characteristics.
 - Address visitor health and safety, resource protection, and use and user conflicts (e.g., areas closed to target shooting, camping limits).
 - Address the type(s), activities and locations where special recreation permits would be issued, or not issued.
 - Within Other Programs. Establish terms, conditions, or special considerations for other resource programs necessary to achieve the SRMA/RMZ objective(s) (such as stipulations on mineral or other development, designations for all types and modes of travel, areas available

- for livestock grazing, or visual resource management classes). All actions must conform to applicable program policy, regulations, and valid existing rights.
- ERMAs are administrative units that require specific management consideration to address recreation use, demand or R&VS program investments. ERMAs are managed to support and sustain the principal recreation activities and the associated qualities and conditions of the ERMA and have measurable objectives. Management of ERMAs is commensurate with the management of other resources and resource uses. Supporting management actions and allowable use decisions must facilitate the visitors' ability to participate in outdoor recreation activities and protect the associated qualities and conditions. Non-compatible uses, including some recreation activities, may be restricted, or constrained to achieve interdisciplinary objectives.
 - The ERMA objectives must define the recreation activities and the associated qualities and conditions which become the focus for R&VS management. To achieve ERMA objectives, management actions and allowable land use decisions for R&VS and other programs must be identified as follows:
 - Within the R&VS Program. Identify decisions necessary to:
 - Facilitate visitor participation in the identified outdoor recreation activities.
 - Maintain particular recreation setting characteristics.
 - Address visitor health and safety, resource protection, and use and user conflicts (e.g., areas closed to target shooting, camping limits).
 - Address the type(s), activities, and locations where special recreation permits would be issued or not issued.
 - Within Other Programs: Establish terms, conditions, or special considerations for other resource programs necessary to achieve the ERMA objective (such as stipulations on mineral or other development, designations for all types and modes of travel, areas available for livestock grazing, or visual resource management classes). All actions must conform to applicable program policy, regulations, and valid existing rights.

Hazardous fuels treatments, including mechanical and manual fuels reduction, prescribed fire, chemical or biological treatments, and thinning and harvesting, would improve public safety by reducing an area's fire hazard. Key to identifying areas for hazardous fuels treatment, wildfire planning, and response procedures is delineation of the Wildland Urban Interface (WUI) which is generally defined as the transition zone between unoccupied land and human development and is the line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels (U.S. Fire Administration 2024). Three separate zones comprise the WUI: the Intermix Zone (which contains at least one housing unit per 40 acres in which vegetation occupies greater than 50 percent of the area), the Interface Zone (containing lands with at least one housing unit per 40 acres in which vegetation occupies less than 50 percent of the area), and the Influence Zone (consisting of lands with wildfire susceptible vegetation that is present up to 1.5 miles from the Interface Zone or the Intermix Zone). For the Planning Area, the general definition of the Interface Zone has been modified to be 200 feet from property lines within the WUI. The priority in this area is to reduce fire impacts to adjacent human development and to create pre-fire suppression features used in the suppression of wildfires within this zone. These management actions would reduce public health and safety risks from wildfires.

In addition to hazardous fuels treatments and management actions to reduce fire impacts and create fire suppression features, the following actions would also reduce public health and safety risks: disposal of isolated patch-work BLM-administered lands; roadway improvements to foothill communities to facilitate access to, and escape from those communities; modifications to BLM roadways and bridges to allow for the passage of fire trucks and heavy equipment; close/block-off unused roadways to prevent unauthorized access; clear hazard trees from utility line corridors; and, increase, law enforcement patrols in designated recreation areas (e.g., the Forks of Butte Creek, Sacramento River area, Elkhorn Ridge Wilderness Area, Chappie OHV area on Highland Ridge Road, Cline Gulch Road, French Gulch Road and Tom Green Road) to enforce restrictions currently in place and reduce instances of unauthorized and uncontrolled fires at these locations. These actions could also help protect other public land users that could become trapped, injured, or even killed during a wildfire event. The highest priority of the Wildland Fire Management program, which includes the fuels management, is to protect firefighters and the public.

Implementing management for the following resources are not discussed in detail, but could provide some benefits to public health and safety by limiting impacts from poor resource quality (such as improved air quality, adapting to climate change impacts [drought, fire frequency, and sea level rise], informing the public about safe practices or hazards, and providing more protected areas with opportunities for solitude and recreation): air quality; ACECs; caves and karst; climate change; coastal resources, cultural resources, education and interpretation, forestry; lands with wilderness characteristics; national and scenic trails; fish and wildlife; paleontology; riparian management areas; socioeconomics and environmental justice; soils; special status species; Tribal interests; vegetation; visual resources; water resources; wild and scenic rivers; and wilderness areas and wilderness study areas.

Alternative A

Public health and safety issues related to land use and conditions and hazardous materials are not mentioned in the Arcata FO 1992 RMP and the Redding FO 1993 RMP. As a result, impacts under this alternative would be similar to those described under *Impacts Common to all Alternatives* and all current conditions and trends would be expected to continue. However, public health and safety impacts would still occur from specific actions, as outlined below:

- The existing RMPs include a total of 400 acres of existing or potential ROW corridors, with 58,500 acres of ROW exclusion areas and 11,300 acres of avoidance areas identified, with 312,000 acres open to ROW authorization.
- Lands identified for disposal amount to 101,000 acres and lands identified for retention equals 281,400 acres.
- For livestock grazing, 195,300 acres are unavailable, while 186,900 acres are available. Although 186,900 acres would be available to livestock grazing, only 62,600 acres are expected to be in grazing allotments under Alternative A.
- Areas withdrawn from and open to locatable mineral development are 60,000 and 322,200 acres, respectively, with no acreage recommended for withdrawal from mineral entry; out of 295,100 acres of federal locatable subsurface mineral estate (split estate), 400 acres are withdrawn, and 294,700 acres are open for development.
- Out of 382,200 acres identified for surface fluid and nonenergy minerals leasing, 61,300 acres are closed, 19,300 acres are open subject to no surface occupancy, and 301,600 acres are open to leasing under standard terms and conditions. Of the 295,100 acres identified for subsurface

mineral estate (split estate) fluid and nonenergy mineral leasing, 400 acres are closed to mineral leasing, 300 acres are open to mineral leasing with no surface occupancy, and 294,400 acres are open to mineral leasing under standard terms and conditions.

- For surface mineral materials, 81,800 acres are closed and 300,400 are open to development, while 800 acres are open and 294,300 acres are closed to subsurface mineral estate (split estate) minerals development.
- For recreation resources, 3 SRMAs are identified for a total of 40,190 acres, but no ERMAs or RMZs are identified.
- A total of 382,200 acres of lands are identified as non-WUI, while no acreages are identified as the WUI.

Alternative B

This alternative includes the same acreage (400) of existing or potential ROW corridors as Alternative A, with ROW exclusion and avoidance areas increased to 135,100 and 135,900 acres, respectively, and areas open to ROW authorization are substantially reduced to 110,800 acres. The increased acreage for exclusion and avoidance areas and reduced acreage open to ROW authorization indicates that risks to public health and safety will be reduced because project development and corresponding impacts in those areas cannot proceed (i.e., in exclusion areas) or only proceed if compatible with existing land use designations and after NEPA analysis (i.e., avoidance areas).

Of the 382,200 acres of available lands, lands identified for disposal were greatly reduced to 6,000 acres and lands identified for retention were greatly increased to 376,500 acres, which indicates that risks to public health and safety would increase because the isolated patches of BLM-administered lands that have identified hazards, such as hazardous materials releases, inappropriate land use, illegal trespassing, water diversions and the like, or tracts not routinely visited by the BLM, will be retained.

Lands unavailable for livestock grazing are reduced to 149,400 acres, while lands available for livestock grazing are increased to 232,800 acres. Although 232,800 acres would be available to livestock grazing, only 62,000 acres are expected to be in grazing allotments under Alternative B. These changes would result in a slight increase in public health and safety impacts because of the increased likelihood of livestock being present and the potential for individual interactions and the corresponding increased potential for physical injury to resource users. There is also the potential for an increased interactions between livestock and dogs as well as the potential for stray bullets hitting livestock in areas where livestock and recreational target shooting overlap.

For locatable minerals, the acreage withdrawn from and open to locatable mineral entry remains the same as Alternative A at 60,000 acres and 322,200 acres, respectively; the acreage recommended for withdrawal is increased to 104,700 acres. Increasing the acreage recommended for withdrawal could reduce future public health and safety risks because of the reduced potential for hazardous materials releases associated with locatable minerals development if a withdrawal was enacted. The acreage withdrawn from and open to locatable mineral entry would remain the same and the risks to public health and safety would remain unchanged. For subsurface mineral estate (split estate) locatable minerals, the acreage withdrawn from entry and open to entry would remain the same as Alternative A at 400 acres and 294,700 acres, respectively.

For surface fluid and nonenergy mineral leasing, an increase in the acreage closed to mineral leasing to 187,800 acres, an increase in the acreage open to mineral leasing with no surface occupancy to 33,100 acres, and the reduction in the acreage open to mineral leasing under standard terms and conditions to 161,300 acres would reduce the long term indirect risks to public health and safety because there would be less opportunity for releases of hazardous materials from development of these resources. For subsurface mineral estate (split estate) fluid and nonenergy mineral leasing, the increase in the area closed to mineral leasing to 3,000 acres and the reduction in the area open to mineral leasing subject to standard terms and conditions to 291,600 acres would reduce the impacts on public health and safety because there would be less opportunity for releases of hazardous materials from development of these resources. The increase in areas open to mineral leasing with no surface occupancy to 500 acres would have a negligible impact on public health and safety.

For surface minerals materials development, the substantial increase in the acreage closed to development to 206,700 acres, with a corresponding reduction in the acreage open to leasing, subject to standard terms and conditions, to 175,500 acres would reduce the potential for public health and safety impacts because there would be less area available for leasing and thus, less potential for hazardous materials releases, including hazardous air pollutants. For subsurface mineral estate (split estate) mineral materials development, the minor increase in the area closed to development to 1,300 acres and the corresponding reduction to areas open to development to 293,800 acres indicates that risks to public health and safety would remain essentially the same or decrease.

Removal of three SRMAs for a total of 40,190 acres and the addition of 1 new SRMA for a total of 23,800 acres, 4 new ERMAs for 21,790 acres, and 4 new RMZs for a total of 9,930 acres would reduce public health and safety risks overall because of the development and enforcement of area use guidelines and regulations which would help to prevent antagonistic and/or accidental interactions between consumptive and non-consumptive resource users.

For Alternative B, 28,000 acres was identified as WUI (including the Intermix Zone and the Influence Zone), with 16,600 acres identified as WUI in essential connectivity corridors, which are habitat connectivity corridors that are ranked from 0-50 according to the greatest ease of wildlife movement (for a total of 44,600 acres). The Interface Zone, which is defined as lands within 200 feet of property lines is broken out separately from WUI lands because different management actions may be needed to address wildfire response, suppression and resiliency. The remainder of the Planning Area (321,500 acres) was identified as non-WUI lands. Vegetation treatments to reduce hazardous fuels and undesirable vegetation will improve wildland health and fire resiliency and reduce the risk of wildfire. In conjunction with infrastructure management actions to close/block off unused roadways to prevent unauthorized entry, improve roadways to provide access to and travel from foothills communities, improve roadways and bridges to accommodate fire trucks and heavy equipment, and require ROW lease holders to clear hazard trees will greatly reduce impacts on public health and safety from wildfires.

This alternative would reduce public health and safety risks due to increased ROW exclusion and avoidance areas that would preclude development (exclusion areas) or from changes in the acreages unavailable and open for fluid and nonenergy, and mineral materials development; and with the addition of the new SRMAs, ERMAs, and RMZs and associated guidelines and regulations development and enforcement; however, elimination of the Samoa Dunes SRMA, changes in the lands identified for disposal

and retention, increases in livestock grazing acreages, and the failure to address firearms and OHV use would increase the risks to public health and safety somewhat.

Alternative C

This alternative includes the same acreage (400 acres) of existing or potential ROW corridors as Alternative A. ROW exclusion and avoidance areas increased to 94,100 and 166,400 acres, respectively, and areas open to ROW authorization are reduced to 121,300 acres. The increased acreage for exclusion and avoidance areas and reduced acreage open to ROW authorization indicates that impacts on public health and safety will be reduced because project development and corresponding impacts in those areas cannot proceed (i.e., in exclusion areas) or only proceed if compatible with existing land use designations and after NEPA analysis (i.e., avoidance areas).

Lands identified for disposal were reduced to 49,400 acres and lands identified for retention were increased to 333,100 acres, which indicates that risks to public health and safety would increase because the areas of isolated patches of BLM-administered land that have identified hazards, such as hazardous materials releases, inappropriate land use, illegal trespassing, water diversions and the like, or tracts that are not routinely visited by BLM will be retained.

With the reduction in areas unavailable for livestock grazing to 110,400 acres and the corresponding increase in areas available for livestock grazing to 271,800 acres, public health and safety risks would be increased because of increases in the likelihood of livestock and resource user interactions and the potential for physical injury. Although 271,800 acres would be available to livestock grazing, only 64,500 acres are expected to be in grazing allotments under Alternative C. Therefore, impacts would be limited to those areas within active allotments.

For locatable minerals, the acreage withdrawn from and open to locatable minerals entry have remained the same at 60,000 acres and 322,200 acres, respectively; the acreage recommended for withdrawal from locatable minerals entry has increased to 56,100 acres. An increase in the acreage recommended for withdrawal from locatable minerals entry could reduce public health and safety risks from locatable minerals development and associated hazardous materials releases if a withdrawal was enacted. The acreage withdrawn from and open to locatable mineral entry would remain the same and the risks to public health and safety would remain unchanged. For subsurface mineral estate (split estate) locatable minerals, the acreage withdrawn from entry and open to entry would remain the same as Alternative A at 400 acres and 294,700 acres, respectively so risks to public health and safety would remain the same or increase.

For fluid and nonenergy mineral leasing, the increase in the acreage closed to mineral leasing to 117,700 acres, the increase in the acreage open to mineral leasing with no surface occupancy to 53,400 acres, and the reduction in the acreage open to mineral leasing under standard terms and conditions to 211,100 acres would greatly reduce the long term indirect risks to public health and safety because there would be less opportunity for releases of hazardous materials from development of these resources. For subsurface mineral estate (split estate) fluid and nonenergy mineral leasing, an increase in the area closed to mineral leasing to 800 acres and the reduction to the area open to mineral leases to 293,800 acres would reduce the risks to public health and safety because there would be less opportunity for releases of hazardous materials from development of these resources. Increases in areas open to mineral leasing with no surface occupancy to 500 acres would only increase these risks.

For surface mineral materials development, the increase in the acreage closed to development to 167,800 acres, with the corresponding reduction in the acreage open to development to 214,400 acres, would reduce public health and safety risks or remain essentially unchanged because the potential for hazardous materials releases, including hazardous air pollutants, would be about the same. For subsurface (split estate) mineral materials, the increase in the acreage closed to development to 1,600 acres, with the corresponding reduction in the acreage open to development to 293,500 acres, would reduce public health and safety risks or they would remain essentially unchanged because the potential for hazardous materials releases, including hazardous air pollutants, would be about the same.

Removal of two SRMAs for a total of 40,000 acres, the continuance of one SRMA of 190 acres, and the addition of 3 new SRMAs for 41,600 acres, 8 new ERMAs for 45,980 acres, and 4 new RMZs for 9,930 acres would reduce public health and safety risks because of the development and enforcement of area use guidelines and regulations which would help to prevent antagonistic and/or accidental interactions between consumptive and non-consumptive resource users.

For Alternative C, the WUI consists of 44,600 acres which includes lands in the Intermix Zone and the Influence Zone as well as WUI lands in the essential connectivity corridor, with 16,100 acres broken out separately as lands in the Interface Zone. The remainder of the Planning Area (321,500 acres) was identified as non-WUI lands. Vegetation treatments to reduce hazardous fuels and undesirable vegetation will improve wildland health and fire resiliency and reduce the risk of wildfire. In conjunction with infrastructure management actions to close/block off unused roadways to prevent unauthorized entry, improve roadways to provide access to and travel from foothills communities, improve roadways and bridges to accommodate fire trucks and heavy equipment, and require ROW lease holders to clear hazard trees will greatly reduce impacts on public health and safety from wildfires.

This alternative would reduce public health and safety impacts due to increases in ROW exclusion and avoidance areas; changes to fluid and nonenergy, and mineral materials development; reinstatement of one SRMA and the addition of new SRMAs, ERMAs, and RMZs with guidelines and regulations development and enforcement; however, with the changes in lands and realty tenure and increased livestock grazing, public health and safety risks would be increased.

Alternative D

This alternative includes the same acreage of existing or potential ROW corridors at 400 acres, with ROW exclusion and avoidance areas increased to 108,100 acres and 165,200 acres, respectively, and areas open to ROW authorization are substantially reduced to 108,600 acres. which indicates that risks to public health and safety will be reduced because project development and corresponding impacts in those areas could not proceed (exclusion areas) or must proceed under NEPA review guidance.

The lands identified for disposal were reduced to 5,900 acres and lands identified for retention were increased to 376,600 acres, which indicates that risks to public health and safety would increase because the acreages of isolated patches of BLM-administered lands that have had identified hazards, such as hazardous materials releases, inappropriate land use, illegal trespassing, water diversions and the like, or tracts that are not routinely visited by BLM, will be retained.

The reduction in areas unavailable for livestock grazing to 193,600 acres and the corresponding increase in areas available for livestock grazing to 188,600 acres indicates that risks or impacts on public health and

safety would increase because of the likelihood of increased livestock-resource user interactions and the increased potential for physical injury. Although 188,600 acres would be available to livestock grazing, only 59,000 acres are expected to be in grazing allotments under Alternative D. Therefore, impacts would be limited to those areas within active allotments.

For locatable minerals, the areas withdrawn from and open to locatable mineral entry remains the same at 60,000 acres and 322,200 acres, respectively. An increase in the acreage recommended for withdrawal to 86,600 acres could reduce public health and safety risks from locatable minerals development and associated hazardous materials releases if a withdrawal were enacted. The acreage withdrawn from and open to locatable mineral entry would remain the same and the risks to public health and safety would remain unchanged. For subsurface mineral estate (split estate) locatable minerals, the acreage withdrawn from entry and open to entry would remain the same as Alternative A at 400 acres and 294,700 acres, respectively. Risks to public health and safety would remain essentially the same because the potential for releases of hazardous materials is not appreciably different than the current situation.

For surface fluid and nonenergy mineral leasing, increases in the acreage closed to mineral leasing to 164,200 acres and open to mineral leasing with no surface occupancy to 87,900 acres, plus a reduction in the acreage open to mineral leasing under standard terms and conditions to 130,100 acres would greatly reduce the long-term indirect impacts on public health and safety because there would be less opportunity for releases of hazardous materials from development of these resources.

For subsurface mineral estate (split estate) fluid and nonenergy mineral leasing, the minor increases in the area closed to mineral leasing to 2,800 acres and open to mineral leasing with no surface occupancy to 14,800 acres, in conjunction with the minor reduction to the area open to mineral leasing subject to standard terms and conditions to 277,500 acres indicates that risks to public health and safety would remain essentially the same or increase slightly because opportunities for releases of hazardous materials from development of these resources would remain essentially the same.

For surface mineral materials development, an increase in the acreage closed to development to 209,600 acres, with a corresponding reduction in the acreage open to development to 172,600 acres would reduce public health and safety impacts because there would be less potential for hazardous materials releases, including emissions of hazardous air pollutants. For subsurface mineral estate (split estate) mineral materials development, the increase in acreage closed to mineral materials development to 5,600 acres and the reduction of those open to development to 289,500 acres would have little impact on current public health and safety risks and hazardous materials generation.

The removal of two SRMAs for a total of 40,000 acres, continuance of one SRMA for 190 acres, addition of three new SRMAs for 41,600 acres, eight new ERMAs for 45,880 acres, and four new RMZs for 10,430 acres would reduce public health and safety risks overall because of the development and enforcement of area use guidelines and regulations which would help to prevent antagonistic and/or accidental interactions between consumptive and non-consumptive resource users.

For this alternative, total WUI lands (44,600 acres), Interface Zone lands (16,100 acres), and non-WUI lands (321,500 acres) are the same as those for Alternative C. Vegetation treatments to reduce hazardous fuels and undesirable vegetation will improve wildland health and fire resiliency and reduce the risk of wildfire. In conjunction with infrastructure management actions to close/block off unused roadways to prevent unauthorized entry, improve roadways to provide access to and travel from foothills communities,

improve roadways and bridges to accommodate fire trucks and heavy equipment, and require ROW lease holders to clear hazard trees will greatly reduce impacts on public health and safety from wildfires.

This alternative would greatly reduce public health and safety impacts due to increased ROW exclusion and avoidance areas; from changes in the acreages for fluid and nonenergy, and mineral materials exploration and development; and with the addition of new SRMAs, new ERMA's, and new RMZs with corresponding guidelines and regulations development and enforcement; however, the risks associated with disposal and retention of BLM-administered lands and livestock grazing would increase.

Cumulative Impacts

Past and present actions that have affected public health and safety include locatable, fluid, and mineral materials development; livestock grazing; lands and realty disposal and retention; ROW grants; recreation and visitor use; and wildfire.

For locatable minerals, impacts on public health and safety in the Arcata FO are not likely to increase because there has been no noteworthy active exploration or mining (notices and plans of operations) of locatable minerals on BLM-administered lands for over 25 years. Within the Redding FO, some minor impacts on public health and safety may occur because there are currently 482 active mining claims, but most of these claims have little, mineral development occurring on them. Currently, the Redding FO has three authorized plans of operations and two pending plans of operation, but over the last 25 years, there have been 10 plans of operations and 151 notices to mine that have been abandoned and closed. Any interest in hardrock minerals in the planning area would likely be for gold or base metals and would be dependent on increases in metal prices and the regulatory restrictions placed on exploration and mining.

Impacts on public health and safety from development of fluid and nonenergy minerals leasing are not likely to increase in the future because: 1) 16 gas fields have been identified in the planning area (5 have been abandoned); 2) review of LR-2000 data shows that there are no leases or applications for oil and gas leases on BLM-administered land or mineral estate in the planning area, and 3) no leases have been applied for in the last 20+ years. And, due to the lack of or minimal resource potential, it is unlikely that geothermal energy will be developed anywhere within the planning area on BLM-administered lands or mineral estate in the next 20 years. Future demand for nonenergy leasable minerals will likely increase over time in parts of California and the West, but this is only anticipated to result in little, if any, activity in the planning area.

For mineral materials, the trend over the past 20 years has been an increase in the number and size of free use permits (FUPs) and a decreasing demand for sales contracts. Within the Arcata FO and the Redding FO there have been a total of 20 FUPs authorized, 7 of which are still active and 15 non-competitive sale contracts, none of which is still authorized, and all have been closed. Thus, impacts on public health and safety over the life of the plan are expected to be negligible.

For livestock grazing, there are many small, isolated tracts of BLM-administered land that may or may not contain suitable vegetation for livestock grazing and future trends in grazing depend on environmental factors, such as water availability and demand. Therefore, it is unknown if current grazing practices will continue or change, but the increased acreage for livestock grazing indicates that some impacts on public health and safety from increased livestock grazing will occur.

Regarding lands and realty tenure transactions, 3,210 acres have been patented in 43 separate actions between the Arcata FO and the Redding FO, and the need for further R&PP Act patents and leases should

be greatly reduced as basic community needs have been met. While there is the potential for new applications for recreational target shooting areas/shooting ranges, it is expected that the needs for patents and leases will be minimal and thus, impacts on public health and safety from new patents and leases are expected to be minimal.

Increased ROW exclusion and avoidance areas and reduced land open for ROW authorizations will help constrain future development, but the Arcata FO and Redding FO combined, typically receive 30 to 40 new ROW applications annually, of which approximately 20 are for linear ROWs for roadways, installation of internet broadband lines, and undergrounding of electrical transmission lines. It is likely that improvements to major transportation infrastructure will be ongoing, which may include bridge replacements and fixing roads and highways, while ROW maintenance activities, such as clearing hazard trees and closing or blocking off unused roadways, will help reduce the potential for wildland fires and thereby lower the risks to public health and safety.

The primary recreational activities in the NCIP planning area include hiking, backpacking, mountain biking, horseback riding, rock climbing, riding OHVs, hunting, fishing, panning for gold, whitewater rafting, kayaking, rowing, surfing, hang-gliding, camping, sightseeing, photography, wildlife viewing, and historic site visitation. It is expected that recreation use levels will increase in the planning area on BLM and non-BLM-administered lands and the designation of new SRMAs, ERMAs, and RMZs, along with development and enforcement of corresponding regulations, will reduce the cumulative impacts on public health and safety between consumptive and non-consumptive resource users, especially in the areas of firearms use, mountain biking, and OHV travel, and will reduce occurrences of unauthorized camping, bonfires, and illegal hazardous materials dumps. However, with the increased use of firearms and the designation of new shooting ranges, as well as the increased use of OHVs with internal combustion engines, generation and spills of hazardous materials, such as lead bullets and shot, fuel and lubricant spills and leaks, and engine emissions will likely increase as well.

Vegetation treatments that include manual, mechanical, biological, and chemical treatments and prescribed burns to reduce hazardous fuels and undesirable vegetation have been used in the past in the planning area and will likely continue in the future. There are currently multiple wildland fire management projects in the Arcata FO and the Redding FO whose goals are to reduce fuel loading, protect critical infrastructure, improve fire resiliency, wildland health treatments, and reduce the potential for severe wildfires especially in the WUI and other areas where increased fuel loading increases the risk of wildland fire. These management actions will help reduce public health and safety risks from wildfires by not only reducing the likelihood of wildland fires but by improving the resiliency of the area to withstand wildfires and by providing greater access to and escape from active wildfires.

D.6 SUPPORT

D.6.1 Interpretation and Environmental Education

Issue Statements

- How would the alternatives affect interpretation and environmental education?

Affected Environment

Interpretation and environmental education promote a connection between visitors and the natural, cultural, and recreational resources within the NCIP planning area. Additionally, interpretation and environmental education aim to develop an understanding of the resource values and stewardship goals

in operation in public land management, for the continued enjoyment of public lands. Along with interpretation, environmental education serves as an additional mechanism through which the BLM enhances public appreciation of its resources and promotes scientific learning through hands-on experiences. Education and interpretation are important tools in addressing user conflicts resulting from overuse amid multiple user groups, including hikers, equestrian users, mountain bikers, hunters, and motorized vehicle users. The BLM can promote interpretation and environmental education in a wide variety of ways that support the goals and objectives across all managed resources. The BLM recognizes the diversity of social and ethnic backgrounds as well as the abilities of visitors to the planning area.

The Arcata and Redding FOs are recognized for their unique natural and cultural resource values, which provide ample opportunities for interpretative programming, environmental education, and research in the planning area. Current interpretive programming includes a focus on high-profile and multiuse recreational areas that are frequented by many local and nonlocal user groups. Such services are designed to benefit all visitors to the planning area, including residents, tourists, researchers, students, and other groups. This is especially true where listed species, sensitive cultural resources, and sensitive environmental habitat also occur. These programs are offered publicly in coordination with relevant interest groups, partners, agencies, and community members.

Signage is part of interpretive programming intended to connect visitors to public lands through informational kiosks, wayside exhibits, and other types of signs (directional signs, road markers, historical signs, and phenological signs). The intent of the signage is to help inform the public about natural and cultural resources, share the story of the BLM and its multiple-use management of public lands, and modify future behavior of visitors. Currently, the Arcata and Redding FOs have interpretation signage in several high-use management areas, but not all.

Environmental education programming includes Hands on the Land (HOL) field classrooms that connect students, teachers, families, and volunteers to public lands. HOL field classrooms present unique opportunities to collaborate with local partners, schools, and environmental educators at each site to provide hands-on experiences using natural and cultural settings to bring classroom learning to the outdoors. The place-based learning curriculum at HOL field classrooms aligns with core learning standards involving areas of study, including science, mathematics, technology, engineering, and service learning. It also aligns with career pathway opportunities. In addition to HOL field classes, several field classrooms and learning sites exist in the planning area, facilitating educational programs that connect local schools to public lands through standard classroom presentations and field trips outside the classroom. The Arcata FO has one HOL field classroom while the Redding FO has two HOL field classrooms. Both FOs utilize other field sites for developed educational programs and place-based curriculum in specific management areas.

At present, the Arcata and Redding FOs work with federal, state, county, and other agencies; nongovernmental organizations; colleges and universities; museums; other educational institutions; and individual researchers on a wide variety of research projects supporting the use of public lands for scientific study as well as social and recreation-based actions. The results of such endeavors provide critical data that can be used to assess the effectiveness of public land management and help identify ways to improve it.

Several RNAs were designated under the 1992 Arcata RMP and the 1993 Redding RMP. These areas continue to serve as important locations where scientific and research use is high. The planning area

contains 10 designated RNAs; all of these are also designated as ACECs. A detailed discussion on these specially designated areas can be found in the ACEC section of this document (see **Section D.4.1**).

Current and ongoing research projects within the planning area include research on Baker cypress in the Baker Cypress RNA/ACEC (Baker Cypress Stewardship Area), the National Phenology Network citizen science project at several sites within the Arcata FO administrative boundaries, oak/woodland restoration research in the Weaverville Community Forest (a BLM Forestry Stewardship project), and research on the threatened western snowy plovers. Additionally, archaeological and climate change studies continue to be conducted in the planning area. Also, limited individual employee research is performed on a variety of topics, particularly focusing on the natural and cultural resource fields, as well as recreation.

Environmental Consequences

Comments received during public scoping, as well as the effects analyses for other resources, indicate that public perception relative to interpretation and environmental education also includes research endeavors and other opportunities to advance scientific understanding of the planning area's cultural and natural values, which can be used to improve and monitor the effectiveness of public land management. This section summarizes the projected effects on interpretation, environmental education, and research associated with the alternatives.

Impacts Common to All Alternatives

Multiple recreational uses and special land designations for the majority of BLM-administered lands increase the need for interpretation and environmental education programs that can address the complex issues of the planning area. Common to all alternatives, the BLM would continue to develop interpretative and educational programs to help the public understand its role in the ecosystem and facilitate connection, which can lead to a lifetime of stewardship and preservation of public lands in their backyard. Likewise, the BLM would implement interpretive programming, including through signage (informational kiosks, wayside exhibits, and other signs), participation and outreach at local events, service learning, guided activities, films, websites, and social media. Environmental education programming would continue to benefit local partners and schools, and the BLM would maintain the one HOL field classroom in the Arcata FO, the two HOL field classrooms in the Redding FO, and other field classrooms and learning sites in the planning area.

Under all alternatives, management of resources would continue to be guided by BLM regulations and policies, as well as federal and state laws (where applicable). Implementing management actions for resources would have the potential to affect interpretation, environmental education, and research. Under all alternatives, interpretation, environmental education, and research would be afforded in the planning area where enhanced natural and cultural values provide such opportunities, and these activities are able to be conducted in accordance with desired future conditions and program goals and objectives for each managed resource and/or resource area.

Under all alternatives, the BLM would continue to acquire public access for recreational and educational uses to provide opportunities for public interpretation. Interpretive and educational programs would focus on high-profile and multiuse recreational areas. Management within ACECs and in specially designated recreational management areas would further yield opportunities for interpretation, environmental education, and research related to natural and cultural values in the planning area. Interpretive and educational programs would remain in high demand at local schools; the BLM would rely on the assistance

of local partners in the development and performance of these opportunities. Science and research activities would be maintained at current levels in terms of demand and implementation of associated studies.

Management of cultural resources would be conducted in a manner that protects the quality of scientific values that, where appropriate, preserve and protect certain BLM-administered lands in their natural condition. Public education, research, the excavation of archaeological sites, and involvement of interested parties (principally Tribal groups) would be required to conform with applicable laws and regulations, including the Archaeological Resources Protection Act. The BLM would continue to increase interpretation and protection of key cultural and natural resources for the public. Also, prehistoric and historical archaeological resources would continue to be conserved and protected.

Alternative A

Under Alternative A, the nature of effects on interpretation, environmental education, and research would be the same as described under *Impacts Common to All Alternatives*. Alternative A would continue the management actions guided by the 1992 Arcata RMP and the 1993 Redding RMP. These planning documents do not identify any specific management framework for education, interpretation, and research. Interpretation and environmental education would continue to be administered independently as part of individual resource management programs. There would be no comprehensive management of interpretation and environmental education programming or research endeavors in the planning area.

Under this alternative, designated ACECs would continue to provide 54,600 acres for scientific research and study as well as interpretation and environmental education, as would 40,190 acres of lands designated within SRMAs. No ERMAs or RMZs would be designated under Alternative A.

Alternative B

Under this alternative, the BLM would develop a comprehensive interpretive plan or plans for the decision area. The interpretive plan(s) would follow BLM guidelines and define the BLM's overall interpretation and education vision, goals, themes, strategies, and opportunities. The plan would include a long-range implementation strategy that includes partnership development, staffing needs, and program costs. It would also identify outreach activities that would foster partnership development and public knowledge of BLM policy and proper use of BLM-administered lands, while promoting public benefits from support programs (for example, Wounded Warrior and HOL). Through the interpretive plan, there would be an increased awareness of local and regional cultural and natural values, and their protection and study needs.

The BLM has identified benefits that would be gained from interpretation and environmental education through the implementation of a comprehensive interpretive plan. These include information benefits through increased knowledge and understanding of resources; applied benefits through the application of learning from one resource and applying that knowledge to understanding another/other resource(s); sociocultural benefits that foster a greater appreciation of multicultural perspectives; economic benefits that create a tangible gain for community experience through enhanced awareness; recreation and inspirational benefits from an increased sense of place and connectedness; educational benefits through enhanced comprehension of the sciences and history through application and visitation of BLM-administered lands; and intra- and intergovernmental benefits realized through the improvements of relations between Tribal, local, state, and federal entities.

The BLM would identify key cultural, historic, and natural resources that would be interpreted and protected for the public. Priorities for interpretation would be sites of high public interest that receive high visitation or are at risk of damage (for example, Swasey ACEC and RMZ). The goal would be to decrease resource damage and thereby reduce visitor-related management costs. Interpretive emphasis and environmental education programs in these high visitation areas or areas with special designation would be continued. The BLM would facilitate research and educational uses throughout the planning area and aim to develop digital education and interpretation (for example, electronic maps or applications for smartphones and tablets), as well as traditional signs and kiosks for both existing sites and new sites identified as part of the comprehensive interpretive plan to be implemented.

The BLM would prioritize areas for survey that contain sensitive and/or vulnerable cultural resources, particularly in areas where scientific interest for new or continued research exists. The BLM would prioritize key cultural sites for protection, scientific study, or reclamation/restoration, and the BLM would manage visitation to those sites, as needed, to protect site integrity. Cultural sites would only be used for interpretation if such use would not impact the integrity of those sites or conflict with Tribal values. Those cultural sites with Tribal affiliation would be interpreted in collaboration with Tribes. The BLM would collaborate with Tribes regarding research in areas of special cultural and natural significance. Also, the BLM would work with Tribes to gather Traditional Ecological Knowledge relative to places within the planning area to provide a long-term perspective in land use management to incorporate into future land use planning efforts.

Under this alternative, the BLM would also promote the understanding of the role of fire in ecosystems in the planning area, educating the public on how both fire prevention and the use of fire as a management tool are important for resources in the planning area. There would also be increased economic opportunities for members of Tribal communities to be educated in wildland fire management. The use of citizen science on BLM-administered lands would be promoted to support education and site- or resource-specific monitoring goals. Research into forest resiliency and ecosystem dynamics resulting from climate change would be prioritized.

Opportunities to interpret unique coastal resources would be prioritized through collaboration with adjacent landowners and partners, which would in turn increase awareness and public knowledge of the detriments of disturbances to marine birds and mammals. Easement access to BLM-administered lands (where deemed appropriate and possible) that are locked or surrounded by private lands would be provided for the purpose of educational opportunities and scientific study in the fields of archaeology and paleontology. Public education programs to assist trail users in caring for the trail systems would be promoted under this alternative. Additionally, the BLM would also pursue integrated interpretation of restoration activities and historical mining on the Trinity River, including installation of signage, in coordination with Tribes.

The BLM would support RMAs and social equity through interpretive products and programs. Also, the BLM would provide the public information regarding the location of accessible recreation opportunities. This would include providing free or low-cost, disability-inclusive, facilitated experience programs that introduce people to outdoor recreation in a safe and supportive environment throughout all RMAs. Visitor services information and interpretive materials would be developed in multiple languages (including braille) and include adaptive management to promote understanding of the diversity in outdoor recreation styles among different demographic populations.

The BLM would also facilitate research and educational uses throughout the planning area using assistance agreements and other means (for example, permits) for research for key heritage resource areas and natural resources. This would include working with government agencies, Tribes, educational institutions, and nonprofits to conduct research on wildlife populations, habitat conditions, and other environmental factors. The BLM would also promote research on serpentine soils relative to their hydrological properties that may be critical to providing springs and seeps for aquatic systems during late summer or periods of drought. The BLM would also use watershed monitoring programs to educate the public. The BLM would also collaborate in academic research related to carbon dynamics on the landscape relative to climate change.

Natural and cultural collections would be made available (as appropriate) to scientists and Tribes or made available to the appropriate systems for research opportunities. The BLM would ensure data are available for agencies and partners (including Tribes) to assist in collaborative management (for example, nonnative and invasive species tracking). The BLM would authorize research and monitoring proposals under 43 CFR 2920 (Leases, Permits, and Easements) through the issuance of a special-use permit. These permits would consider several factors in evaluating the research proposals. The primary factor for approval would be that the research would contribute useful information to an increased understanding of the resources—thereby contributing to effective management and/or interpretation of those resources—or that the research would address problems or questions of importance to science or society, showing promise of making an important contribution to such knowledge.

Under Alternative B, management actions specific to cultural resources that would impact interpretation, environmental education, and research opportunities include prioritizing important cultural sites for protection, scientific study, or reclamation/restoration. The BLM would manage visitation to those sites, as needed, to protect site integrity. If monitoring indicates damage to site integrity from visitation, the BLM would implement restrictions, as necessary, to protect the resource. This could include measures such as permitted access or docent-led tours only. If damage continues, these sites would be closed to public access, which would eliminate interpretative and educational opportunities at these locations.

Under Alternative B, the 10 existing RNAs designated under the existing RMPs for the decision area would no longer retain the RNA designation; however, this would not result in any impacts on interpretation, environmental education, or research because they would retain their ACEC designations. Compared with Alternative A, this alternative would result in an additional 34,220 acres of land through the expansion of existing ACECs, the establishment of new ACECs, or the combinations thereof. This expansion would provide additional interpretation, environmental education, and research opportunities in these specially designated areas because they encompass suitable sites, landscapes, and areas with access to particular resources for specific research and educational activities. Additionally, under this alternative, an interpretive or education center could be established for the newly combined 5,964-acre Swasey Drive Clear Creek Greenway ACEC to assist the public in understanding the relevance and importance of the ACEC/RMZ. The BLM would collaborate with the Tribes on development and presentation of materials at this center.

Under this alternative, a total of 5,400 more acres of land would be designated as SRMAs and newly created ERMAs, compared with under Alternative A. Additionally, there would be 10,430 acres of newly designated RMZs, compared with none under Alternative A. This added acreage under SRMAs, ERMAs,

and RMZs would provide for increased opportunities for stewardship for natural and cultural resources through the development of interpretive educational materials and signage.

Alternative C

Under Alternative C, the effects on interpretation, environmental education, and research would be the same as described under *Impacts Common to All Alternatives* as well as those discussed under Alternative B. This is because the comprehensive interpretation plan would be developed under all the action alternatives. Under Alternative C, there are additional management actions taken specific to cultural resources that would increase opportunities for interpretation and environmental education, compared with Alternatives A and B. Sites identified for education and interpretation to support heritage tourism would have a strategy to “harden the site” to protect them. The BLM would work with interpretive staff and Tribal partners to enhance and develop interpretive opportunities for visitors to these sites. Interpretive materials would include information for the public emphasizing the importance of cultural resources and the appropriate way to enjoy those resources without damaging them.

The BLM would develop motorized and nonmotorized cultural interpretive spur destinations and loops, as well as use signage (where appropriate) to inform visitors of the range of information regarding the lifeways of local pre-colonial human communities. The BLM would install kiosks, where appropriate, to educate the public about the area’s history and ethnography and to promote proper stewardship of heritage resources. The BLM would develop interpretive opportunities at priority sites (for example, creating an interpretive trail and elements along Butte Creek Trail to highlight the mining history and operations in Butte County); complete restoration projects to protect historic sites; present the Trinity River’s gold mining history to the public at select locations; develop a presentation of the water ditches sources, systems, locations, holding ponds, and others in the Clear Creek area; and retain the salmon/heritage information boards at the Gorge Overlook. The BLM would also retain or enhance interpretive signs and materials at the Samoa Dunes Recreation Area pertaining to the various cultural themes represented there.

Relative to impacts within ACECs, under Alternative C, there would be 12,170 fewer acres of designated ACEC as compared with Alternative A. This would effectively reduce the number of acres available for interpretation, environmental education, and research opportunities in the decision area. Although the Swasey Drive Clear Creek Greenway ACEC would not be designated under Alternative C, the interpretive and education center could still be established in the existing 468-acre Swasey Drive Area ACEC; therefore, the impacts would be the same as those described under Alternative B.

With regard to SRMAs, ERMAs, and RMZs, which again provide opportunities for natural and cultural resources stewardship and the development of interpretive educational materials and signage, an additional 48,400 acres would be designated as SRMAs and ERMAs, as compared with Alternative A.

Alternative D

Under Alternative D, the nature of effects on interpretation, environmental education, and research would be the same as those described under *Impacts Common to All Alternatives* as well as those described under Alternative B. This is because the comprehensive interpretation plan would be developed under all the action alternatives. The exception under this alternative is that there would be additional management actions implemented under this alternative for cultural resources that would affect interpretative and educational opportunities. Effects on cultural resources relative to interpretation and environmental

education under Alternative D would be the same as those described for Alternative C, except these management actions would include a greater number of cultural sites that experience heavy visitation. These sites include the Boswell Mine, Clear Creek and Princess Ditches, Horsetown, Ponderosa Way (and the associated bridges and structures), the Sacramento River Rail Trail, Baghdad Cemetery, Pioneer Baby Grave, the Yreka Trail, the Lost Emigrant Trail, the Swasey Archaeological District, the Forks of Butte Archaeological District, the West Weaver Creek Mining Landscape, the Humboldt Harbor Lighthouse, and the Samoa Dunes World War II bunkers. For all other sites, the effects would be the same as described under Alternative B.

Compared with Alternative A (existing management), under Alternative D there would be 33,290 more acres of land designated as ACECs. There would also be the designation of 47,800 more acres of land under SRMAs and ERMAs than under Alternative A. Again, these additional acres would provide more interpretation, environmental education, and research opportunities in the decision area. The interpretive and education center would be established the same as under Alternative C. It could be developed for the existing 468-acre Swasey Drive Area ACEC.

Cumulative Impacts

The cumulative impacts of past and present actions on interpretation, environmental education, and research in the planning area are captured in the description of the affected environment above. Cumulative effects on interpretation, environmental education, and research under each alternative, when considered with existing conditions and reasonably foreseeable future actions, would happen where resource management decisions cause direct and indirect impacts through the gain or loss of such opportunities within the planning area. Changes in the number of and accessibility to interpretive and environmental programming, HOL and other field classrooms and educational sites, interpretive cultural and natural sites, areas identified for scientific studies, and outreach and service-learning opportunities are all contributing factors that cause cumulative impacts on interpretation, environmental education, and research.

Cumulative impacts common to all alternatives would occur where existing impacts and reasonably foreseeable future actions involving resource management overlap opportunities for interpretation, environmental education, and research. The BLM would continue to develop interpretive and educational programs within the planning area utilizing multiple platforms, including signage, participation and outreach through local events and exhibits, and social media. Research endeavors would continue to advance scientific study of BLM-administered resources. These cumulative impacts on interpretation, environmental education, and research would be incremental and long term, benefiting local partners, schools, and institutions of higher learning.

Recreation use levels are expected to increase in the planning area, with continued development of trail systems (motorized and nonmotorized). The BLM also expects visitation to increase on coastal tracts. Unauthorized travel off designated or existing routes, as well as the creation of social trails, has been occurring on an ongoing basis and will likely continue to occur in the planning area. OHV use and popularity are also expected to trend upward, resulting in both increased impacts on existing trails and roads and the growing need to modify existing or develop new trails to meet demand. Cumulative impacts would be incremental where the BLM increases its interpretive and educational programming through signage, kiosks, and other means at locations where such activities are occurring to enhance public

appreciation for public lands. This would foster a sense of responsibility in resource protection that results in the modification of human behavior within the planning area.

The discovery and subsequent inventory of cultural resources continues to increase with continued management actions and treatments, especially those related to vegetation and forestry management. Additionally, paleontological resources, respective to the condition within the planning area, have remained stable; this is because these resources are protected from actions the BLM permits. The BLM would conduct management of cultural and paleontological resources in a manner that protects the quality of scientific values and research potential. The BLM would continue to increase interpretation and protection of key cultural and natural resources, which would continue to be conserved and protected for the public.

Overall, cumulative impacts on interpretation, environmental education, and research common to all alternatives relative to resource management decisions would be long term, incrementally minimal, and beneficial where the BLM increases such opportunities in the planning area. Where management decisions reduce or remove such opportunities, these incremental contributions to cumulative impacts would be long term and minimal; they would not afford the same level of benefit in the planning area.

The contribution of Alternative A to cumulative impacts on interpretation, environmental education, and research would be the same as those described for impacts common to all alternatives. Alternative A would continue existing management actions authorized by the approved RMPs for the Arcata and Redding FOs. Interpretation and environmental education would continue to be administered independently as part of individual resource management programs. Research would continue at its current level. Existing ACECs would provide educational and research opportunities across 54,600 acres while existing SRMAs would provide the same on 40,190 acres of BLM-administered lands in the planning area. These contributions to cumulative impacts, in combination with existing conditions (as reflected in the affected environment) and those reasonably foreseeable future actions, would continue to be long term, incremental, and minimal in the planning area.

Contributions to cumulative impacts under Alternative B would be similar to those described for cumulative impacts common to all alternatives above; however, these contributions would be greater than those under Alternative A because the BLM would develop a comprehensive plan that would provide a proactive approach to resource management on BLM-administered lands within the planning area. This plan would consider interpretation, environmental education, and research opportunities in accordance with land management objectives and goals. Therefore, cumulative impacts from Alternative B would primarily occur where future uses conflict with the comprehensive interpretation and environmental education plan that would be developed under all the action alternatives.

Development and implementation of this plan would enhance awareness and appreciation of cultural and natural resources in the planning area, educate the public on responsible recreation, and promote increased awareness of ACECs and other resources. The BLM would also identify key cultural, historic, and natural resources that would be interpreted and protected for the public. The absence of interpretation and environmental education could result in user actions that degrade cultural and natural resources. The lack of research opportunities would result in the loss of critical data used to assess the effectiveness of public land management.

The comprehensive interpretative plan would also consider climate change trends, which are projected to continue and interact with various resources within the planning area, impacting fish and wildlife habitat, behavior, distribution, and populations. It is also expected to impact the makeup and distribution of vegetation and forests, affecting ecosystem resiliency within the planning area. The interpretation plan would identify opportunities for educational programming to increase awareness of climate change and its effects on BLM-administered resources.

Similarly, wildfire is predicted to increase in recurrence and severity in drought conditions, which would in turn lead to an increase in the occurrence and severity of wildfires on BLM-administered lands in the planning area. Additionally, the population is expected to continue to increase within the WUI, and with it, associated infrastructure. The comprehensive interpretive plan would address the ongoing need to educate public land users and affected communities on the role of wildland fire in ecosystems, its risk to public health and safety, and the safe use of fire in the recreational environment.

Opportunities for interpretive and educational programming would increase under Alternative B as 34,220 acres of new ACECs would be added to the existing 54,600 acres of designated ACECs. Also, the BLM could establish an interpretive and education center for the newly combined 5,960-acre Swasey Drive Clear Creek Greenway ACEC. The addition of 5,400 acres of land designated within SRMAs and newly created ERMA to the 40,190 acres of existing SRMAs would increase opportunities for interpretation and environmental education, as would the 10,430 acres of newly designated RMZs. Overall, the contribution to cumulative impacts on interpretation, environmental education, and research from Alternative B, when considered with existing impacts and those from reasonably foreseeable future actions, would be long term and incremental, and they would have the potential for greater benefit in the planning area than under Alternative A.

Contributions to cumulative impacts under Alternative C would be similar to those described under cumulative impacts common to all alternatives with the exception that these contributions would be greater under this alternative than those under Alternative A. This is because the BLM would develop the comprehensive interpretation plan under this alternative. Under Alternative C, additional management actions specific to cultural resources would also be implemented to increase the number of cultural sites (which would be hardened and protected) to develop interpretive opportunities for visitors to these sites and to known priority sites in the planning area.

Compared with Alternative A, there would be 42,430 acres of designated ACECs, resulting in 12,170 fewer acres of designated ACECs under Alternative C, which could reduce the opportunity for interpretation, environmental education, and research opportunities. However, the interpretive and education center could still be established for the existing 470-acre Swasey Drive ACEC. Under Alternative C, there would be an additional 48,400 acres designated under SRMAs and ERMA, compared with Alternative A. The contributions to cumulative impacts on interpretation, environmental education, and research from Alternative C, in combination with past, present, and reasonably foreseeable future actions, would be long term and incremental, and have the potential for greater benefit in the planning area than under Alternative A.

Contributions to cumulative impacts under Alternative D would be similar to those described under cumulative impacts common to all alternatives with the exception that these contributions would be greater under this alternative than under Alternative A. This is because the BLM would develop the comprehensive interpretation plan under Alternative D. Additional management actions specific to

cultural resources would be the same as those described above under Alternative C, with the exception that these management actions would be made for a greater number of cultural sites that experience heavy visitation.

Compared with Alternative A, there would be 33,290 more acres of designated ACECs, which would increase the opportunity for interpretation, environmental education, and research opportunities. Like under Alternative C, the interpretive and education center could still be established for the existing 470-acre Swasey Drive ACEC. Under Alternative D, there would be an additional 47,800 acres designated under SRMAs and ERMAs, compared with Alternative A. Therefore, the contribution to cumulative impacts on interpretation, environmental education, and research from Alternative D, when considering existing impacts and reasonably foreseeable future actions, would be long term and incremental, and have the potential for greater benefit in the planning area than under Alternative A.

Appendix E

Laws, Regulations, Policy, and
Related Planning Documents

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TABLE OF CONTENTS

Chapter

Page

APPENDIX E. LAWS, REGULATIONS, POLICY, AND RELATED PLANNING DOCUMENTS E-I

E.1	Introduction	E-I
E.2	Laws, Regulations, Policies, and Other Planning Documents for All Resources and Resource Uses	E-I
E.2.1	General Federal Laws, Statutes, Regulations	E-I
E.2.2	Resources	E-2
E.2.3	Resource Uses	E-10
E.2.4	Special Designations	E-12
E.2.5	Support	E-13
E.3	County and City Plans	E-14
E.3.1	General Plans	E-14
E.3.2	Community Wildlife Protection Plans (CWPP)	E-15
E.4	State Agency Plans and Programs	E-15
E.5	Federal Agency Plans	E-16
E.5.1	BLM	E-16
E.5.2	BLM Activity and Implementation-Level Plans	E-17
E.5.3	Forest Service	E-17
E.5.4	US Fish and Wildlife Service	E-18
E.5.5	National Park Service	E-19
E.5.6	National Oceanic and Atmospheric Administration–National Marine Fisheries Service	E-19
E.5.7	Environmental Protection Agency (EPA)	E-19
E.5.8	Bureau of Reclamation (Reclamation)	E-20
E.5.9	Federal Energy Regulatory Commission	E-20
E.5.10	Department of Energy–Western Area Power Administration	E-20
E.6	Non-Government Conservation Plans and Agreements	E-20

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Appendix E. Laws, Regulations, Policy, and Related Planning Documents

E.1 INTRODUCTION

This appendix first provides a description of laws, regulations, and policy applicable to the resources and resource uses considered in the development of the NCIP. This list is not exhaustive but is intended to be representative of items to be considered by the BLM during the planning process.

Additionally, this appendix identifies land use plans related to the NCIP. According to guidance found in 43 CFR 1610, the NCIP must be consistent, to the extent practical, with officially approved or adopted resource-related plans of state and local governments, other federal agencies, and Tribal governments, to the extent that those plans are consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands. Plans formulated by federal, state, local, and Tribal governments that relate to managing lands and resources have been reviewed and considered as the RMP/EIS has been developed. Through this process, the BLM confirmed that management direction in this RMP does not conflict with management direction in existing BLM-adopted resource-specific plans and will not be amending those plans.

The BLM's RMPs must also be consistent with the purposes, policies, and programs of FLPMA and other federal laws and regulations applicable to public lands, including federal and state pollution control laws (see 43 CFR 1610.3-2 (a)).

Before the BLM approves the proposed RMP decisions, the Governor of California will have 60 days in which to identify inconsistencies between the proposed plan and state plans and programs and to provide written comments to the BLM State Director.

E.2 LAWS, REGULATIONS, POLICIES, AND OTHER PLANNING DOCUMENTS FOR ALL RESOURCES AND RESOURCE USES

E.2.1 General Federal Laws, Statutes, Regulations

- The National Environmental Policy Act of 1969
- The Federal Land Policy and Management Act of 1976, as amended (43 USC. 1701 et seq.)
- Executive Order 11514, Protection and Enhancement of Environmental Quality, March 5, 1970 (35 FR 4247), as amended by Executive Order 11991, May 24, 1977
- 40 CFR 1500–1508, Council on Environmental Quality Regulations Implementing NEPA (last updated on September 14, 2020)

USDI and BLM Manuals and Handbooks

- BLM H-1601-1, Land Use Planning Handbook (USDI BLM 2010b)
- BLM H-1790-1, National Environmental Policy Act
- BLM H-3160-5, Inspection and Enforcement Documentation and Strategy Development Handbook

- BLM H-3809-I, Surface Management Handbook
- BLM H-6840, Special Status Species Management
- Land Resources Management Manuals: 2800-2809 and MS-2806 (2022) Chapter 6 Rent and Fee Reductions for Solar and Wind Energy Development Authorizations

Memorandum of Agreements, Informational Bulletins, Instructional Memoranda

- IM 2017-096, Acreage Rent and Megawatt Capacity Fees (Years 2016-2021) for Solar and Wind Energy Development ROW Grants and Leases
- IM 2017-099 Technical and Financial Evaluations for Solar and Wind Energy Right-of Way Grants and Leases
- IM 2022-027 Initial Screening and Prioritization for Solar and Wind Energy Applications and Nominations/Expressions of Interest

E.2.2 Resources***Air***

- Federal laws, statutes, and regulations
 - Clean Air Act of 1990, as amended (42 USC 7401)
 - National Ambient Air Quality Standards (40 CFR 50.4-50.12)
- USDI and BLM manuals and handbooks
 - BLM Manual 7000, Soil, Water, and Air Management
 - BLM Manual 7300, Air Resource Management Program

Cave and Karst Resources

- Federal laws, statutes, and regulations
 - Federal Cave Resources Protection Act of 1988 (16 USC 4301 et seq.)
- USDI and BLM manuals and handbooks
 - BLM Manual 8380, Cave and Karst Resources Management
- Agreements, informational bulletins, instructional memoranda
 - IM WO 2010-181, White-nose Syndrome

Climate Change

- Federal laws, statutes, and regulations
 - Energy Policy Act of 2005
 - Secretarial Order 3289, Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources, September 14, 2009
- California State laws, statutes, and regulations
 - California Coastal Commission Sea Level Rise Policy Guidance—Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits

Coastal Resources and Management

- Federal laws, statutes, and regulations
 - Coastal Zone Management Act of 1972

- California state laws, statutes, and regulations
 - California Coastal Act Public Resources Code Division 20
 - Humboldt County Beach and Dunes Management Plan (1992)

Cultural Resources

- Federal laws, statutes, and regulations
 - Historic Sites Act of 1935 (16 USC. 461)
 - National Historic Preservation Act of 1966, as amended (16 USC 470)
 - Native American Graves Protection and Repatriation Act, as amended (25 USC. 3001 et seq.)
 - Antiquities Act of 1906 (P.L. 59-209; 34 Stat. 225; 16 USC 431–433)
 - Archaeological Resources Protection Act of 1979, as amended (16 USC 470)
 - 36 CFR 78 (Waiver of Federal Agency Responsibilities under Section 110 of the National Historic Preservation Act)
 - 36 CFR 79 (Curation of Federally Owned and Administered Archaeological Collections)
 - 36 CFR 60 (National Register of Historic Places)
 - 36 CFR 800 (Protection of Historic Properties)
 - 43 CFR 3 (Preservation of American Antiquities; implementing regulations for the Antiquities Act)
 - 43 CFR 7 (Protection of Archaeological Resources)
 - 43 CFR 10 (Native American Graves Protection and Repatriation Act Regulations; Final Rule)
 - Executive Order 13007—Indian Sacred Sites
- USDI and BLM manuals and handbooks
 - BLM Manual 8100, The Foundation for Managing Cultural Resources
- Agreements, informational bulletins, instructional memoranda
 - Information Bulletin (IB) WO-2002-101, Cultural Resource Considerations in Resource Management Plans (2002)
 - IB WO-2003-093, Implementation of Executive Order (EO) 13287 and Preserve America Initiative
 - IB WO-2004-154, Amendments to 36 CFR 800, Protection of Historic Properties
 - IM WO-98-131, Disposition Policy on Native American Graves Protection and Repatriation Act Repatriated Museum Collections
 - IM WO-2003-147, Application for Permit to Drill, Process Improvement No. 3—Cultural Resources
 - IM WO 2004-020, Guidance for Recording Cultural and Paleontological Resource Locations for the Bureau of Land Management (BLM) using Global Positioning System (GPS) Technology
 - IM WO-2004-052, Assessing Tribal and Cultural Considerations as Required in IM-2003-233, Integration of the Energy Policy and Conservation Act Inventory Results into the Land Use Planning Process
 - IM WO-2005-003, Cultural Resources and Tribal Consultation and Fluid Minerals Leasing
 - IM WO-2005-027, National Historic Preservation Act Section 106 and Oil and Gas Permitting

- IM 2007-002, BLM Reburial Policy on BLM Lands (USDI BLM 2006)
- IM 2012-067, Clarification of Cultural Resources Considerations for Off-Highway Vehicle Designations and Travel Management
- State Protocol Agreement among the California State Director of the Bureau of Land Management and the California State Historic Preservation Officer and the Nevada State Historic Preservation Officer Regarding the Manner in Which the Bureau of Land Management Will Meet its responsibilities under the National Historic Preservation Act and the National Programmatic Agreement among the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (Revised 2019)
- Programmatic Agreement among the Bureau of Land Management, The Advisory Council on Historic Preservation, and the National Conference of State Historic preservation Officers Regarding the Manner in Which the BLM Will Meet Its Responsibilities under the National Historic preservation Act February 9, 2012

Fish and Wildlife and Special Status Species

- Federal laws, statutes, and regulations
 - Endangered Species Act of 1973, as amended (16 USC 1531 et seq.)
 - Fish and Wildlife Coordination Act (16 USC 661 et seq.)
 - Migratory Bird Conservation Act of 1929, as amended (16 USC 715)
 - Migratory Bird Treaty Act of 1918, as amended (16 USC 703-712)
 - Establishment of the Klamath River Basin Fisheries Task Force (16 USC 460ss-3)
 - Anadromous Fish Conservation Act (16 USC 757 et seq.)
 - Federal Aid in Sport Fish Restoration Act (Dingell-Johnson Act) (16 USC 777, et seq.)
 - Magnuson-Stevens Fishery Conservation and Management Act of 1976 (16 USC. 1801 et seq.)
 - Salmon and Steelhead Conservation and Enhancement Act of 1980 (16 USC 3301 et seq.)
 - Marine Life Protection Act (1999)
- USDI and BLM manuals and handbooks
 - BLM Manual 6500, Wildlife and Fisheries Management
 - BLM Manual 6720, Fisheries and Aquatic Resources Management
 - BLM Manual 6780, Habitat Management Plans
 - BLM Manual 6840, Special Status Species Management
- Memorandum of agreements, informational bulletins, instructional memoranda
 - Memorandum of Understanding between the US Department of the Interior Bureau of Land Management and the U. S. Fish and Wildlife Service To Promote the Conservation of Migratory Birds (2010)
 - Memorandum of Understanding, Federal Lands Hunting, Fishing, and Shooting Sports Roundtable (2014)
 - Rangewide Conservation Agreement for the Conservation and Management of Interior Redband Trout (2014)
 - Secretarial Order 3356, Hunting, Fishing, Recreational Shooting and Wildlife Conservation Opportunities and Coordination with States, Tribes and Territories

- Secretarial Order 3362, Improving Habitat Quality in Western Big Game Winter Range and Migration Corridors
- IM 2017-036, Considering Backcountry Conservation Management in Land Use Planning
- IM 2017-040, Bald and Golden Eagle Protection Act–Eagle Incidental Take Permit Guidance for Renewable Energy Development
- IM 2018-062, Addressing Hunting, Fishing, Shooting Sports, and Big Game Habitats, and Incorporating Fish and Wildlife Conservation Plans and Information from Tribes, State Fish and Wildlife Agencies, and Other Federal Agencies in Bureau of Land Management (BLM) National Environmental Policy Act (NEPA) Processes
- IM 2023-005, Habitat Connectivity on Public Lands
- Endangered species recovery plans
 - Revised Recovery Plan for the Northern Spotted Owl (2011b)
 - Recovery Plan for the Red-Legged Frog (2002)
 - Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (2007b)
 - Recovery Plan for the Marbled Murrelet (1997)
 - Valley Elderberry Longhorn Beetle Recovery Plan (1984)
 - Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (2005)
 - Recovery Plan for Seven Coastal Plants and the Myrtle's Silverspot Butterfly (1998) Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants (2006)
 - Recovery Plan for Sacramento River Winter-Run Chinook Salmon, Central Valley Spring-Run Chinook Salmon, and California Central Valley Steelhead (2014)
 - Draft Recovery Plan for the Giant Garter Snake (*Thamnopsis gigas*) (1999)
 - Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*) (2002)
 - Revised Recovery Plan for the Lost River Sucker and Shortnose Sucker (*Deltistes luxatus* and *Chasmistes brevirostris*) (2013)

Forestry

- Federal laws, statutes, and regulations
 - Healthy Forest Restoration Act (2003) (P.L. 108-148)
 - CFR Subchapter E - Forest Management (5000)
 - Part 5000 (Administration of Forest Management Decisions)
 - Part 5040 (Sustained Yield Forest Units)
 - Part 5400 (Sales of Forest Products; General)
 - Part 5410 (Annual Timber Sale Plan)
 - Part 5420 (Preparation for Sale)
 - Part 5430 (Advertisement)
 - Part 5440 (Conduct of Sales)
 - Part 5450 (Award of Contract)
 - Part 5460 (Sales Administration)

- Part 5470 (Contract Modification - Extension - Assignment)
- Part 5500 (Nonsale Disposals; General)
- Part 5510 (Free Use of Timber)

Lands with Wilderness Characteristics

- Federal laws, statutes, and regulations
 - Wilderness Act, as amended (16 USC 1131 et seq.)
- USDI and BLM manuals and handbooks
 - BLM Manual 6310, Conducting Wilderness Characteristics Inventory on BLM Lands
 - BLM Manual 6320, Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process (USDI BLM 2012b)
- Memorandum of agreements, informational bulletins, instructional memoranda
 - The Healthy Forests Initiative and Healthy Forests Restoration Act Interim Field Guide (2004)
 - Healthy Forests Restoration Initiative (2002)

Minerals

- Federal laws, statutes, and regulations
 - Mining and Mineral Policy Act of 1970 (30 USC 181 et seq.)
 - Surface Mining Control and Reclamation Act of 1977 (30 USC 1201 et seq.)
 - The Mineral Leasing Act of 1920, as amended
 - The Mineral Leasing Act for Acquired Lands of 1947, as amended
 - The United States Mining Laws of 1872
- California state laws, statutes, and regulations
- The Surface Mining and Reclamation Act 1975 USDI and BLM Manuals and Handbooks
 - BLM H-3042-I, Solid Minerals Reclamation Handbook
 - BLM H-3150-I, Onshore Oil and Gas Geophysical Exploration Surface Management Requirements
 - BLM H-3420-I, Competitive Coal Leasing
 - BLM H-3600-I, Mineral Materials Disposal Handbook
 - BLM H-3720-I, Abandoned Mine Land Program Policy Handbook
 - BLM Manual 2881, Mineral Leasing Act—General
 - BLM Manual 3720, Abandoned Mine Land Program Policy
 - BLM Manual 3800, Mining Claims Under the General Mining Laws
- Memorandum of agreements, informational bulletins, instructional memoranda
 - Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development: The Gold Book (USDI and USDA 2007)

Paleontology

- Federal laws, statutes, and regulations
 - Paleontological Resources Preservation Act (16 USC 473 et seq.)

- USDI and BLM Manuals and Handbooks
- BLM Manual 8270, Paleontological Resource Management
- BLM IM 2009-011, Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources
- BLM IM 2016-124, Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands
- USDI, 2000. Assessment of Fossil Management on Federal & Indian Lands.
- Forest Service, Paleontological Resources Preservation. *Federal Register* vol 80, no. 74, 2015.

Soils

- Federal laws, statutes, and regulations
 - Soil and Water Resources Conservation Act of 1977, as amended (16 USC 2001)
- USDI and BLM manuals and handbooks
 - BLM Manual 7000, Soil, Water, and Air Management

Tribal Consultations/Interests

- Federal laws, statutes, and regulations
 - Tribal Forest Protection Act (2004) (P.L. 108)
 - American Indian Religious Freedom Act (49 USC 47125 et seq.)
 - Native American Graves Protection and Repatriation Act, as amended (25 USC 3001 et seq.)
 - 43 CFR 10 (Native American Graves Protection and Repatriation Act Regulations; Final Rule)
 - Executive Order 13007—Indian Sacred Sites
 - Executive Order 13175—Consultation and Coordination with Indian Tribal Governments
- USDI and BLM manuals and handbooks
 - BLM Handbook (H)1780-I, Improving and Sustaining BLM-Tribal Relations (2016)
 - State Protocol Agreement among the California State Director of the Bureau of Land Management and the California State Historic Preservation Officer and the Nevada State Historic Preservation Officer Regarding the Manner in which the Bureau of Land Management Will Meet its Responsibilities under the National Historic Preservation Act and the National Programmatic Agreement among the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (revised 2019).

Vegetation, Special Status Species, and Invasive Species

- Federal laws, statutes, and regulations
 - The Endangered Species Act of 1973, as amended.
 - Federal Noxious Weed Act of 1974, Public Law 93-692, as amended (7 USC 2814)
 - Noxious Weed Control and Eradication Act of 2004 (Public Law 108-412)
 - National Invasive Species Act of 1996 (16 USC §4701, et seq.)
 - Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (16 USC 4701).
 - Executive Order 13112, Invasive Species (dated Feb 3, 1999).

- Public Law 95-250, To amend the Act of October 2, 1968, an Act to establish a Redwood National Park in the State of California, and for other purposes (1978) (discusses the Park Protection Zone)
- USDI and BLM manuals and handbooks
 - BLM H-1740-2, Integrated Vegetation Management
 - BLM H-1745-1, Native Plant Materials Handbook
 - BLM H-6840-1, Special Status Plant Management (USDI BLM 2012a)
 - BLM Manual 1745, Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, And Plants
 - BLM Manual 6840, Special Status Species Management
 - BLM Manual 9011, Chemical Pest Control
 - BLM Manual 9015, Integrated Weed Management
- Memorandum of agreements, informational bulletins, instructional memoranda
 - Humboldt Weed Management Area Memorandum of Understanding
 - IM 2016-013, Managing for Pollinators on Public Lands
 - IM 2017-078, Instructions for Implementing the Final Programmatic Environmental Impact Statement Using Aminopyralid, Fluroxypyr, and Rimsulfuron on the Bureau of Land Management Lands in 17 Western States
- Endangered species recovery plans
 - McDonald's Rock-creep Recovery Plan (1984)
 - Recovery Plan for Seven Coastal Plants and the Myrtle's Silverspot Butterfly (1998) Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants (2006)
 - Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (2005)
- Federal initiatives and strategies
 - Partners Against Weeds Initiative (USDI BLM 1996)
 - National Seed Strategy for Rehabilitation and Restoration 2015-2020 (USDI 2015)
 - National Strategy to Promote the Health of Honeybees and Other Pollinators (2015)

Visual Resources

- USDI and BLM manuals and handbooks
 - BLM H-8410-1, Visual Resource Inventory (1986)
 - BLM M-8400, Visual Resource Management (1984)

Water

- Federal laws, statutes, and regulations
 - Clean Water Act of 1972 (33 USC 1251 et seq.)
 - Water Resources Development Act of 1974
 - Soil and Water Resources Conservation Act of 1977, as amended (16 USC 2001)
 - Pollution Prevention Act of 1990
 - Executive Order 11990, Protection of Wetlands (dated May 24, 1977).

- Executive Order 12088, Federal Compliance with Pollution Control Standards, October 13, 1978 (43 FR 47707)
- Executive Order 11988, Floodplain Management (dated May 24, 1977).
- Land and Water Conservation Fund Act of 1965 (16 USC §4601, et seq.)
- Watershed Restoration and Enhancement (Wyden Amendment) (16 USC §1011)
- Water Quality Act of 1987, as amended from the Federal Water Pollution Control Act (Clean Water Act) of 1977 (33 USC §1251 et seq.).
- California state laws, statutes, and regulations
 - Water Quality Control Plan for the North Coast Region, May 2011
 - Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Fourth Edition, June 2015.
 - Porter-Cologne Water Quality Control Act, January 2016.
 - California Water Code §5101
- USDI and BLM manuals and handbooks
 - BLM Manual 1737, Riparian-Wetland Area Management
 - BLM Manual 6721, Reservoirs
 - BLM Manual 6740, Wetland-Riparian Area Protection and Management
 - BLM Manual 7000, Soil, Water, and Air Management
 - BLM Manual 7250, Water Rights Manual
 - Technical Reference 1737-9, Riparian Area Management, Process for Assessing Proper Functioning Condition
 - Technical Reference 1737-11, Riparian Area Management, Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas
 - Technical Reference 1737-15, Riparian Area Management, Proper Functioning Condition Assessment for Lotic Areas
- Memorandum of agreements, informational bulletins, instructional memoranda
 - IM 78-410, Policy on Protection of Wetland-Riparian Areas
 - IM 78-523, Compliance with Bureau of Land Management Interim Floodplain Management Procedures
 - IM 87-274, Riparian Area Management Policy

Wildland Fire Management

- Federal laws, statutes, and regulations
 - Federal Fire Prevention and Control Act, October 29, 1974 (88 Stat. 1535, 15 USC 2201)
 - Reciprocal Fire Protection Act of May 27, 1955 (69 Stat. 66; 2 USC 1856, 1856a)
 - Review and Update of the 1995 Federal Wildland Fire Management Policy (2001)
- USDI and BLM manuals and handbooks
 - BLM H-9214-I, Prescribed Fire Management Handbook
 - BLM H-9211-I, Fire Management Planning Handbook
 - BLM H-9238-I, Fire Trespass Handbook

- BLM Manual 9212, Fuels Prevention
- BLM Manual 9214, Fuels Management and Community Assistance
- USDI Departmental Manual, DM 34, Part 620 Wildland Fire Management, Chapter 1: General Policies and Procedures
- USDI Departmental Manual, DM 34, Part 620 Wildland Fire Management, Chapter 3: Burned Area Emergency Stabilization and Rehabilitation
- Memorandum of agreements, informational bulletins, instructional memoranda
 - Interagency Standards for Fire and Fire Aviation Operations (“The Red Book”) (Federal Fire and Aviation Task Group 2014)
 - Interagency Prescribed Fire Planning and Implementation Procedures Guide (National Wildfire Coordinating Group 2014)
 - Federal Initiatives and Strategies
 - Guidance for Implementation of Federal Wildland Fire Management Policy (2009)
 - 1995 Federal Wildland Fire Management Policy (revised in 2001)
 - A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan (2006)
 - A National Cohesive Wildland Fire Management Strategy (2011)
 - The National Strategy: The Final Phase of the Development of the National Cohesive Wildland Fire Management Strategy (2014)
 - National Action Plan: An Implementation Plan for the National Cohesive Wildland Fire Management Strategy (2014)
 - Executive Memorandum, Subject: Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment (2015)

E.2.3 Resource Uses

Comprehensive Trail and Travel Management

- Federal laws, statutes, and regulations
 - National Trails System (16 USC 27)
 - Increasing Recreational Opportunities Through the Use of Electric Bikes (43 CFR 8340)
- USDI and BLM manuals and handbooks
 - BLM H-8342-1, Travel and Transportation
 - BLM H-9113-1, Roads
 - BLM H-9113-2, Roads National Inventory and Condition Assessment
 - BLM H-9215-1, Primitive Roads Design
 - BLM H-9115-2, Roads National Inventory & Condition Assessment Guidance & Instructions
 - BLM Manual 1626, Travel and Transportation
- Memorandum of agreements, informational bulletins, instructional memoranda
 - IM 2008-014, Clarification of Guidance and Integration of Comprehensive Travel and Transportation Management Planning into the Land Use Planning
 - IM 2008-069, Addressing National Recreation Trails in the Land Use Planning Process

- IM 2008-091, Guidance for Signing when Implementing Travel Management Planning
- IM 2010-167, Travel and Transportation Management Performance Measures and Planning updates
- IM 2018-102, Guidance for Implementation of the new Travel Management Area and Plans Data
- BLM-MS-1626, Travel and Transportation Manual
- BLM-MS-9130, Sign Manual
- BLM Technical Notes 422, Roads and Trails Terminology
- BLM Roads and Trails Terminology Report 2006
- BLM Technical Reference 9113-1 Planning and Conducting Route Inventories

Livestock Grazing

- Federal laws, statutes, and regulations
 - Public Rangelands Improvement Act of 1978 (43 USC 869 et seq.)
 - Taylor Grazing Act of 1934 (43 USC 315)
 - Public Rangelands Improvement Act of 1978 (43 USC 1901 et seq.).
- USDI and BLM manuals and handbooks
 - BLM H-4180-1, Rangeland Health Standards
 - BLM Manual 1741-1, Fencing
 - BLM Manual 1741-2, Water Developments
 - Technical Reference 1734-6, Interpreting Indicators of Rangeland Health

Lands and Realty

- Federal laws, statutes, and regulations
 - Recreation and Public Purposes Act of 1926, as amended (43 USC 869 et seq.)
 - Leases, Permits, and Easements (43 CFR 2920)
 - Land Withdrawals (43 CFR 2300)
 - Restorations and Revocations (43 CFR 2370)
 - Disposal Classifications (43 CFR 2430)
 - Sales: Federal Land Policy Management Act (43 CFR 2710)
 - Recreation and Public Purposes Act (43 CFR 2740)
 - ROWs issued under FLPMA (43 CFR 2800)
 - Leases (43 CFR 2910)
 - Airport (43 CFR 2911)
 - Exchanges (43 CFR 2200)
 - Recreation and Public Purposes Amendment Act of 1988
 - Mineral Leasing Act of 1920, as amended
 - Renewable and Alternative Energy Development

- USDI and BLM manuals and handbooks
 - BLM H-2100-I, Acquisition
 - BLM H-2200-I, Land Exchange Handbook
 - BLM H-2710, Land Sales
 - BLM H-2740, R&PP
 - BLM MS-2800, Rights-of-Way Manual
 - BLM H-9320, Trespass
 - BLM H-9600-I, Cadastral Survey Handbook
 - DOI 600 DM 5, Standards for Federal Lands Boundary Evidence

Recreation and Visitor Services

- Federal laws, statutes, and regulations
 - 43 CFR 8340 Off-Road Vehicles, Subparts 8341, 8342, 8343, 8344
 - Increasing Recreational Opportunities Through the Use of Electric Bikes (43 CFR 8340)
 - Executive Order 11644—Use of Off-Road Vehicles on the Public Lands
- USDI and BLM manuals and handbooks
 - BLM H-8320-I, Planning for Recreation and Visitor Services
 - BLM H-2930-I, Recreation Permit and Fee Administration Handbook
 - BLM Recreation Strategy: Connecting with Communities, 2014-2019
- Recreation management plans
 - 2008 Clear Creek Greenway Plan
 - 2014 Foundation Document Whiskeytown National Recreation Area

E.2.4 Special Designations

Areas of Critical Environmental Concern

- USDI and BLM manuals and handbooks
 - BLM Manual 1613, Areas of Critical Environmental Concern

National Scenic and Historic Trails

- Federal laws, statutes, and regulations
 - The National Trails System Act of 1968, as amended (16 USC 1241 et seq.)
- USDI and BLM manuals and handbooks
 - BLM Manual 6280, Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation

Wild and Scenic Rivers

- Federal laws, statutes, and regulations
 - Wild and Scenic Rivers Act, as amended (16 USC 1271 et seq.)

- USDI and BLM manuals and handbooks
 - BLM Manual 6400, Wild and Scenic Rivers–Policy and Program Direction for Identification, Evaluation, Planning, and Management
 - Evaluation Report on The Eligibility of Five California Rivers for Inclusion in The National Wild and Scenic Rivers System

Wilderness and Wilderness Study Areas

- Federal laws, statutes, and regulations
 - Wilderness Act, as amended (16 USC 1131 et seq.)
- USDI and BLM manuals and handbooks
 - BLM Manual 6330, Management of Wilderness Study Areas
 - BLM Manual 6340, Management of Designated Wilderness
 - BLM Manual 8561, Wilderness Management Plans
 - BLM Manual 1794, Mitigation

E.2.5 Support

Mitigation

- USDI and BLM manuals and handbooks
- Memorandum of agreements, informational bulletins, and instructional memoranda
 - IM 2014-021 Direction Regarding the Survey and Manage Mitigation Measure as a Result of Court Ruling in Conservation Northwest et al v. Bonnie et al., Case No. 08-1067-JCC (W.D. Wash.)
 - IM 2021-046 Reinstating the BLM Manual Section (MS-1794) and Handbook (H-1794-1) on Mitigation

Social, Economic, Environmental Justice

- Federal laws, statutes, and regulations
 - Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
 - Multiple-Use Sustained-Yield Act of 1960 (16 USC 528-531)
 - Federal-Aid Highway Act of 1958, 1962, 1966, 1968, and 1973, as amended
 - Highway Safety Act of 1966 as amended
 - Architectural Barriers Act of 1968 as amended
 - Surface Transportation Act of 1978 and 1982 as amended
 - Disaster Relief Act of 1974, as amended in 1980 and 1988, Sec. 5121 (42 USC 5121)
 - Environmental Quality Improvement Act, as amended (42 USC 4371 et seq.)
 - Economy Act of June 30, 1932 (47 Stat. 417; 31 USC 686)
 - Federal Grant and Cooperative Agreement Act, 1977 (P.L. 950224, as amended by P.L. 97-258, September 13, 1982)
 - Federal Land Assistance, Management and Enhancement (FLAME) Act (2009)

- Noise Control Act of 1972 (42 USC 4901 et seq.)
- Protection Act of September 20, 1922 (42 Stat. 857; 16 USC 594)
- The Sikes Act of 1974, as amended (16 USC 670 et seq.)
- Appropriations Act of 1952, McCarran Amendment
- Executive Order 11987—Exotic Organisms
- Executive Order 13514, Federal Leadership in Environmental Energy, and Economic Performance, October 5, 2009
- Lacey Act of 1900 (16 USC 3371–3378)
- The Children's Environmental Health Protection Act (California Senate Bill 25, Escutia, 1999)

E.3 COUNTY AND CITY PLANS

The BLM will consider the following county and city plans during the RMP development process for the purpose of consistency.

E.3.1 General Plans

- Butte County General Plan 2030 (2010)
- Del Norte County General Plan (2003)
- Humboldt County General Plan (2017)
- Humboldt County Beach and Dunes Management Plan (1993)
- Humboldt Bay Area Plan of the Humboldt County Local Coastal Program (2014)
- Humboldt County Association of Governments (2008)
- Humboldt County Regional Transportation Plan (2017)
- Humboldt Bay Harbor, Recreation, and Conservation District Economic Development Committee Summary (2010)
- Mendocino County General Plan (2009)
- Shasta County General Plan (2004)
- Siskiyou County General Plan (1980)
- Tehama County General Plan (2009)
- Trinity County General Plan (1988)
- City of Anderson General Plan (2007)
- City of Arcata General Plan (2000)
- City of Chico General Plan (2011, amended March 2017)
- City of Crescent City General Plan (2001)
- City of Eureka General Plan (2018)
- City of Ferndale General Plan (1986—Land Use Element)
- City of Fortuna General Plan (Revised Land Use—2014)
- City of Oroville General Plan (2015)
- City of Redding General Plan (2000)
- City of Redding Parks, Trails, and Open Space Master Plan (2018)
- City of Red Bluff Design Review Guidelines (1980)

- City of Shasta Lake (1999)
- City of Willits General Plan (1992)
- City of Yreka General Plan (2003)
- Town of Paradise General Plan (1994)
- City of Trinidad Local Coastal Program and General Plan (1978)

E.3.2 Community Wildlife Protection Plans (CWPP)

- Butte County CWPP (2015)
- Siskiyou County:
 - Siskiyou County CWPP (2019)
 - Yreka Area Fire Safe Council CWPP (2019)
 - Juniper Flat CWPP (2014)
 - Quartz Hill CWPP (2009)
- Trinity County CWPP (2015)
- Tehama County:
 - Tehama East CWPP (2017)
 - Tehama West CWPP (2017)
- Shasta County:
 - Keswick Basin CWPP (2009)
 - Shingletown CWPP (2011)
- Shasta/Trinity Unit Fire Management Plan/Shasta County CWPP (2008)
- Humboldt County:
 - Humboldt County CWPP (2019)
 - Lower Mattole CWPP (2016)
 - Southern Humboldt CWPP (2013, included in 2019 update)
 - Mad-Van Duzen Watershed CWPP (2019)
- Mendocino County Community Wildfire Protection Plan (2015)

E.4 STATE AGENCY PLANS AND PROGRAMS

- State Wildlife Action Plan (2015)
- California's Statewide Historic Preservation Plan 2013-2017
- California Aquatic Invasive Species Management Plan (2008)
- California Forest Practices Act (1973)
- Water Quality Control Plan for the North Coast Region (2018)
- Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (2018)
- California State Park General Plans (as applicable)
- Recovery Strategy for California Coho Salmon (2004–2012)
- California Coastal Management Program (1978)

- Ecosystem Restoration Program Conservation Strategy for Restoration of the Sacramento-San Joaquin Delta, Sacramento Valley and San Joaquin Valley Regions (2014)¹
- Statewide Integrated Water Management, California Water Plan (2018)
- California Coastal National Monument Resource Management Plan (2005)
- California Wild and Scenic Rivers Act (2022)
- California Air Resources Board
 - Butte District Attainment Plan (Fine Particulate Matter [PM_{2.5}]) (2009) Community Air Protection Program 20
 - San Joaquin Valley Unified Air Pollution Control District PM_{2.5} State Implementation Plan (2018)
 - Attainment Plan for the 1-Hour Ozone Standard (2013)
 - PM₁₀ Maintenance Plan (2007)
 - Wildfire Smoke, A Guide for Public Health Officials (Revised 2019)
 - Coordination and Communication Protocol for Naturally Ignited Fires (2011)
 - California Code of Regulations Title 17, Smoke Management Guidelines for Agricultural and Prescribed Burning (2001)
- Oroville Lake State Recreation Area General Plan (2004)
- California Department of Water Resources – State Water Project
- Strategic Fire Plan for California (2019)
 - CAL FIRE Butte Unit Fire Management Plan
 - CAL FIRE Shasta-Trinity Unit Fire Management Plan
 - CAL FIRE Siskiyou Unit Fire Management Plan
 - CAL FIRE Tehama-Glenn Unit Fire Management Plan
 - CAL FIRE Mendocino Unit Fire Management Plan
 - CAL FIRE Humboldt-Del Norte Unit Fire Management Plan

E.5 FEDERAL AGENCY PLANS

The BLM will consider plans from other federal agencies including but not necessarily limited to those listed below.

E.5.1 BLM

- California Vegetation Management Final Environmental Impact Statement (FEIS) (1988)
- Yokayo Grazing Record of Decision (ROD) (1983)
- Final Redding Grazing EIS (1983)
- Solar Energy Development Programmatic EIS (2012)
- Wind Energy Programmatic EIS (2005)
- Vegetation Treatment on BLM Lands in Thirteen Western States (USDI BLM 1991)

¹ Also a federal plan; plan is a collaboration between CDFW, USFWS, and NOAA Fisheries.

- Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (USDI BLM 2007a)
- Record of Decision for Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (USDI BLM 2007b)
- Final Vegetation Treatments using Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States Draft Programmatic EIS (USDI BLM 2016b)
- National Invasive Species Management Plan 2008-2012 (US National Invasive Species Council 2008)
- Rangeland Health Standards and Guidelines for California and Northwestern Nevada Final EIS (1998)
- National Fire Plan of 2001 (Public Law 106–291)
- Final Environmental Statement for Timber Management (SYU-15) (1976)
- Final Timber Management Environmental Assessment: Sustained Yield Unit 15 (SYU-15) (USDI BLM 1981b)
- Interim Strategy for Managing Anadromous Fish-producing Watersheds on Lands Administered by the Forest Service and Bureau of Land Management in Eastern Oregon and Washington, Idaho, and Portions of California (1995)

E.5.2 BLM Activity and Implementation-Level Plans

- South Spit Management Plan (2002)
- Lacks Creek Management Plan (2008)
- Ma-le'l Dunes Cooperative Management Area Public Access Plan (2010)
- Interlakes Special Recreation Management Area Environmental Impact Statement and Record of Decision (1997)
- Swasey Drive Area Implementation Plan Finding of No Significant Impact and Record of Decision (2004)
- 2009 Redding Resource Management Plan Maintenance Swasey Drive ACEC Boundary (2009)
- Japanese Knotweed Control Protocol (2006) (Programmatic EA for the Arcata FO)

E.5.3 Forest Service

- Northwest Forest Plan (1994)
- Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (2001)
- Interim Strategy for Managing Anadromous Fish-producing Watersheds on Lands Administered by the Forest Service and Bureau of Land Management in Eastern Oregon and Washington, Idaho, and Portions of California (1995)
- Shasta-Trinity National Forest Land and Resource Management Plan (1995)
- Klamath National Forest Land and Resource Management Plan (1995, amended 2010)
- Lassen National Forest Land and Resource Management Plan (1992)
- Mendocino National Forest Land and Resource Management Plan (1995, amended 2007)

- Plumas National Forest Land and Resource Management Plan (1988)
- Six Rivers National Forest Land and Resource Management Plan (1998, amended 2008)

E.5.4 US Fish and Wildlife Service

Species and Habitat Recovery Plans

- Revised Recovery Plan for the Northern Spotted Owl (2011b)
- Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (2005)
- Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (2007b)
- Recovery Plan for the Marbled Murrelet (1997)
- Valley Elderberry Longhorn Beetle Recovery Plan (1984)
- McDonald's Rock-creep Recovery Plan (1984)
- Recovery Plan for Seven Coastal Plants and the Myrtle's Silverspot Butterfly (1998)
- Recovery Plan for Sacramento River Winter-Run Chinook Salmon, Central Valley Spring-Run Chinook Salmon, and California Central Valley Steelhead (2014)
- Revised Draft Recovery Plan for the Coterminous United States Population of Bull Trout (*Salvelinus confluentus*) (2014)
- Draft Recovery Plan for the Giant Garter Snake (*Thamnopsis gigas*) (2017)
- Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*) (2002)
- Revised Recovery Plan for the Lost River Sucker and Shortnose Sucker (*Deltistes luxatus* and *Chasmistes brevirostris*) (2013)

Conservation Plans and Agreements

- Humboldt Bay National Wildlife Refuge Complex Comprehensive Conservation Plan (2005)
- Rangewide Conservation Agreement for the Conservation and Management of Interior Redband Trout (2014)
- Conservation Assessment and Strategy for the Humboldt Marten in California and Oregon (2019)
- The Pacific Lamprey Conservation Agreement (2012)
- Habitat Management Guidelines for Amphibians and Reptiles of Northwestern United States and Western Canada (2008)
- Conservation of Fishers (*Martes pennanti*) in South-Central British Columbia, Western Washington, Western Oregon, and California
 - Volume I: Conservation Assessment (2010)
 - Volume II: Key Findings From Fisher Habitat Studies in British Columbia, Montana, Idaho, Oregon, and California (2011)
- Conservation of Fishers (*Martes pennanti*) in South-Central British Columbia, Western Washington, Western Oregon, and California—Volume III: Threat Assessment (2012)
- Sacramento National Wildlife Refuges (2009)

Other Management Plans and Guidelines

- Habitat Management Guidelines for Amphibians and Reptiles of Southwestern United States (2016)
- Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants (2006)
- Memorandum of Understanding between the US Department of the Interior Bureau of Land Management and the U. S. Fish and Wildlife Service To Promote the Conservation of Migratory Birds (2010)
- Birds of Conservation Concern (2008)

E.5.5 National Park Service

- Redwood National and State Parks General Management Plan (2000)
- Whiskeytown Unit: Whiskeytown-Shasta-Trinity National Recreation Area General Management Plan (2000)
- Lassen Volcanic National Park General Management Plan (2003)
- Comprehensive Management and Use Plan and Final Environmental Impact Statement for the California National Historic Trail and Pony Express National Historic Trail (1998)
- Final Environmental Impact Statement, Proposed Designation of Five California Rivers in the National Wild and Scenic Rivers System, Volume I, Appendices, Volume II Parts I & II (1980)

E.5.6 National Oceanic and Atmospheric Administration–National Marine Fisheries Service

- Central California Coast Coho Salmon Recovery Plan (2012)
- Southern Oregon/Northern California Coast Coho Salmon Recovery Plan (2014)
- California Central Valley Salmon and Steelhead Recovery Plan (2014)
- Coastal Multispecies Public Draft Recovery Plan: California Coastal Chinook Salmon ESU, Northern California Steelhead DPS and Central California Coast Steelhead DPS (2015 Public Draft In Review)

E.5.7 Environmental Protection Agency (EPA)

- Eel River (Lower) Sediment and Temperature TMDLs (2007)
- Eel River (North Fork) Sediment and Temperature TMDLs (2002)
- Eel River (Middle Fork) Sediment and Temperature TMDLs (2003)
- Eel River (South Fork) Sediment and Temperature TMDLs (1999)
- Eel River (Middle Main) Sediment and Temperature TMDLs (2005)
- Eel River (Upper Main) Sediment and Temperature TMDLs (2004)
- Mad River Sediment and Turbidity TMDLs (2007)
- Mattole River Sediment TMDL (2002)
- Redwood Creek Sediment TMDL (1998)
- Ten Mile River Sediment TMDL (2000)
- Trinity River Sediment TMDL (2001)

- Trinity River (South Fork) Sediment TMDL (1998)
- Van Duzen River Sediment TMDL (1999)

E.5.8 Bureau of Reclamation (Reclamation)

- Anadromous Fish Restoration Program Comprehensive Assessment and Monitoring Program (2001)
- The Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Environmental Impact Report and Record of Decision (2000)
- Central Valley Project Improvement Act (1992)
- CALFED Bay-Delta Authorization Act FEIS and Record of Decision (2000)

E.5.9 Federal Energy Regulatory Commission

- Draft Historic Properties Management Plan, Klamath Hydroelectric Project (FERC Project No. 2082) PacifiCorps (2004)
- DeSabra-Centerville Hydroelectric Project FERC Project No. 803 (2008)
- Hydropower License Surrender and Decommissioning Lower Klamath Project-FERC Project No. 14803-001 Klamath Hydroelectric Project—FERC Project No. 2082-063 (2022)

E.5.10 Department of Energy–Western Area Power Administration

- North Area Right-of-Way Maintenance Program Operations and Maintenance Plan (2005)
- North Area Right-of-Way Maintenance Program; Western–Bureau of Land Management (2010)

E.6 NON-GOVERNMENT CONSERVATION PLANS AND AGREEMENTS

- Amphibian Conservation Action Plan Proceedings: International Union for Conservation of Nature/Species Survival Commission Amphibian Conservation Summit 2005
- California Partners in Flight (CalPIF) North American Landbird Conservation Plan (2004, 2016 revision)
- CalPIF Coniferous Forest Bird Conservation Plan (2002)
- CalPIF Coastal Scrub/Chaparral Bird Conservation Plan (2004)
- CalPIF Grassland Bird Conservation Plan (2000)
- CalPIF Oak Woodland Bird Conservation Plan (2002)
- CalPIF Riparian Bird Conservation Plan (2004)
- CalPIF Sagebrush Bird Conservation Plan (2005)
- CalPIF Sierra Nevada Bird Conservation Plan (1999)
- North American Waterfowl Management Plan (Original 1986, 1998, 2004, updated 2012 and 2018)
- Fish Habitat Action Plan, California Fish Passage Forum Fish Habitat Partnership, California Fish Passage Forum Strategic Framework 2013-2018 (2013)
- Fish Habitat Action Plan, Desert Fish Habitat Partnership, Framework for Strategic Conservation of Desert Fishes (2015)
- Fish Habitat Action Plan, Pacific Marine and Estuarine Fish Habitat Partnership Strategic Framework 2018–2022 (2018)

- Fish Habitat Action Plan, Reservoir Fisheries Habitat Partnership, A Framework for Strategic Conservation of Fish Habitat In the Reservoir Systems of the United States 2018–2022 (2018)
- Fish Habitat Action Plan, The California Salmon Stronghold Initiative (2012)
- Fish Habitat Action Plan, Western Native Trout Initiative A Plan for Strategic Actions (2007)
- Freshwater Mussels of the Pacific Northwest (2009)
- Green Diamond Forest Habitat Conservation Plan (2018)
- Humboldt Bay Harbor Recreation and Conservation District, Humboldt Bay Management Plan (2007)
- Sierra Pacific Industries Habitat Conservation Plan for Northern and California Spotted Owl (2020)

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Appendix F

Best Management Practices

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TABLE OF CONTENTS

Chapter

Page

APPENDIX F. BEST MANAGEMENT PRACTICES	F- I
F.1 Introduction	F- I
F.1.1 What are Best Management Practices?	F- I
F.1.2 Selection, Application, and Monitoring of BMPs	F- I
F.2 BMPs to Protect Water Quality	F-2
F.3 BMPs to Protect Wildlife and Vegetation, Including Pollinators	F-20
F.4 BMPs for Pesticide Application and Integrated Pest Management.....	F-21
F.5 BMPs for Wildland Fire Management	F-21
F.6 BMPs to Protect Migration/Movement Corridors	F-22
F.7 BMPs to Protect Late Successional Forest for Northern Spotted Owl, Pacific Fisher, and Marbled Murrelet	F-22
F.8 BMPs to Protect Riparian and Wetland Habitats, and Vernal Pools	F-23
F.9 BMPs to Protect Fresh Water Mussels	F-23
F.10 BMPs to Protect Cave and Karst Resources	F-23
F.11 BMPs to Protect Air Quality	F-24
F.12 BMPs to Protect Visual Resources	F-25
F.13 BMPs related to Renewable Energy Development.....	F-26
F.14 Other BMP Resources.....	F-26
F.14.1 Climate Change.....	F-26
F.14.2 Post-Fire.....	F-27
F.14.3 Biological Soil Crusts	F-27
F.14.4 Vegetation and Forestry.....	F-27

TABLES

Page

2a	Water Bar Spacing (feet) by Gradient and Erosion Class.....	F-15
2b	Soil Ground Cover Needed to Protect Soils.....	F-15

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Appendix F. Best Management Practices

F.1 INTRODUCTION

F.1.1 What are Best Management Practices?

Best management practices (BMPs) are state-of-the-art resource protection measures applied on a site-specific basis to reduce, prevent, or avoid adverse environmental or social impacts. Use of BMPs is required by the Clean Water Act (33 U.S.C 1251 et seq.) to reduce nonpoint source pollution to the maximum extent practicable, so often BMPs focus on protecting water quality. However, in this Appendix, the BLM has compiled BMPs that address the protection of various other resources as well.

The BMPs described in this appendix are methods, measures, or practices selected based on site-specific conditions to ensure that the BLM would protect resources at the highest practicable level to meet resource condition objectives set forth in this RMP, in BLM policy, and in state and federal laws. These site-specific BMPs are a compilation of commonly employed practices developed through professional experience or research and designed to minimize resource impacts. The BMPs include, but are not limited to, avoidance, structural and nonstructural treatments, operations, and maintenance procedures. Although normally preventative, BMPs can be applied before, during, and after pollution-producing activities to reduce or eliminate impacts. The implementation of these BMPs would be the beginning of an iterative process that includes the monitoring and modification of BMPs, where needed, to achieve resource protection goals.

The management direction found throughout the RMP in the description of the alternatives (**Appendix B**) can sometimes overlap with resource protection measures found in the BMPs. Where a resource protection measure would apply to all actions on all sites (either in a specific special designation or across the decision area), the BLM presents the measure as management direction. Where the applicability of a specific measure would depend upon site-specific conditions, technical feasibility, resource availability, and the resource potentially affected, the BLM presents the measure as a BMP. However, it should be noted, that there is management direction throughout the plan to apply BMPs to the maximum extent possible in order to protect resources.

The BMPs provided in this appendix are considered a starting point; other creative approaches developed during project specific NEPA analyses or through emerging science may also be appropriate. New BMPs may be incorporated into use by the BLM as new resources such as BLM handbooks, Instruction Memorandum, or agreements with state or federal agencies are developed. The list gathered here is not considered comprehensive but provides a strong basis to work from.

F.1.2 Selection, Application, and Monitoring of BMPs

For implementation actions under this RMP, BLM decision-makers will select the appropriate and applicable BMPs, using input from BLM staff. The BLM will select BMPs based upon site-specific conditions, technical feasibility, resource availability, and the resources potentially impacted. Not all of the BMPs listed will be selected for any specific management action. The BMPs below do not provide an exhaustive list and the BLM may identify additional resource protection measures during project-level planning and analysis. The BLM will select and apply BMPs in a manner that would be in conformance with all RMP management direction. The BLM will select and apply BMPs in coordination with outside agencies including

but not limited to the Army Corps of Engineers, California Water Quality Control Boards, USFWS, and NMFS. BMPs and other resource protection measures which are identified during the planning phase will be translated into contract provisions, right-of-way stipulations, special use authorization requirements, project plan specifications, and other similar documents in order to make sure they are followed during project implementation.

The BLM will monitor the application of BMPs through implementation and effectiveness monitoring. Post-project implementation monitoring of selected BMPs will evaluate whether the BLM successfully applied the BMPs which were identified during planning phases. Effectiveness monitoring will evaluate whether selected BMPs meet resource protection standards and criteria. The BLM would modify BMPs if monitoring demonstrates that resource protection standards and criteria are not being met.

F.2 BMPs TO PROTECT WATER QUALITY

Water Quality BMPs are primarily from “Best Management Practices for Water Quality, Bureau of Land Management California, September 2022.”

BMP Number	Best Management Practices for Operations in or near Aquatic Ecosystems
AQ 01	For BLM-permitted activities, no hazardous materials storage with 0.25 mile of centerline of designated Wild and Scenic Rivers, within Riparian Management Areas and near permanent water sources.
AQ 02	For short term projects (up to 2 weeks), small amounts of fuel (up to 20 gallons) for staging activities associated with restoration activities may be stored outside the Riparian Management Areas. If fuel over 20 gallons is left at staging area, ensure proper signage is present and provide secondary containment to prevent accidental movement of fuel over the surface to a stream or water body. Fuel and service equipment used for instream, Riparian Management Areas, or riparian work (including chainsaws and other hand power tools) only in designated areas more than 300 feet from stream or another aquatic habitat. On a case-by-case basis, fueling inside the Riparian Management Areas could occur (i.e., when a road is present so that during the dry season that location might be the safest place to refuel). A Spill kit must be present when fueling within 300 ft of a stream.
AQ 03	Fuels, chemicals, or fertilizer shall not be stored on the active floodplain or Riparian Management Areas of any waterbody. All hazardous materials and petroleum products will be stored in durable containers located at least 500 feet from streams, springs, and wetlands. Spill kits will be present. Secondary containment would be required to prevent fuel or other materials from moving down slopes into streams.
AQ 04	Conduct equipment maintenance outside Riparian Management Areas, wetlands, or stream to avoid contamination of water. Locate equipment washing sites in areas with no potential for runoff into wetlands, Riparian Management Areas, floodplains, and Waters of the State. Do not use solvents or detergents to clean equipment on site.
AQ 05	Use non-oil-based dust suppressants such as water, within Riparian Management Areas to prevent contamination of surface and groundwater water quality.
AQ 06	Locate all new high recreational use sites outside Riparian Management Areas to protect water quality.
AQ 07	Plan, locate, design, construct, operate, inspect, and maintain sanitary facilities to minimize water contamination. Sanitation facilities should not be placed within the 100- year floodplain or Riparian Management Areas.

BMP Number	Best Management Practices for Operations in or near Aquatic Ecosystems
AQ 08	Require self-contained sanitary facilities when long-term camping (greater than 14 days) is involved with permit or contract implementation.
AQ 09	Provide self-contained sanitary facilities when there is high recreational use (campgrounds or dispersed camp areas, temporary camp for an OHV recreational activity, temporary camp due to horse roundup) inside Riparian Management Areas.
AQ 10	Locate pack animal and riding facilities outside Riparian Management Areas to protect water quality.
AQ 11	<p>Water Sources: when locating proposed water developments for livestock or other uses, evaluate feasibility of use; and techniques for protecting original water source.</p> <p>Springs used for water source should retain enough water for riparian vegetation and water for rare plant species. Water sources designed for permanent installation, such as piped diversions to off-site trough, are preferred over temporary, short-term-use developments especially when wildlife friendly fences are built to protect the original source.</p>
AQ 12	Basins shall not be constructed at culvert inlets for the purpose of developing a waterhole for drafting, as these can exacerbate plugging of the culvert.
AQ 13	<p>Water sources: excavation of lakeshore, streambed, or bank materials for approaches for permanent water intakes are subject to State or federal restrictions on streambed alteration and ground-disturbing activities that can contribute sediment to a watercourse or aquatic habitat. Therefore, without the appropriate permits, these excavations should not occur. In addition, the following restrictions may apply:</p> <p>Permitted excavations should not occur during wet season. The wet season will vary dependent on location risk and timing of storms. Generally, from October 15-May 15 is when storms can come and runoff from snow occurs, but this can vary dependent on location.</p> <p>Prior to excavation, federally listed threatened and endangered species, BLM sensitive species (including State-listed), management indicator species, and aquatic organisms of interest shall be considered and appropriate avoidance, minimization, and mitigation measures shall be implemented based on federal, state or local permitting agency requirements.</p>
AQ 14	Water sources: avoid use of road fills for permanent water impoundment dams unless specifically designed for that purpose. Impoundments over 9.2-acre-feet or 10 feet in depth will require a dam safety assessment by a registered engineer. Upgrade existing road fill impoundments to pass 100-year flood events.
AQ 15	<p>Water sources: locate access approaches for water developments as perpendicular as possible to prevent spring or stream bank damage.</p> <p>Access approaches are stabilized with appropriate materials, depending on expected life and use frequency of the developed water source. Use a drafting pad for water source placed above the bank full elevation of the channel with little or no excavation and/or fill placement to create drafting pad.</p> <p>Protections to reduce erosion from rain or snowmelt should spread flows off pad and not directly into watercourse. Site should be rehabilitated when pad is no longer needed to minimize erosion.</p>

BMP Number	Best Management Practices for Operations in or near Aquatic Ecosystems
AQ 16	<p>All water intake, screening, and pumping should comply with NMFS Fish Screening criteria (NMFS 2022): https://www.fisheries.noaa.gov/resource/document/anadromous-salmonid-passage-facility-design-manual</p> <p>For dewatering or similar activities:</p> <ul style="list-style-type: none"> - All pumps, pipes and other diversion materials, and any construction debris and materials shall be removed from the stream channel upon in-water work completion. - Water from pumps should be discharged to an upland location in a manner that the water does not drain overland back to the stream channel (or another method that does not degrade water quality). <p>When diverting water from streams for water sources, in stream flows shall be maintained that ensure unimpeded fish passage. The channel must not be dewatered to the point of isolating pools and dewatering riffles or to hinder any life stage of fish. Sensitive plants habitat must be maintained.</p>
AQ 17	<p>Water sources, if gravity-fed storage tanks or troughs are employed, shall utilize the following:</p> <p>Water storage tanks shall be fitted with properly sized pipes designed to bring minimal flows to the tank.</p> <p>Outflow pipes shall be sized to fully contain the tank overflow and cleanly return to the downstream areas of the spring or streams. It should be designed to withstand trampling.</p> <p>Water storage tank return pipes at the water outfall area shall be armored to prevent erosion of watercourse banks or wetlands.</p>
AQ 18	<p>Water sources: File Initial Statement of Water Diversion and Use with State Water Resource Control Board as required. Claim riparian use and record point of diversion (POD) location, water source name, place of use location, purpose of use, diversion works description, quantity of water diverted per month in gallons using on-line reporting.</p>
AQ 19	<p>Drafting Operations: for dust control or water tanker: if an existing off-site storage or more permanent water source such as a reservoir or manmade pond is not available, then the following locations shall be considered for drafting water:</p> <p>Use sites where approaches are hydrologically disconnected from streams.</p> <p>Flowing side channels rather than the main thread of the channel can be used for drafting if access is easier.</p> <p>Areas with existing deeper pools if access is close by.</p>
AQ 20	<p>Temporary dams created to divert flows (e.g., around a culvert or bridge being replaced) shall be removed when operations are complete or before winter weather, whichever comes first.</p> <p>Flow should be put into a large temporary pipe and sent down stream as this is often necessary even for small streams.</p> <p>Downstream temporary dams should be placed to catch sediment coming from site</p> <p>Removal of all temporary dams shall be done so that accumulated sediment is not discharged into the stream flow.</p>
AQ 21	<p>Drafting Operations: All water drafting within anadromous streams will follow the most recent NMFS guidelines.</p>

BMP Number	Best Management Practices for Operations in or near Aquatic Ecosystems
AQ 22	<p>Drafting Operations: Trucks directly drafting from the channel shall utilize the following practices: No more than one truck at the same location or stream reach and time shall occur. No truck will enter the area below the high-water elevation and will stay on an existing road when feasible.</p> <p>Road approaches and drafting pads shall be treated to prevent sediment production and delivery to a watercourse or waterhole. This will include armoring as necessary from the end of the approach nearest a stream for a minimum of 50 feet, or to the nearest drainage structure (for example, waterbars or rolling dip) or point where road drainage does not drain toward the stream. Intakes for trucks, shall be placed parallel to the flow of water.</p>
AQ 23	<p>Drafting Operations: When drafting from the channel utilize the following practices: Do not place pump intakes on the substrate or edges of the stream channel. When placing intakes instream, place on hard surfaces (e.g., shovel and rocks) to minimize turbidity. Where overflow runoff from water trucks or storage tanks may enter the stream, effective erosion control devices shall be installed (for example, gravel berms or waterbars). Areas subject to high flood events shall be armored to prevent erosion and sediment delivery to water courses.</p> <p>At the end of drafting operations, intake screens shall be removed, and drafting pipes plugged, capped, or otherwise blocked or removed from the active channel to terminate water drafting during the off season.</p> <p>Use a temporary liner to create intake site. After completion of use, remove liner and restore channel to natural condition. Screen intakes with opening size consistent with the protection of aquatic species</p>
AQ 24	<p>Drafting Operations: Trucks directly drafting from the channel shall utilize the following practices: All water-drafting vehicles shall be checked daily and shall be repaired as necessary to prevent leaks of petroleum products and aquatic invasive species from entering Riparian Management Areas.</p> <p>Water-drafting vehicles shall contain petroleum-absorbent pads, which are placed under vehicles or portable pumps before drafting.</p> <p>Water-drafting vehicles shall contain petroleum spill kits. Dispose of absorbent pads according to the Hazardous Response Plan.</p>
AQ 25	<p>Minimize the frequency and number of passes for heavy equipment through low water crossings. Restrict heavy equipment watercourse crossings to designated locations only.</p> <p>Time operations near streams or Riparian Management Areas to driest time of year to reduce soil compaction and erosion from banks and sedimentation in streams water crossing timing may be adjusted to provide species and life stage-specific protections (e.g., avoid winter-run Chinook during dry season).</p>
AQ 26	<p>Revegetate disturbed areas to prevent soil erosion and stream sedimentation in the fall prior to the wet season or when vegetation has the greatest chance of successful transplant or germination. Otherwise treat disturbed areas by covering with straw or other methods to protect soil. Leave cut stumps/roots intact where appropriate to help stabilize soil.</p>
AQ 27	<p>When invasive species cannot be effectively eliminated by hand pulling, selective herbicide use within Riparian Management Areas must follow all guidelines in Herbicide PEIS or the most recent agency guidance. Restrict herbicide use to only those that are designed for use within 100 feet of Waters of the State and have been shown to have no effects on aquatic species.</p>

BMP Number	Best Management Practices for Spill Prevention and Abatement
SP 01	Have absorbent containment materials present at work sites and places where fueling or use of other hazardous materials may take place. Take immediate action to stop and contain leaks or spills of chemicals and other petroleum products. Notify the California Department of Fish and Wildlife Office of Spill Prevention and Response, through the office's Hazardous Materials specialist, and the State Water Board of any spill that enters the Waters of the State.
SP 02	Spill Prevention, Control, and Countermeasure Plan (SPCCP): All operators, contractors, and all other individuals involved in work shall develop a modified SPCCP prior to initiating project work if there is a potential risk of chemical or petroleum spills near waterbodies. The SPCCP will include the appropriate containers and design of the material transfer locations.
SP 03	Spill Containment Kit (SCK): All operators, contractors, and all other individuals involved in work shall have a SCK as described in the SPCCP on-site during any operation with potential for run-off to adjacent waterbodies. The SCK will be appropriate in size and type for the oil or hazardous material carried by the operator.
SP 04	All operators, contractors, and all other individuals involved in work shall be responsible for the clean-up, removal, and proper disposal of contaminated materials from the site.
SP 05	Prevent spills of hazardous materials by requiring: Spill Prevention, Control, and Countermeasure Plan (SPCCP) when applicable (1,320 gallons cumulative capacity for storage of oil and/or hazardous material, potential impact to Waters of the U.S., or causing unnecessary or undue degradation, as required by federal law), and secondary containment of all hazardous materials in 55-gallon drum capacity and greater. Material to absorb a spill of fuel or other hazardous liquids if working near Riparian Management Areas or streams is required.
SP 06	Inspect and clean heavy equipment as necessary prior to moving on to the project site, to remove oil and grease, noxious weeds, and excessive soil. Inspect hydraulic fluid and fuel lines on heavy-mechanized equipment for proper working condition daily before entering Riparian Management Areas or streams or other waterbodies. Equipment refueling will follow guidelines in Aquatic Resources section to prevent toxic materials from entering waterways. Refuel small equipment (e.g., chainsaws and water pumps) at least 300 feet from waterbodies (In certain situations, fueling within 300 feet of a stream or Riparian Management Areas would be acceptable (i.e., when a road or other feature makes fueling at that location the safest and most logical place to refuel or as far as possible from the waterbody where local site conditions do not allow a setback) to prevent direct delivery of contaminants into a waterbody. Refuel small equipment from no more than 5-gallon containers. Use absorbent material or a containment system to prevent spills when re-fueling small equipment within the stream margins or near the edge of waterbodies. If large amounts of fuel or other hazardous liquids are stored use secondary containment requirements for fuel storage areas such as a catchment basin or soil berms.
SP 07	In the event of a spill or release, take all reasonable and safe actions to contain the material. Specific actions are dependent on the nature of the material spilled. Notify the State's Water Board or other environmental regulator when fuel is spilled with the potential to impact surface or ground water.
SP 08	Use spill containment booms or as required. Have access to booms and other absorbent containment materials. Immediately remove waste or spilled hazardous materials (including but not limited to diesel, oil, hydraulic fluid) and contaminated soils and dispose of it/them in accordance with the applicable regulatory standard. Notify the California Department of Fish and Wildlife Office of Spill Prevention and Response of any spill over the material reportable quantities, and any spill not totally cleaned up after 24 hours. Store equipment containing reportable quantities of toxic fluids outside of Riparian Management Areas.

BMP Number	Best Management Practices for Restoration Activities
RST 01	Confine work in the stream channels to the in-water work period. Construct new stream crossings when streams are dry or when stream flow is at its lowest. These times may vary if sensitive aquatic species are present or in differing parts of the state. This may be extended if no precipitation is forecast over the following three days and mulch and erosion control materials are stockpiled onsite to be deployed in the event of rainfall occurring.
RST 02	In meadows and other aquatic habitat (e.g., meadow streams), do not drive heavy equipment in flowing channels and floodplains when wet. Do not drive heavy equipment in the Riparian Management Areas in wet conditions when such use could result in soil compaction and displacement. Prohibit heavy equipment from entering flowing water, unless at a preapproved crossing. Avoid and minimize heavy equipment passage at crossings where water is flowing.
RST 03	In well-armored channels that are resistant to damage (e.g., bedrock, small boulder, and cobble-dominated), consider conducting the majority of heavy- equipment work from within the channel, during low streamflow, to minimize damage to sensitive Riparian Management Areas.
RST 04	Design access routes for individual work sites to reduce exposure of bare soil and to minimize compaction and soil disturbance to wet meadows and floodplains.
RST 05	Limit the number and length of equipment access points through Riparian Management Areas. Locate equipment storage areas outside of Riparian Management Areas, including machinery used in stream channels for more than one day, following BMPs in the Spill Prevention and Abatement section.
RST 06	Limit the amount of stream bank excavation to the minimum necessary to ensure stability of enhancement structures. Avoid working in the wetted channel by diverting flow around work site. Excavated material should be removed and placed where it cannot reenter the stream during precipitation or flood events. If materials will remain on site, they should have permanent stabilization measures applied (such as regrading to match surrounding and revegetation).
RST 07	Rehabilitate headcuts and gullies. Use large wood in preference to rock weirs if available. Enter these areas during the driest time to minimize soil compaction and diversion of flows.
RST 08	Prior to the wet season, stabilize disturbed areas where soil will support seed growth, with the potential for sediment delivery to wetlands and streams. Apply native seed and certified weed-free mulch or erosion control matting in steep or highly erodible areas, or within Riparian Management Areas. Adjust techniques if amphibians present due to entanglement in matting.
RST 09	Implement measures to control turbidity. Measures may include installation of turbidity control structures (e.g., isolation, diversion, and silt curtains) immediately downstream of instream restoration work areas. Remove these structures following completion of turbidity-generating activities. Ensure that sediment trapped does not discharge into watercourse and dispose of in location where sediment will not move after precipitation into the waterbody.
RST 10	When replacing culverts, consider using larger culverts and embedding (see definition p. 48) the culvert to 30 percent bedload. Use bridges on high-gradient stream channels.
RST 11	When mowing of meadow edges or pockets of dry areas of meadows is required to reduce encroachment by upland species, enter during the driest time of year.
RST 12	Use low-PSI equipment for work in meadow environments. For meadow restoration enter with heavy equipment during the driest period.
RST 13	Use waterbars, barricades, seeding, and mulching to stabilize bare soil areas along project access routes prior to the wet season. Since access routes can become compacted to the point that vegetative recovery is difficult consider loosening the topsoil layer on slopes less than 1 percent prior to seeding or mulching

BMP Number	Best Management Practices for Stream Crossings for Roads
SC 1	<p>Conduct all nonemergency in-water work during the instream work window to avoid effects on listed or sensitive aquatic species. In-water work should be done when flows are at their lowest. If water is flowing at the time of stream crossing removal, divert and/or isolate flows from the active work area. Avoid sediment and turbidity entering streams during in-water work to the extent practicable.</p> <p>Remove stream crossing culverts and entire in-channel fill material during the instream work period and/or when there is no water flowing through the channel.</p> <p>The instream work period is defined as the period when low base flows occur. June 15 through September 30 could be considered a base flow period where no summer or monsoonal rains occur. It is preferable to time the work when ephemeral or desert streams are dry. These times may vary if sensitive aquatic species are present or in differing parts of the state. This may be extended if no precipitation is forecast over the following three days and mulch and erosion control materials are stockpiled onsite to be deployed in the event of rainfall occurring.</p>
SC 2	<p>Design the stream crossings to pass the 100-year flood flow plus associated sediment and debris; armor to withstand designed flows and to provide desired passage of fish and other aquatic organisms.</p>
SC 3	<p>When it is necessary to divert or dewater stream flow during crossing installation ensure that: All crossings whether structures are being placed or removed shall be protected from siltation, all stages of life for fish or amphibians must be protected.</p> <p>Suitable measures are used to divert or partition channelized flow around the site or to dewater the site as needed.</p> <p>Aquatic organisms are removed from the construction area before dewatering and prevent organisms from returning to the site during construction.</p> <p>Clean flows are returned to channel or water body downstream of the activity.</p> <p>Direct pass-through flow or overflow from in-channel and any connected off-channel water developments go back into the stream downstream of the site.</p> <p>Flows are restored to their natural stream course as soon as possible after construction or prior to seasonal closures.</p> <p>Downstream collection basins, retention facilities, or filtering systems are installed as needed to capture and retain turbid water.</p> <p>Collected sediment is removed as needed to maintain their design capacity during the life of the project.</p>
SC 4	<p>Reduce hydrologic connection between road surface drainage or ditchline and stream crossings. Locate and design crossings to minimize disturbance to the waterbody.</p> <p>Use structures appropriate to the site conditions and traffic levels:</p> <p>Favor bridges, bottomless arches, or buried pipe-arches for those streams with identifiable floodplains and elevated road prisms, instead of pipe culverts.</p> <p>Place bridge and arch footings below the scour depth for the 100-year flood flow plus the appropriate factor of safety as determined by road engineers.</p> <p>Favor armored fords for those streams where vehicle traffic is either seasonal or temporary. For perennial streams, use vented fords, so that the crossing can pass low flows.</p>
SC 5	<p>Minimize fill volumes at permanent stream crossings by restricting width and height of fill to amounts needed for safe travel and adequate cover for culverts.</p> <p>For deep fills (generally greater than 15 feet deep), incorporate additional design criteria (e.g., rock blankets, buttressing, bioengineering techniques) to reduce the susceptibility of fill failures.</p> <p>A rolling dip, or simple diversion prevention dip) will eliminate stream diversion potential. For very small stream crossings and for cross drains, a waterbar may suffice.</p>

BMP Number	Best Management Practices for Stream Crossings for Roads
SC 6	Prevent culvert plugging and failure in areas of active debris movement with measures such as beveled culvert inlets, flared inlets, wingwalls, over-sized culverts, trash racks, or slotted risers. Larger culverts or arched culverts will pass debris better and accommodate bed movement. Trash racks can be high maintenance; it is more effective to size the crossing for 100-year floods and debris from watershed.
SC 7	To reduce the risk of loss of the road crossing structure and fill causing excessive sedimentation, use bridges or low-water fords when crossing debris-flow susceptible streams. Avoid using culverts when crossing debris-flow susceptible streams when practicable.
SC 8	Locate stream-crossing culverts on well defined, unobstructed, and straight reaches of stream. Locate these crossings as close to perpendicular to the streamflow as stream allows. When structure cannot be aligned perpendicular, provide inlet and outlet structures that protect fill, and minimize bank erosion. Choose crossings that have well-defined stream channels with erosion-resistant bed and banks.
SC 9	Install culverts at the natural stream grade, unless a lesser gradient is required for fish, amphibian, or reptile passage. Stream crossings with ESA-listed fish must meet NMFS fish passage design criteria unless barriers to passage are required to protect from invasive species. Aquatic Organism Passage Projects include culvert and bridge replacements or removals. Head cut and grade stabilization may need to be done to ensure fish amphibian, reptile, and other species passage. Improperly designed/installed culverts could impede movements of federal or state listed amphibian or reptile species.
SC 10	Design stream crossings to prevent diversion of water from streams into downgrade road ditches or down road surfaces if the crossing is blocked by debris or overtopped during storm events. This protection could include hardening crossings, armoring fills, dipping grades, diversion prevention dips, oversizing culverts, hardening inlets, and outlets, and lowering the fill height. Place instream grade control structures above or below the crossing structure, if necessary, to prevent stream head cutting, culvert undermining and downstream sedimentation. Sizing the structure to fit the watershed 100-year floods tends to prevent these issues.
SC 11	Utilize stream diversion and isolation techniques when installing stream crossings. Evaluate the physical characteristics of the site, volume of water flowing through the project area and the risk of erosion and sedimentation when selecting the proper techniques.
SC 12	Limit activities and access points of mechanized equipment to streambank areas or temporary platforms when installing or removing structures. Keep equipment activity in the stream channel to an absolute minimum.

BMP Number	Best Management Practices for Stream Crossings for Roads
SC 13	<p>Minimize streambank and riparian area excavation during construction of crossings:</p> <p>Install temporary culverts and washed rock with sufficient size to avoid erosion on top of a low-water ford to reduce vehicle contact with water during active haul. Remove culverts promptly after use or before high flows unless culvert built to the 100-year flood capacity.</p> <p>Stabilize adjacent areas disturbed during construction using surface cover (mulch), retaining structures, and or other stabilization methods. Stabilization of the approaches usually require 50 or more feet of rock materials to prevent tracking of sediment into the watercourse. See Weaver 2015 (p.213 Guidelines for erosion and sediment control application) or similar guidance.</p> <p>Keep excavated materials out of channels, floodplains, wetlands, and lakes. Excavated material should be removed and placed where it cannot reenter waterbodies during precipitation or flood events. Banks of the stream, water body, or in Riparian Management Areas are not appropriate.</p> <p>Install silt fences or other sediment- and debris-retention barriers between the water body and construction material stockpiles and wastes.</p> <p>Use only clean, suitable materials that are free of toxins and invasive species for fill.</p> <p>Size competent rock fills to avoid or minimize erosion. Fill must be free of organic materials and preference should be to use locally sources fill.</p>
SC 14	Install stream crossing structures before heavy equipment moves beyond the crossing area.
SC 15	<p>Use no-fill structures (e.g., portable mats, temporary bridges, or improved hardened crossings) for temporary stream crossings. Harden low-water ford approaches with durable materials that can withstand erosive forces. These low water fords are not appropriate in high energy systems nor where moderate traffic occurs. For small first and second order streams this may be appropriate. When not practicable, design temporary stream crossings with the least amount of fill and construct with coarse material to facilitate removal upon completion.</p> <p>Provide cross drainage on approaches. Limit temporary ford crossings to the instream work period (see SC 01 for definition).</p>
SC 16	Restrict access to temporary unimproved low-water stream crossings. Improve crossings where traffic indicates frequent use. Use bridges where traffic is heavy to protect the streams.
SC 17	When installing temporary culverts, use washed rock of a size to withstand erosion as a backfill material. Rock must be large enough to withstand normal flows. Use geotextile fabric as necessary where washed rock will spread with traffic and cannot be practicably retrieved. Remove culverts promptly after use and prior to the wet season or when storms are expected.
SC 18	Temporary fill crossings must be removed after use and prior to the wet season. Removal shall be done so that accumulated sediment is not discharged into the stream flow. Follow practices under the Closure/Decommissioning section for removing stream crossing drainage structures and reestablishing the natural drainage.
SC 19	When removing temporary crossings, restore the waterbody profile and substrate to pre-project conditions.
SC 20	When removing silt fences and other non-biodegradable sediment controls care must be taken not to release sediment into water courses. Banks of the stream, water body, or in Riparian Management Areas are not appropriate. Place sediment where it cannot wash back into waterbody after rain.

BMP Number	Best Management Practices for Road Construction and Reconstruction
R 01	Implement an approved Best Management Practices checklist, operating or erosion control plan that covers all disturbed areas, including borrow areas and stockpiles used during road management activities. Follow operations for wet weather (below). The need for an Erosion Control Plan will be set by the scope and complexity of the project and its potential to cause erosion and deposition in streams.
R 02	Maintain erosion-control measures to function effectively throughout the project area during road construction and reconstruction, and in accordance with the approved Best Management Practices and erosion control plan.
R 03	When new roads or reconfigurations of old roads are necessary, locate roads and landings to reduce total transportation system mileage. Relocate roads and landings outside of Riparian Management Areas wherever possible. Renovate or improve existing roads or landings when it would cause less adverse environmental impact. Where roads traverse land in another ownership, investigate options for using those roads before constructing new roads. Locate temporary (see definitions p. 48) and permanent roads and landings on stable locations, e.g., ridge tops, stable benches, or flats, and gentle-to-moderate side slopes to minimize erosion impacts. Minimize road construction on steep slopes (> 50 percent).
R 04	Confine new roads to the construction limits of the permanent roadway to reduce the amount of area disturbed and do not design for deposition in wetlands, Riparian Management Areas, floodplains, and Waters of the State.
R 05	Avoid road or landing locations in Riparian Management Areas. If no other feasible options exist, prevent and minimize discharges of sediment to surface waters (see BMPs for Operations in or near Aquatic Ecosystems, spill prevention and abatement, and stream crossings for additional BMPs). Do not put landings in Riparian Management Areas.
R 06	Avoid locating landings in areas that contribute to runoff and erosion. Use methods to minimize erosion. Hydrologic connectivity between landings and waterbodies should be kept to an absolute minimum or completely reduced. Install temporary drainage, erosion, and sediment control structures to route runoff from the road to a stabilized area (i.e., vegetated area, sediment basin or riprap lined ditch), and away from watercourses. In unstable areas, stabilize slopes with straw wattles or rock. When on steep or unstable slopes (follow methods Table 1a and Table 2b listed below this section) in order to avoid erosion from road surfaces. Storm proof (see section below in the Road Construction and Reconstruction section) or close roads under construction or reconstruction prior to the onset of the wet season.
R 07	Design (prior to building) temporary roads to either avoid or access sensitive areas at specific locations. Decommission temporary roads upon completion of use. Storm proof before the wet season if project is not completed. Subsoil (i.e., rip) temporary roads where needed to lessen detrimental soil conditions, minimize surface runoff, improve soil structure, and water movement through the roadbed. See also Road Maintenance section for Road Closure and Decommissioning BMPs.
R 08	Design roads to the minimum width needed for the intended use as referenced in BLM Manual 9113 – I – Roads Design Handbook (USDI BLM 2011). Where in-sloped roads are proposed, design inboard ditches to reduce hydrologic connectivity and maintenance requirements.
R 09	Design road cut and fill slopes with stable angles, to reduce erosion and prevent slope failure. Locate and designate waste areas before operations begin.
R 10	Design and construct sub-surface drainage (e.g., trench drains using geo-textile fabrics and drainpipes) in landslide-prone areas and saturated soils. Minimize or eliminate new road construction in these areas.

BMP Number	Best Management Practices for Road Construction and Reconstruction
R 11	<p>To protect Waters of the State from sedimentation and other pollutants from roadways: Locate roads and landings away from wetlands, Riparian Management Areas, floodplains, and other Waters of the State.</p> <p>Minimize roads within Riparian Management Areas, use only for stream crossings. See Stream Crossings below.</p> <p>Locate temporary and permanent road construction or improvement to minimize the number of stream crossings.</p> <p>Do not fill wetlands, do not design roads through meadows. If a wetland or meadow must be crossed use a bridge design that does not block floodplain flows.</p> <p>If a road must go through a Riparian Management Areas, use bridges or spans, and elevate road over drainages to minimize disruption of floodplain flows in Riparian Management Areas.</p>
R 12	<p>Excavated material should be removed and placed where it cannot reenter the stream or water bodies during precipitation or flood events. Do not place such materials on slopes with a high risk of mass failure, in areas subject to overland flow or seasonally saturated areas, or within 100 feet of perennial streams or wetlands, floodplains, and unstable areas to minimize risk of sediment delivery to Waters of the State. Apply surface erosion control prior to the wet season.</p> <p>Deposit and stabilize excess and unsuitable materials only in designated site where there are no potential for sediment to discharge to a watercourse.</p> <p>Provide adequate surface drainage and erosion protection at disposal sites.</p> <p>Construct road fills to prevent fill failure using inorganic material, compaction, buttressing, sub-surface drainage, rock facing, or other effective means.</p>
R 13	<p>Use controlled blasting techniques to minimize loss of material on steep slopes or into wetlands, Riparian Management Areas, floodplains, and Waters of the State.</p> <p>Restrict blasting after intense storms when soils are saturated.</p>
R 14	<p>Schedule operations when rain, runoff, wet soils, snowmelt, or frost melt are less likely. Follow seasonal restrictions, as outlined in an approved Best Management Practices checklist, operating or erosion control plan.</p> <p>Stabilize project area during normal operating season when the National Weather Service predicts a 30 percent or greater chance of precipitation, such as localized thunderstorm or approaching frontal system.</p> <p>Complete all necessary stabilization measures prior to predicted precipitation that could result in surface runoff.</p> <p>Close roads during wet weather conditions when ground conditions could result in excessive rutting (greater than 2 inches), soil compaction (except on the road prism or other surface to be compacted), or runoff of sediments directly to streams</p>
R 15	<p>Use temporary sediment control measures (e.g., check dams, silt fencing, bark bags, filter strips, and mulch) to slow runoff and contain sediment from road construction areas.</p> <p>Remove any accumulated sediment and the control measures when work or haul is complete.</p> <p>When long-term structural sediment control measures are incorporated into the approved Best Management Practices checklist, operating or erosion control plan, remove any accumulated sediment to retain capacity of the control measure.</p>
R 16	<p>Do not permit sidcasting within or close to streams or wetlands. Prevent stockpiled excavated materials from entering water ways or within 100 feet of perennial or intermittent streams.</p>
R 17	<p>Fully suspend logs, pipes, posts, and other transported materials when crossing waterbodies, or streams and their Riparian Management Areas.</p>

BMP Number	Best Management Practices for Road Construction and Reconstruction
R 18	Construct new stream crossings when streams are dry or when stream flow is at its lowest. Install sediment controls to reduce sedimentation. See Stream Crossings section for additional BMPs.
R 19	On slopes greater than 40 percent, the organic layer of the soil shall be removed prior to fill placement, according to project specifications. Soil can then be reused where needed to establish vegetation.
R 20	Stabilize all disturbed areas with mulch, erosion fabric, vegetation, rock, large organic materials, engineered structures, or other stabilization measures according to the approved Best Management Practices checklist, operating or Erosion Control Plan, and project specifications and drawings for permanent controls (e.g., crib walls, gabions, or riprap placement).
R 21	Waste organic material, such as uprooted stumps, cull logs, accumulations of limbs and branches, and unmerchantable trees, shall not be buried in logging road or landing fills. Dispose of waste organic material according to project specifications, in locations designated for waste disposal. Assure compliance with the project approved Best Management Practices checklist, operating or erosion control plan.
R 22	Monitor contractor's plans and operations to assure contractor does not open more ground than can be substantially completed before expected wet seasons shutdowns unless erosion-control measures are implemented.
R 23	Scatter construction-generated slash on other disturbed areas to help control erosion. Windrow slash at the outlet of water bars on outsloped roads Do not use slash in -inboard ditches Windrow slash at the base of fill slopes to reduce sedimentation. Ensure that windrows are placed along the contour and that there is ground contact between slash and disturbed slope.
R 24	Accommodate drainage with adequate temporary crossings (addressed in the Stream Crossings section) during construction. Disconnect road runoff to the stream channel by outsloping the road approach. If outsloping is not possible, use runoff control, erosion control and sediment containment measures. These may include using additional cross drain culverts, ditch lining, and catchment basins. Prevent or reduce ditch flow conveyance to the stream through cross drain placement above the stream crossing (see section below on Surface Drainage).
Surface Drainage including Cross drains Road Activities	
R 25	Effectively drain the road surface by using crowning, insloping or outsloping, grade reversals (rolling dips), and waterbars or a combination of these methods. Avoid concentrated discharge onto fill slopes unless the fill slopes are stable, and erosion proofed.
R 26	Outslope temporary and permanent low volume roads to provide surface drainage on road gradients up to 6 percent unless there is a traffic hazard from the road shape.
R 27	Consider using broad-based drainage dips or leadoff ditches in lieu of cross drains for low volume roads. Locate these overland drainage measures where they will not drain into wetlands, floodplains, and Waters of the State.
R 28	Avoid use of outside road berms unless designed to protect road fills from runoff. If road berms are used, breach to accommodate drainage where fill slopes are stable. Use armoring or slash placed at outside berm breeches to prevent erosion
R 29	Construct variable road grades and alignments (e.g., roll the grade and grade breaks) which limit water concentration, velocity, flow distance, and associated stream power.
R 30	Install underdrain structures when roads cross or expose springs, seeps, or wet areas rather than allowing intercepted water to flow down gradient in ditch lines.

BMP Number	Best Management Practices for Road Construction and Reconstruction
R 31	Design roads crossing low-lying areas so that water does not pond on the upslope side of the road. Provide cross drains at short intervals to ensure free drainage.
R 32	Divert road and landings used for vehicle storage runoff water away from headwalls, slide areas, high landslide hazard locations, or steep erodible fill slopes.
R 33	Limit the construction of temporary in-channel water drafting sites for dust abatement.
R 34	Locate cross drains or relief culverts, to prevent or minimize runoff and sediment conveyance to Waters of the State. Implement sediment reduction techniques such as brush filters, sediment fences, and check dams to prevent or minimize sediment conveyance. Locate cross drains to route ditch flow onto vegetated and undisturbed slopes. If on unstable slopes use rocks and other means to reduce erosion and stabilize water flow off road.
R 35	Space cross drain culverts at intervals sufficient to prevent water volume concentration and accelerated ditch erosion. At a minimum, space cross drains at intervals referred to in the BLM Road Design Handbook 9113-1 (USDI BLM 2011), Illustration 11 –‘Spacing for Drainage Lateral.’ Increase cross drain frequency through erodible soils, or steeper grades. Use guidelines in Table 2b to stabilize soils below drainage structures in steeper areas.
R 36	Choose cross drain culvert diameter and type according to predicted ditch flow, debris and bedload passage expected from the ditch. Minimum diameter is 18". When species needs for passage are present, sizes should be larger (e.g., for desert tortoise or other wildlife, the minimum size is 36").
R 37	Locate surface runoff drainage measures (e.g., cross drain culverts, rolling dips, and water bars) where water flow will be released on convex slopes or other stable and non-erodible areas that will absorb road drainage and prevent sediment flows from reaching wetlands, floodplains, and Waters of the State. Where possible locate surface runoff drainage structures above road segments with steeper downhill grade. Locate cross drains at least 50 feet from the nearest stream crossing and allow for a sufficient non-compacted soil and vegetative filter.
R 38	Armor surface drainage structures (e.g., broad-based dips, and leadoff ditches) to maintain functionality in areas of erodible and low-strength soils.
R 39	Discharge cross drain culverts at ground level on non-erodible material. Install downspout structures or energy dissipaters at cross drain outlets or drivable dips where alternatives to discharging water onto loose material, erodible soils, fills, or steep slopes are not available.
R 40	Cut protruding ‘shotgun’ culverts at the fill surface or existing ground. Install downspout or energy dissipaters to prevent erosion.
R 41	Skew cross drain culverts 45–60 degrees from the ditch line and provide pipe gradient slightly greater than ditch gradient to reduce erosion at cross drain inlet.
R 42	Provide for unobstructed flow at culvert inlets and within ditch lines during and upon completion of road construction prior to the wet season.

Table 2a. Water Bar Spacing (feet) by Gradient and Erosion Class

Estimated Erosion Hazard	Road Gradient (%)		
	<10%	11-25%	>25%
Extreme	100	75	50
High	150	100	75
Moderate	200	150	100
Low	300	200	150

† The erosion classes include the following rock types:

Extreme: Decomposed granitic soil, sandy soils, adjacent earthflows, and deep-seated landslide features

High: Sandstone, andesite porphyry, glacial or alluvial deposits, soft matrix conglomerate, volcanic ash, and pyroclastics

Moderate: Basalt, andesite, quartzite, hard matrix conglomerate, and rhyolite

Low: Metasediments, metavolcanics, and hard shale

Table 2b. Soil Ground Cover Needed to Protect Soils

NRCS Erosion Hazard Rating*	Minimum Percent Effective Ground Cover – Year 1	Minimum Percent Effective Ground Cover – Year 2
Very Severe	60%	75%
Severe	45%	60%
Moderate	30%	40%
Slight	20%	30%

* Rating obtained from Natural Resources Conservation Services <http://websoilsurvey.nrcs.usda.gov/>

BMP Number	Best Management Practices for Recreation Management
REC 01	Motorized use of unpaved roads, staging areas, and watercourse crossings will not be permitted during saturated soils conditions in order to reduce sediment discharge.
REC 02	Implement erosion control measures at high use recreation sites to stabilize exposed soils where water flows or sediment, may reach waterbodies.
REC 03	Restrict development of recreation facilities that are not water-dependent (e.g., boat ramps and docks) in the Riparian Management Areas.
REC 04	Use self-contained sanitary facilities at all developed recreational facilities unless a sewage system and drain field is approved through the NEPA process.
REC 05	When conducting recreation site maintenance, do not cut portions of logs or coarse woody debris that fall across the active stream channel unless such wood would cause potential flooding hazards with downstream road crossings. Keep adequate lengths of material on the banks to anchor it in place. If not possible to make the log stable, it may be removed.
REC 06	Construct boat ramps and approaches with hardened surfaces. For approaches, ramps or any construction element, avoid use of rubberized asphalt concrete (i.e. crumb rubber) to prevent mobilization of 6PPD-quinone into fish-bearing streams. Minimize riprap to a 4- foot width to protect concrete ramps. For constructed boat ramps on rivers and perennial streams, write plan to avoid sedimentation in the river from construction and use. Docks should be as narrow as possible and not include any treated wood.

BMP Number	Best Management Practices for Recreation Management
REC 07	Locate new OHV trails on stable locations (e.g., ridge tops, benches, and gentle-to- moderate side slopes). Minimize trail construction on steep slopes where runoff could channel to a waterbody. Close trails appropriately when rerouting trails. Ensure closed trails are blocked from OHV access.
REC 08	Design, construct, and maintain trail width, grades, curves, and switchbacks suitable to the terrain and designated use. Use and maintain surfacing materials suitable to the site and use, to withstand traffic and to minimize runoff and erosion.
REC 09	Suspend construction or maintenance of trails at the time of year when erosion and runoff into waterbodies would occur.
REC 10	Locate staging areas outside Riparian Management Areas. Design or upgrade staging areas to prevent sediment/pollutant delivery to wetlands, floodplains, and waterbodies, (e.g., rocking or hardening and drainage through grading or shaping).
REC 11	Designate class of vehicle suitable for the trail location, width, trail surfaces, and waterbody crossings, to prevent erosion and potential sediment delivery.
REC 12	Designate season of use if the trail bed is prone to erosion, rutting, gullyng, or compaction, due to high soil moisture, standing water or snowmelt.
REC 13	Design and space trail drainage structures to remove storm runoff from the trail surface before it concentrates enough to initiate rilling. Design trails to dissipate intercepted water by rolling dips. Where trails intersect road ditches, provide erosion resistant crossings. Divert water from the trail to keep from reaching wetlands, floodplains, and waterbodies.
REC 14	Design trails to be no wider than necessary to provide the recreation experience. Incorporate design elements that discourage off-route use (for example, taking shortcuts, cutting new lines). Avoid public motorized vehicle use in ponds and wetlands and navigating up or down wetted streams and side-channels. Use suitable barriers where feasible.
REC 15	Use existing road crossings of streams and floodplains on low-volume roads and partially decommissioned roads that tie with the trail system, where safety permits.
REC 16	Design improved stream crossings (culverts and bridges) for the 100-year flood event. Stream crossings with ESA- listed fish must meet NMFS fish passage design criteria. Design stream crossings for other ESA and State listed and sensitive aquatic species. See Roads and Landings section for stream crossing BMPs.
REC 17	Use existing road crossings of streams and floodplains on low-volume roads and partially decommissioned roads that tie with the trail system, where safety permits.
REC 18	Minimize low-water stream crossings for constructed or existing trails. Cross streams on stable substrate (e.g., bedrock, cobble) in areas of low streambanks. Block alternate stream-crossing routes where OHV wheel slippage (acceleration / braking) would tear down banks or deliver sediment. Avoid long, steep OHV trail segments on approaches to watercourse crossings.

BMP Number	Best Management Practices for Recreation Management
REC 19	<p>Orient stream crossings perpendicular to the channel in straight and resilient stream reaches. Where trails cannot be effectively drained by rolling dips or using reverse grades, provide additional drainage structures.</p> <p>Where needed to prevent connectivity to a water body, incorporate sediment basins at OHV rolling dip outlets instead of lead off ditches. Sediment basins can be used to retrieve eroded material to maintain trail surface and mitigate trail incision. Clean sediment basins regularly. Sediment basins need to be cleaned before reaching a capacity at which sediment is no longer collected and is at risk of delivering to a waterbody. Dispose of materials by using to fill gullies or repair trail tread.</p> <p>Where sediment basins cannot be installed, provide energy dissipaters at OHV rolling dip outlets. Extend drainage outlets beyond the toe of fill or side-cast.</p> <p>Place stable materials below the outlets of cut-off water breaks to dissipate energy.</p> <p>Space cross drains more closely on approaches to stream crossings to reduce storm water volume and potential erosional energy.</p> <p>Install surface armoring on trail sections that are steep and or erodible. Favor native materials.</p>
REC 20	<p>If OHV use is permitted in desert dry washes, protect dry wash woodland vegetation, and ensure that excessive bank erosion and is not occurring in areas where listed or sensitive species are present or downstream.</p>
REC 21	<p>In OHV bridge structures, avoid chemically treated materials at water level contact points where leachate or solids may enter waterbodies.</p>
REC 22	<p>Use a temporary flow diversion bypass to minimize downstream turbidity, when constructing in perennial stream crossings (See Roads and Landings section for Stream Crossing BMPs).</p>
REC 23	<p>If trail width is too wide for the designated use (such as old roads converted to trails), consider tilling one side of the trail, covering with brush, and seeding or planting with native vegetation.</p>
REC 24	<p>Monitor trail condition to identify surface maintenance and drainage needs to prevent or minimize sediment delivery to waterbodies.</p> <p>Repair rills and gullies to keep sediment from reaching wetlands, floodplains, and waterbodies.</p>
REC 25	<p>Hydrologically disconnect trails from waterbodies to the extent practicable. Construct and repair water bars, drain dips, and leadoff ditches. These features may need rock reinforcement to promote longevity. Self-maintaining drain dips or leadoff features are the preferred design.</p>
REC 26	<p>Harden trail approaches to stream crossings using materials such as geotextile fabric and rock aggregate.</p> <p>Harden fords with gravel or cobble of sufficient size and depth to prevent movement by traffic.</p> <p>Construct watercourse crossings to sustain bankfull dimensions of width, depth, and slope, and to maintain streambed and bank resiliency.</p> <p>Cross wet areas with naturally high-water tables with permeable fills, perched culverts, and/or culvert arrays to maintain hydrologic function. If possible, reroute trail away from seeps or wetlands. Bridge wetlands if trail reroute not possible and damage to wetland is occurring due to trails.</p>
REC 27	<p>Rehabilitate unauthorized and decommissioned trails, where needed, to protect sensitive areas and water quality.</p>
REC 28	<p>When constructing or maintaining trails within Riparian Management Areas, do not cut any portion of logs or coarse woody debris that extend into the active stream channel unless they pose a flooding hazard. Use alternative passage options, such as earthen ramps, small notch steps, or slight trail realignments, to facilitate maintenance of intact logs. Cut and stabilize if necessary, for safety.</p>
REC 29	<p>Position fill or waste material in a location that would avoid direct or indirect sediment discharge to streams or wetlands.</p>

BMP Number	Best Management Practices for Recreation Management
REC 30	Plant restored stream banks with native vegetation, and mulch. Use water-tolerant species where appropriate. Restrict access to and allow nearby vegetation to grow into closed trails.
REC 31	Prioritize upgrading and preparing roads for the wet season that access parking areas such as OHV parking areas and wet season use areas.
REC 32	Staging Areas: Consider the number and type of vehicles to determine parking or staging area size, type of surface and drainage. Take advantage of existing openings, sites away from waterbodies, and areas that are apt to be more easily restored. Prevent erosion to adjacent water; aquatic, and riparian resources. Avoid sensitive areas such as Riparian Management Areas, floodplains, wetlands, meadows, bogs, fens, inner gorges, overly steep slopes, and unstable landforms. Provide signage to designate parking, staging, and refueling areas, and to minimize impacts to sensitive areas. Use permeable pavements where possible and integrate vegetative islands to trap and filter runoff and avoid direct discharge of runoff into watercourses. Infiltrate as much of the runoff as possible using permeable surfaces and infiltration ditches or basins in areas where groundwater contamination risk is low. Pave parking areas that experience heavy use and those that are used during wet periods. Install curbs and gutters to direct and capture surface flow from these paved surfaces.
REC 33	For staging areas, designate specific locations for fueling and have a berm or other protection to prevent water-quality impacts. Install and maintain oil and grease separators in larger parking lots with high use and where drainage discharges directly to streams. Plan for necessary clean out and disposal of material collected in these vaults. Connect drainage system to existing stormwater conveyance systems where available and desirable, or, if not available, consider implementing bioretention/biofiltration systems or vegetated, permeable landscape to convey runoff.
REC 34	For staging areas, rehabilitate temporary parking or staging areas immediately following use. Effectively prevent access to the area once site restoration activities have been completed.
REC 35	Site camps for permitted group overnight camping greater than 150 feet from surface water.

BMP Number	Best Management Practices for Livestock Grazing and Wildhorse Management
G 01	Fence water developments near springs and seeps when feasible, unless other methods are effective. Pipe overflow away from the developed source where feasible and in cooperation with permittees.
G 02	Protect and maintain the physical, biological, and chemical integrity of perennial, intermittent streams and Waters of the State using fencing, seasonal rotations, and other methods. When water quality is threatened by bank trampling or other disturbances fence areas to keep large animals out of the riparian corridor (Riparian Management Areas).
G 03	Locate new permanent livestock handling or management facilities (corrals, pens, or holding pastures) outside Riparian Management Areas or 200 feet from waterbodies and on level ground where drainage would not enter surface waters. Make changes to existing facilities within Riparian Management Areas to meet water quality standards and regulations. Encourage cattle to obtain water away from riparian area.

BMP Number	Best Management Practices for Livestock Grazing and Wildhorse Management
G 04	Adjust forage utilization levels, improved livestock distribution, and management through fencing, vegetation treatments, water source developments, or changes in season of use or livestock numbers to recover degraded waterbodies.
G 05	<p>Apply specific livestock grazing strategies for riparian wetland areas, including timing, intensity, or exclusion for maintenance of proper functioning condition. Use one or more of the following features:</p> <p>Include the waterbodies, floodplains, and wetlands within a separate pasture.</p> <p>Fence or herd livestock out of waterbodies, floodplains, and wetlands for as long as necessary to allow vegetation to recover.</p> <p>Control the timing and intensity of grazing to keep livestock off stream banks when they are most vulnerable to damage and to coincide with the physiological needs of target plant species.</p> <p>Add more rest to the grazing cycle to increase plant vigor, allow stream banks to re-vegetate, or encourage more desirable plant species composition.</p> <p>Limit grazing intensity to a level that will maintain desired species composition and vigor.</p> <p>Permanently exclude livestock from those waterbodies, floodplains, and wetlands areas that are at high risk and have poor recovery potential, and when there is no practical way to protect them while grazing adjacent uplands.</p>
G 06	Locate salting areas outside Riparian Management Areas, and further than 400 feet from permanent or intermittent streams and Waters of the State.
G 07	Use practices of BMPs from (the Operations in or near Aquatic Ecosystems, Spill Prevention and Abatement, Restoration Activities, and Stream Crossings sections, Table 1a and Table 2b) when designing range improvement activities that involve Waters of the State and when developing water sources for livestock watering or temporary access or gather areas.
G 08	Minimize fencing for livestock and make existing and needed fences wildlife friendly.
G 09	Establish off-spring, creek, and river watering sites for livestock.
G 10	Livestock crossings and off-channel livestock watering facilities shall not be located in areas where compaction and/or damage may occur to sensitive soils, slopes, or vegetation due to congregating livestock. If livestock fords across streams are rocked to stabilize soils/slopes and prevent erosion, material and location shall be subject to the approval of the Authorized Officer.
G 11	<p>Design and locate parking and staging or wild horse or burro gather areas of appropriate size and configuration to accommodate expected vehicles and horses /burros and prevent damage to adjacent water; aquatic, and riparian resources.</p> <p>When gathering wild horses and burros avoid sensitive areas such as Riparian Management Areas, wetlands, meadows, bogs, fens, inner gorges, overly steep slopes, and unstable landforms to the extent practicable.</p> <p>For staging areas for wild horse and burro gathers, designate specific locations for fueling so that water-quality impacts are minimized.</p>

BMP Number	Best Management Practices for Minerals Development
M 01	Require suitable characterization of ore, waste rock, and tailings using accepted protocols to identify materials that have the potential to release acidity or other contaminants when exposed during mining. Stipulate suitable requirements, including water treatment as needed, to avoid or minimize the development and release of acidic or other contaminants in surface or groundwater.
M 02	Require suitable characterization of mine site hydrology commensurate with the potential for impacts to surface water and groundwater resources, to include physical and chemical characteristics of surface and groundwater systems, as needed, for the range of expected seasonal variation in precipitation and potential stormflow events likely to occur at the site for the duration of the minerals activities.
M 03	Follow the NMFS National Gravel Extraction Guidance document to avoid and minimize impacts to listed species and their habitats. Available at: https://media.fisheries.noaa.gov/2021-11/PD-03-401-11_final.pdf .
M 04	Evaluate the potential for direct and indirect impacts to morphology, stability, and function of waterbodies, Riparian Management Areas, floodplains, and wetland habitats, and effects to listed and sensitive species.
M 05	Locate stockpile sites on stable ground where the material would not move into waterbodies, floodplains, and wetlands.
M 06	Locate, design, and construct salable mineral sites to control runoff and prevent or minimize sediment delivery to streams. Prevent overburden, solid wastes, drainage water, or petroleum products from entering wetlands, Riparian Management Areas, flood plains, and Waters of the State.
M 07	Locate, design, and maintain settling ponds to contain sediment discharges. Monitor to ensure that contamination of ground water or surface waters does not occur.
M 08	When a quarry or rock pit is depleted or vacated, stabilize cut banks, headwalls, and other surfaces to prevent surface erosion and landslides. Close roads, excavations, and crusher pads in accordance with Roads and Landings section. Remove all potential pollutants to prevent their entry into wetlands, Riparian Management Areas, floodplains, and Waters of the State.

F.3 BMPs TO PROTECT WILDLIFE AND VEGETATION, INCLUDING POLLINATORS

BMP Number	Best Management Practices for General Wildlife
Wild-1	Discourage the spread of invasive species by removing unneeded roads
Wild-2	Complete activities at individual project sites in a timely manner to reduce disturbance and/or displacement of wildlife in the immediate project area.
Wild-3	Use existing roadways or trails for access to project sites.
Wild-4	Employ post restoration monitoring following project completion to determine efficacy and/or impacts of treatment.
Wild-5	Native shrubs, trees, and erosion control seed mixes from local ecotypes shall be used where needed for restoration of disturbed sites. Seedlings, cuttings, and other plant propagules for restoration shall be sourced from local ecotypes.
Wild-6	Avoid accumulating or spreading slash in upland draws, depressions, intermittent streams, and springs to eliminate or reduce debris flows. Spreading slash would be allowed in drainages where debris placement is recommended for erosion control.

BMP Number	Best Management Practices for General Wildlife
Wild-7	New facilities shall be sited in previously disturbed areas, to the extent feasible, and shall be designed to avoid sensitive habitats and affect the least amount of native vegetation.
Wild-8	Retain existing snags for wildlife use in areas where they will not create a human hazard.
Wild-9	Utilize food and waste management programs in recreation areas and at facilities that utilize bear proof containers and trash receptacles.

F.4 BMPs for Pesticide Application and Integrated Pest Management

BMP Number	Best Management Practices for Pesticide Application and Integrated Pest Management
P-1	<p>Implement the integrated pest management approach and the best management practices required as part of the IPM Program to reduce potentially adverse effects to wildlife, fisheries, and floral resources.</p> <ul style="list-style-type: none"> Refer to the Programmatic EIS on Vegetation Treatments Using Herbicides on BLM lands in 17 Western States for standard operating procedures and BMPs. Available at: https://www.worldcat.org/title/final-programmatic-environmental-impact-statement-vegetation-treatments-using-herbicides-on-bureau-of-land-management-lands-in-17-western-states/oclc/145747864 and 2016 update online at: https://www.blm.gov/programs/natural-resources/weeds-and-invasives/vegetative-peis Refer to the National Invasive Species Management Council Management Plan (2016-2018) developed by the National Invasive Species Council for prevention, control, and minimization of invasive species and their impacts. Available at: https://www.doi.gov/invasivespecies/management-plan

F.5 BMPs for Wildland Fire Management

BMP Number	Best Management Practices for Wildland Fire Management
WF-1	Small unit sizes, wind direction, fuel load and type, and distance to receptors will be considered to mitigate adverse effects of prescribed burns.
WF-2	Fire lines shall be located outside of highly erosive slopes, intermittent streams, riparian areas, vernal pools, wetlands, and sensitive plant and animal habitat.
WF-2	Whenever consistent with safe, effective suppression techniques, natural barriers will be used as fire breaks as extensively as possible.
Additional Publication Reference	<p>Statewide WUI Fuels Treatments Project Programmatic Environmental Assessment Source Bureau of Land Management Available at: EplanningUi (blm.gov) Description: This document establishes a programmatic approach to vegetation management and hazardous fuel removal on public lands. Additional Project Design Features and BMPs can be used from this pEA.</p>

BMP Number	Best Management Practices for Wildland Fire Management
Additional Publication Reference	<p>Hazard Removal and Vegetation Management Project Programmatic Environmental Assessment</p> <p>Source: Bureau of Land Management</p> <p>Available at: EplanningUi (blm.gov)</p> <p>Description: This document address hazard removal and vegetation management within 200 feet of critical infrastructure on forest and woodlands managed by BLM California. Additional Project Design Features and BMPs can be used from this pEA.</p>

F.6 BMPs TO PROTECT MIGRATION/MOVEMENT CORRIDORS

BMP Number	Best Management Practices for Migration/Movement Corridors
MC-1	Identify wildlife migration and movement corridors that cross BLM lands.
MC-2	Where data is present mitigate vehicular collisions with wildlife on BLM-managed roads that bisect essential movement corridors, including decommissioning where possible.
MC-3	Identify and mitigate of barriers such as highways, canals, fencing, and man-made dams that inhibit movement routes for mule deer and other wide-ranging wildlife.
MC-4	Where corridors cross jurisdictional boundaries, coordinate management of the corridor with all relevant agencies, governments, landowners, and other entities.

F.7 BMPs TO PROTECT LATE SUCCESSIONAL FOREST FOR NORTHERN SPOTTED OWL, PACIFIC FISHER, AND MARBLED MURRELET

BMP Number	Best Management Practices for Late Successional Forest (Northern Spotted Owl, Pacific Fisher, Marbled Murrelet)
LSF-1	Manage forest stands for late successional characteristics such as uneven-aged and multilayered canopy.
LSF-2	Snags greater than 12" DBH shall be retained on project sites for cavity dependent wildlife species whenever possible.
LSF-3	Large trees with large cavities, mistletoe clumps, broken tops, deformed branches, and long lateral branches will be maintained for nesting, resting, and roosting sites.
LSF-4	Maintain a minimum of 60% canopy closure with patches exceeding 80% canopy closure.
LSF-5	Maintain and enhance connectivity of continuous blocks of habitat for Pacific fishers and martens including retaining increased stand complexity, understory shrubs and trees, snags, and downed woody debris.

F.8 BMPs TO PROTECT RIPARIAN AND WETLAND HABITATS, AND VERNAL POOLS

BMP Number	Best Management Practices for Riparian and Wetland Habitats, and Vernal Pools
WRH-1	If human disturbance is a problem, consider closure of trails through and around wetlands during waterfowl breeding season.
WRH-2	Prioritize water allocation to breeding habitat (e.g., brood ponds and semi-permanent wetlands) during extended droughts, or when water is otherwise limited.
WRH-3	Bank stabilizing vegetation removed or altered because of restoration activities shall be replanted with native vegetation and protected from further disturbance until new growth is well established.
WRH-4	Maintain watershed to provide seasonal water to the pools.
WRH-5	Natural, undisturbed buffers approximately 300 yards wide around pools should help protect animal movements to and from the pools.
WRH-6	Corridors connecting pools should be preserved.
WRH-7	Avoid equipment operation and motorized recreation in pools.
WRH-8	Avoid adding water to pools during dry phase of year.
WRH-9	Debris or fill should not be dumped into vernal pools.
WRH-10	Habitat alterations that must take place should be carried out during the dry season to minimize disturbance to breeding and resident animals.

F.9 BMPs TO PROTECT FRESH WATER MUSSELS

BMP Number	Best Management Practices to Protect Fresh Water Mussels
FM-1	Time work to avoid sensitive life stages.
FM-2	Leave as much existing habitat as possible and favor projects and designs that allow protection of mussels onsite rather than having to salvage and relocate them.
FM-3	Consider relocating mussels that would be directly impacted by the project.
FM-4	Avoid dewatering a habitat before conducting a survey and planning for a potential relocation.
FM-5	Avoid complete elimination of host fish from isolated habitat as surviving mussels will be unable to reproduce.
FM-6	Phase construction activities to minimize the time period over which water disturbance occurs.
FM-7	If feasible, establish an exclusion area around areas with mussels to protect them from direct and indirect effects.

F.10 BMPs TO PROTECT CAVE AND KARST RESOURCES

BMP Number	Best Management Practices to Protect Cave and Karst Resources
CK-1	Caves with documented bat occupancy or high potential for bat occupancy should be gated with a bat gate to prevent human disturbance and spread/ establishment of white-nose syndrome.
CK-2	Implement buffer zones of least 100 feet prior to project implementation to restrict refueling, pesticide and herbicide application, and other disturbance-causing activities near cave entrances.

F.11 BMPs TO PROTECT AIR QUALITY

BMP Number	Best Management Practices to address fugitive dust control
FD-1	A Fugitive Dust Control Plan should be implemented for projects and activities that have potential to generate fugitive dust.
FD-2	Regular checks are made to confirm that dust from the project or activity is not blowing into surrounding properties or public areas.
FD-3	Any dirt or dust that is tracked out from the project or activity onto a public road is cleaned up by the end of the day. Large or long-term projects may require a gravel pad or other dust control structure leading up to the exit to prevent track out.
FD-4	Water or another dust suppressant is applied to unpaved roads, soil piles, and disturbed areas that could be sources of fugitive dust.
FD-5	Appropriate speed limits, typically either 10 or 15 miles per hour, are established for vehicles on unpaved or disturbed areas. It may be acceptable to set higher speed limits on unpaved roads depending on the quality of the road surface. For example, treated unpaved roads or gravel roads may sustain higher speeds without creating fugitive dust.
FD-6	Disturbed areas and other fugitive dust sources such as soil piles will be stabilized when they are not actively in use.
FD-7	Use of appropriate soil tackifiers is considered for short-term stabilization. This could include bio-cementation, chemo-cementation, enzymatic carbonate precipitation or bio-polymerization.
FD-8	Disturbed areas should be revegetated, restored, or otherwise stabilized for the long term before the end of the project. Native plant restoration is the best way to stabilize soils and should be implemented wherever feasible.
FD-9	Biological crust restoration is an appropriate additional step, especially in desert regions.
FD-10	Naturally occurring asbestos is present in the soil in some areas of California. Additional controls and precautions are required in these areas, and will be determined on a case by case basis.

BMP Number	Best Management Practices for General Air Quality Protection
Air -1	All uses of prescribed fire will meet the air quality standards, regulations, policies, and guidelines specified by the Federal Clean Air Act, the California Clean Air Act, the California Air Resources Board (ARB), regional Air Quality Management Districts (AQMD)/Air Pollution Control Districts (APCD), and municipal air pollution requirements and BLM Handbooks.
Air-2	If prescribed fire is used, a BLM approved Prescribed Fire Plan will be in place prior to ignition.
Air-3	The Prescribed Fire Plan will have a design, reviewed in advance by National Park Service (NPS), United States Forest Service (USFS), BLM, Air Resources Board and air districts (AQMDs, and APCDs), that will have no adverse impact on Class I air quality areas.
Air-4	The BLM and its collaborators will adhere to requirements for vehicle emissions controls and maintenance, clean fuels, registered or approved fuel-using equipment, and zero- emissions equipment established by the ARB and/or AQMD/APCD.
Air-5	Conduct prescribed burning in compliance with the existing smoke management plans. Smoke emission control could also include conducting mop-up as soon as possible after ignition is complete, covering hand piles to permit burning during the rainy season, burning lighter fuels with lower fuel moistures to facilitate rapid and complete combustion, and burn larger fuels with higher moisture levels to minimize consumption.

BMP Number	Best Management Practices for General Air Quality Protection
Air-6	Apply herbicides using methods that will prevent herbicide vapor or overspray from becoming airborne and drifting away from the designated treatment site(s).
Air-7	Apply good vehicle emission practices to reduce emissions: For agency vehicles observe safe speed limits, maintain speeds of 25 mph or less on unpaved roads, and carpool when practical. All vehicles will not idle longer than 2 minutes unless absolutely necessary. Vehicle idling is prohibited at the work site.
Air-8	Fuels treatments will be carried out using techniques available that are the least emissive of greenhouse gas and consistent with treatment objectives for the treatment area.
Air-9	Fuel treatments will be planned and carried out to burn no more than the <i>de minimis</i> amount of fuel during each week of the burn season in each air district. A higher <i>de minimis</i> tonnage may be applicable at a specific treatment location depending on the specific landscape category and attainment status at the site.

F.12 BMPs TO PROTECT VISUAL RESOURCES

Publication ref: BLM Best Management Practices for Artificial Light at Night on BLM Administered Lands
Source: Bureau of Land Management

Available at: https://www.blm.gov/sites/default/files/docs/2023-04/Library_BLMTechnicalNote457_final.pdf

Description: This technical note provides an easy reference for a variety of ways the BLM can protect night skies and dark environments by reducing or avoiding sources of light pollution from BLM-managed lands to maintain visible clarity of night skies and ensure a healthful dark environment for wildlife and people.

Publication ref: The Use of Color for Camouflage Concealment of Facilities

Source: Bureau of Land Management

Available at: <https://ia801304.us.archive.org/17/items/useofcolorforcam00unit/useofcolorforcam00unit.pdf>

Description: This technical note addresses the use of color and camouflage applications on facilities as a design strategy that may be used to minimize visual impacts from development. This technical note is a result of numerous field studies on the use of camouflage and is intended to provide guidance on the manipulation of color and camouflage application strategies for the effective visual concealment of built facilities.

Publication ref: Guidelines for a Quality Built Environment

Source: Bureau of Land Management

Available at:

<https://www.ntc.blm.gov/krc/system/files?file=legacy/uploads/23388/BLM%20Guidelines%20for%20a%20Quality%20Built%20Environment.pdf>

Description: This document provides a variety of methods to help ensure that BLM facilities are attractive, functional, and sustainable. These guidelines integrate guidance from related programs, directives, and best management practices; establish easy-to-use design guidelines for a variety of different facility types; addresses a diversity of settings that are representative of BLM public lands; presents a process for planning and design on BLM lands; provides real examples of quality BLM projects for reference and guidance.

F.13 BMPs RELATED TO RENEWABLE ENERGY DEVELOPMENT

Publication ref: Final Programmatic Environmental Impact Statement for Wind Energy Development (Chapter 2, Section 2.2.3.2)

Source: Bureau of Land Management

Available at: <http://windeis.anl.gov/documents/fpeis/index.cfm>

Description: BLM developed BMPs for each major step of the wind energy development process, including site monitoring and testing, plan of development preparation, construction, operation, and decommissioning. General BMPs are available for each step, and certain steps also include specific BMPs to address the following resource issues: wildlife and other ecological resources, visual resources, roads, transportation, noise, noxious weeds and pesticides, cultural and historical resources, paleontological resources, hazardous materials and waste management, stormwater, human health and safety, monitoring program, air emissions, and excavation and blasting activities.

Publication ref: Final Programmatic Environmental Impact Statement for Solar Energy Development (July 2012)

Source: Bureau of Land Management

Available at: <https://solareis.anl.gov/documents/fpeis/index.cfm>

Description: Provides a set of programmatic design features that would be required for all utility-scale solar energy projects on BLM-administered lands. Addresses the broad possible range of direct and indirect impacts from solar facilities as well as associated transmission facilities, roads, and other infrastructure.

Publication ref: Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM Administered Lands (First Edition 2013)

Source: Bureau of Land Management

Available at: https://blmwyomingvisual.anl.gov/docs/BLM_RenewableEnergyVisualBMPs_LowRes.pdf

Description: This publication presents 122 BMPs to avoid or reduce potential visual effects associated with siting, designing, constructing, operating, and decommissioning utility-scale renewable energy generation facilities, including wind, solar, and geothermal facilities. The publication includes BMPs for avoiding and reducing visual effects associated with the energy generation components of a facility, such as wind turbines or solar energy collectors, and includes BMPs for reducing visual effects associated with ancillary components, such as electric transmission, roads, and structures.

F.14 OTHER BMP RESOURCES

F.14.1 Climate Change

Publication ref: US Climate Resilience Toolkit

Source: United States Global Change Research Program (Managed by NOAA)

Available at: <https://toolkit.climate.gov>

Description: The toolkit is a website designed to help people find and use tools, information, and subject matter expertise to build climate resilience. The toolkit offers information from all across the US federal government.

F.14.2 Post-Fire

Publication ref: Burned Area Emergency Stabilization and Rehabilitation (H1742-1, 2007)

Source: Bureau of Land Management

Available at:

https://www.blm.gov/sites/blm.gov/files/uploads/Media_Library_BLM_Policy_Handbook_h1742-1.pdf

Description: This handbook provides detailed information specific to Bureau of Land Management (BLM) policies, standards, and procedures used in the Burned Area Emergency Stabilization and Rehabilitation (ES&R) programs. This Handbook is intended to be the primary guidance to BLM ES&R activities. It is tiered to the Department of the Interior (DOI) Departmental Manual 620 DM 3 Wildland Fire Management Burned Area Emergency Stabilization and Rehabilitation relative to planning and implementing ES&R projects on public lands administered by the BLM. This guidance incorporates all pertinent information from the Interagency Burned Area Emergency Response and the Interagency Burned Area Rehabilitation Guidebooks.

F.14.3 Biological Soil Crusts

Publication ref: Biological Soil Crusts: Ecology and Management

Source: Bureau of Land Management

Available at: <https://www.ntc.blm.gov/krc/system/files?file=legacy/uploads/2939/CrustManual.pdf>

Description: This technical reference details the basics of biological soil crusts, how to identify different types, how they are distributed across the western US, their ecological role in ecosystems, their response to natural and human impacts, management techniques to maintain or improve them, and monitoring protocols. The section on management techniques includes BMPs for management of fire, livestock grazing and recreational use.

F.14.4 Vegetation and Forestry

Publication ref: **Integrated Vegetation Management Handbook, H-1740-2 (2008)**

Source: Bureau of Land Management

Available at: https://www.blm.gov/sites/blm.gov/files/uploads/Media_Library_BLM_Policy_Handbook_H-1740-2.pdf

Description: The BMPs describe practices to limit impacts of vegetation treatment to:

- Invasive plant species
- Soil resources
- Native plant conservation and revegetation
- Using pesticide and biological controls
- Air quality
- Wildlife habitat
- Cultural and historic resources
- Water quality and wetlands
- Recreation, visual, and wilderness resources

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Appendix G

Areas of Critical Environmental Concern

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U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Northwest California

Integrated Resource Management Plan

Areas of Critical Environmental Concern

Report on the Application of the Relevance and Importance Criteria

**Prepared by the
Bureau of Land Management**

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Yuki Wilderness in the Arcata Field Office

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TABLE OF CONTENTS

Chapter

Page

APPENDIX G. AREAS OF CRITICAL ENVIRONMENTAL CONCERN G-I

G.1	Introduction	G-1
G.1.1	Areas of Critical Environmental Concern	G-1
G.2	Requirements for ACEC Designation.....	G-2
G.2.1	Identifying ACECs.....	G-2
G.2.2	Evaluation of Nominations for Relevance and Importance	G-3
G.2.3	Consideration and Designation Process of Potential ACECs.....	G-4
G.3	Evaluations for Existing and Proposed ACECs.....	G-8
G.3.1	Upper Burney Dry Lake and Baker Cypress ACEC.....	G-8
G.3.2	Butte Creek ACEC	G-12
G.3.3	Deer Creek ACEC.....	G-14
G.3.4	Forks of Butte Creek ACEC.....	G-16
G.3.5	Gilham Butte ACEC.....	G-18
G.3.6	Hawes Corner ACEC.....	G-21
G.3.7	Iaqua Butte ACEC	G-23
G.3.8	Lacks Creek ACEC	G-25
G.3.9	Ma-le'l Dunes ACEC.....	G-29
G.3.10	Sacramento Island ACEC.....	G-32
G.3.11	Sacramento River Bend ACEC.....	G-35
G.3.12	Shasta and Klamath River Canyon ACEC.....	G-39
G.3.13	Grass Valley Creek ACEC.....	G-41
G.3.14	Swasey Drive ACEC	G-44
G.3.15	Upper and Lower Clear Creek ACEC.....	G-46
G.3.16	Swasey Drive Clear Creek Greenway ACEC.....	G-48
G.3.17	Sheep Rock ACEC.....	G-50
G.3.18	Black Mountain ACEC.....	G-52
G.3.19	Upper Klamath Bench ACEC	G-54
G.3.20	Upper Mattole Valley ACEC.....	G-56
G.3.21	Eden Valley ACEC	G-58
G.3.22	Eden Creek ACEC	G-61
G.3.23	Beegum Creek Gorge ACEC.....	G-63
G.3.24	North Fork Eel ACEC.....	G-65
G.3.25	Willis Ridge ACEC	G-67
G.3.26	South Spit ACEC	G-69
G.3.27	Corning Vernal Pools ACEC.....	G-71
G.3.28	North Table Mountain ACEC	G-73
G.3.29	Red Mountain ACEC	G-75
G.3.30	Elder Creek ACEC.....	G-78
G.3.31	South Fork Eel River ACEC.....	G-80
G.4	Summary of Findings	G-82
G.4.1	Summary of Findings	G-83
G.5	List of Preparers.....	G-84
G.6	References.....	G-86

TABLES	Page
G-1 Existing ACECs.....	G-4
G-2 Removal of ACEC Designation	G-5
G-3 Existing ACECs Being Analyzed	G-5
G-4 Externally and Internally Nominated ACECs to be Considered.....	G-6
G-5 Upper Burney Dry Lake and Baker Cypress Summary of ACEC Findings	G-8
G-6 Butte Creek Summary of ACEC Findings	G-12
G-7 Deer Creek Summary of ACEC Findings	G-14
G-8 Forks of Butte Creek Summary of ACEC Findings	G-16
G-9 Gilham Butte Summary of ACEC Findings	G-18
G-10 Hawes Corner Summary of ACEC Findings	G-21
G-11 Iaqua Butte Summary of ACEC Findings.....	G-23
G-12 Lacks Creek Summary of ACEC Findings.....	G-25
G-13 Lists CNDDDB Inventory of BLM Sensitive and CNPS Species with Occurrence Records and/or Suitable Habitat within Lacks Creek Management Area.....	G-26
G-14 Ma-le'l Dunes Summary of ACEC Findings	G-29
G-15 Sacramento Island Summary of ACEC Findings	G-32
G-16 Sacramento River Bend Summary of ACEC Findings	G-35
G-17 Shasta and Klamath River Canyon Summary of ACEC Findings	G-39
G-18 Grass Valley Creek Summary of ACEC Findings	G-41
G-19 Swasey Drive Summary of ACEC Findings.....	G-44
G-20 Upper and Lower Clear Creek Summary of ACEC Findings	G-46
G-21 Swasey Drive Clear Creek Greenway Summary of ACEC Findings	G-48
G-22 Sheep Rock Summary of ACEC Findings.....	G-50
G-23 Black Mountain Summary of ACEC Findings	G-52
G-24 Upper Klamath Bench Summary of ACEC Findings.....	G-54
G-25 Upper Mattole Valley Summary of ACEC Findings	G-56
G-26 Eden Valley Summary of ACEC Findings.....	G-58
G-27 Eden Creek Summary of ACEC Findings.....	G-61
G-28 Beegum Creek Gorge Summary of ACEC Findings	G-63
G-29 North Fork Eel Summary of ACEC Findings	G-65
G-30 Willis Ridge Summary of ACEC Findings.....	G-67
G-31 South Spit Summary of ACEC Findings.....	G-69
G-32 Corning Vernal Pools Summary of ACEC Findings	G-71
G-33 North Table Mountain Summary of ACEC Findings	G-73
G-34 Red Mountain Summary of ACEC Findings.....	G-75
G-35 Elder Creek Summary of ACEC Findings	G-78
G-36 South Fork Eel River Summary of ACEC Findings	G-80
G-37 Summary of ACECs Under Proposed Alternative	G-83

FIGURES	Page
G-1 Existing Baker Cypress Existing ACEC Map	G-10
G-2 Upper Burney Dry Lake and Baker Cypress ACEC Map (Existing and Alternatives (Alt) B and D, Not Carried Forward in Alt C)	G-11
G-3 Butte Creek ACEC Map (Existing and Alts B and D, Not Carried Forward under Alt C).....	G-13

G-4	Deer Creek ACEC Map (Existing and Alts B and D, Not carried Forward under Alt C)	G-15
G-5	Forks of Butte ACEC Map (Existing, Alt B, Alt C and Alt D).....	G-17
G-6	Gilham Butte w/Addition ACEC Map (Carried Forward under Alts B and D).....	G-19
G-7	Gilham Butte ACEC Map (Existing and Proposed under Alt C).....	G-20
G-8	Hawes Corner ACEC Map (Existing and Alts B and D, Not Carried Forward under Alt C).....	G-22
G-9	Iaqua Buttes ACEC Map (Existing and Alts B and D, Not carried Forward under Alt C)	G-24
G-10	Lacks Creek ACEC Map (Existing).....	G-27
G-11	Lacks Creek ACEC Map (Carried forward under Alts B, C and D).....	G-28
G-12	Manila Dunes ACEC Map (Existing).....	G-30
G-13	Ma-le'l Dunes Proposed ACEC Map (Carried forward under Alts B, C and D)	G-31
G-14	Sacramento Island ACEC Map (Existing and Alts B and D, Not carried forward under Alt C).....	G-34
G-15	Sacramento River Bend ACEC Map (Existing and Alts C and D).....	G-37
G-16	Sacramento River Bend ACEC Proposed Alt B.....	G-38
G-17	Shasta and Klamath Rivers Canyon ACEC Map (Existing and proposed Alts B and D, Not carried Forward under Alt C)	G-40
G-18	Grass Valley Creek ACEC Map (Alts B and D)	G-42
G-19	Grass Valley Creek ACEC Map (Alt C)	G-43
G-20	Swasey Drive ACEC Map (Existing and Alts C and D, Not Carried Forward Under Alt B)	G-45
G-21	Upper and Lower Clear Creek ACEC Map (Only Carried forward Under Alt D)	G-47
G-22	Swasey Drive Clear Creek Greenway ACEC (Proposed Alt B, not Carried Forward in Alts C and D).....	G-49
G-23	Sheep Rock ACEC Map (Proposed Alts B and D, not Carried Forward in Alt C)	G-51
G-24	Black Mountain ACEC Map (Proposed Alts B and D, not Carried Forward in Alt C)	G-53
G-25	Upper Klamath Bench ACEC Map (Proposed Alts B and D, not Carried Forward in Alt C).....	G-55
G-26	Upper Mattole Valley ACEC Map (Proposed Alts B and D, not Carried Forward in Alt C).....	G-57
G-27	Eden Valley ACEC Map (Alternatives B and D).....	G-60
G-28	Eden Creek ACEC Map (Alt C).....	G-62
G-29	Beegum Creek Gorge ACEC Map (Alts B and D, not Carried Forward in Alt C)	G-64
G-30	North Fork Eel ACEC Map (Alts B and D, not Carried Forward in Alt C)	G-66
G-31	Willis Ridge ACEC Map (Alts B and D, not Carried Forward in Alt C).....	G-68
G-32	South Spit ACEC Map (Alts B and D, not Carried Forward in Alt C).....	G-70
G-33	Corning Vernal Pools ACEC Map (Alts B and D, not Carried Forward in Alt C)	G-72
G-34	North Table Mountain ACEC Map (Alts B and D, not Carried Forward in Alt C)	G-74
G-35	Red Mountain ACEC (Existing) (Not Carried Forward under Alts B, C, and D).....	G-77
G-36	Elder Creek ACEC (Existing) (Not Carried Forward under Alts BC and D)	G-79
G-37	South Fork Eel River (Existing) (Not Carried Forward under Alts B, C and D)	G-81
G-38	NCIP ACEC Overview Map	G-82

ACRONYMS AND ABBREVIATIONS

Acronym or Abbreviation	Full Phrase
ACEC	Area of Critical Environmental Concern
Alt	Alternative
BLM	Bureau of Land Management
CalWild	California Wilderness Coalition
CESA	California Endangered Species Act
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
DPS	District Population Segment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ESU	Evolutionary Significant Unit
FLPMA	Federal Land Policy and Management Act
IDT	Interdisciplinary Team
IM	Instruction Memorandum
LCMA	Lacks Creek Management Area
LSR	Late Successional Reserve
NCIP	Northwest California Integrated Resource Management Plan
NRHP	National Register of Historic Places
OHV	Off-Highway Vehicle
ONA	Outstanding Natural Area
R&I	Relevance and Importance
RMP	Resource Management Plan
RNA	Research Natural Area
RNSP	Redwood National and State Park
SONSS	Southern Oregon/Northern California Coast
UNESCO	United Nations Educational, Scientific and Cultural Organization
WSR	Wild and Scenic River

Appendix G. Areas of Critical Environmental Concern

G.I INTRODUCTION

As part of the process for developing the Northwest California Integrated Resource Management Plan (NCIP) and Environmental Impact Statement (EIS), the Redding and Arcata Field Offices joint interdisciplinary team (IDT) reviewed all Bureau of Land Management (BLM)-managed lands in the planning area to determine whether any internally nominated areas should be considered for designation as areas of critical environmental concern (ACEC). In addition, the BLM sought public comments, nominations, and modifications to existing ACECs during the initial scoping period of the NCIP in 2017 (before the initial effort was terminated in 2018), and again during the scoping period for the NCIP Notice of Intent and ACECs from April 29 to June 28, 2022. The BLM IDT reviewed all ACEC nominations provided by the public to determine if any of the proposed areas should be considered for designation in addition to reviewing all existing ACECs to determine if the designations were still relevant.

The purpose of this report is to summarize the findings of the BLM's evaluations, identify areas that meet the relevance and importance (R&I) criteria and are considered in the NCIP alternatives as potential ACECs, and list areas that do not meet R&I criteria and thus will not be considered further.

G.I.1 Areas of Critical Environmental Concern

Authorities and Definition

An ACEC is defined in Section 103(a) of the Federal Land Policy and Management Act (FLPMA) as “areas within public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important cultural, historic, or scenic values; fish and wildlife resources or other natural systems or processes; or to protect life and safety from natural hazards.” Special management attention refers to the management prescriptions developed in the preparation of the NCIP to protect the important and relevant values of an area from potential effects of actions permitted by the NCIP. These management prescriptions are provided in **Table B-1** of **Appendix B** in the Final EIS. Alternatives are analyzed in **Appendix D** (summarized in Chapter 3: Affected Environment and Environmental Consequences of the Proposed RMP/Final EIS).

Area of Analysis

The analysis area for this ACEC report includes all BLM-administered public lands in the Redding and Arcata Field Offices, excluding the Headwaters Forest Reserve, King Range National Conservation Area, Cascade-Siskiyou National Monument, and the California Coastal National Monument (see **Section 1.3** in **Chapter 1** of the RMP/EIS for additional explanation). The BLM does not manage private surface land or private mineral estate as part of an ACEC.

ACEC Designation Process

There are several steps in the process of designating ACECs. Each of these steps is described in further detail in Section 2, Requirements for ACEC Designation:

- Nomination (by the public or BLM) of areas that may meet the relevance and importance criteria;
- Evaluation of the nominated areas to determine if they meet the criteria;
- Consideration of potential ACECs in alternative management scenarios in the Draft EIS/RMP and Proposed EIS/RMP, and through public comment;
- Designation of ACECs in the Record of Decision approving the NCIP.

G.2 REQUIREMENTS FOR ACEC DESIGNATION**G.2.1 Identifying ACECs**

In order for an area to qualify for ACEC designation, it must undergo a thorough assessment based on the criteria of importance and relevance outlined in FLPMA and 43 CFR 1610.7-2. This involves a comprehensive evaluation and analysis process to determine its eligibility for ACEC status. Additionally, the BLM provides policies and procedures for inventorying, designating, and managing ACECs, described in BLM Manual 1613 and Instruction Memorandum (IM) 2023-013, “Clarification and Interim Guidance for Consideration of Areas of Critical Environmental Concern Designations in Resource Management Plans and Amendments.”

As described in 43 CFR 1610.7-2(b) and BLM Manual 1613, an ACEC possesses significant cultural, historic, or scenic values; fish or wildlife resources (including habitat, communities, or species); natural processes or systems; or natural hazards. In addition, the significance of these values and resources must meet at least one of the following relevance criteria and one (or more) of the following importance criteria to be eligible for designation.

Relevance and importance (R&I) are defined as follows:

- **Relevance**—There shall be present a significant historic, cultural, or scenic value, a fish or wildlife resource or other natural system or process, or natural hazard.
- **Importance**—The above-described value, resource, system, process, or hazard shall have substantial significance and value, which generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. A natural hazard can be important if it is a significant threat to life or property.

Instruction Memorandum 2023-0013

BLM IM 2023-0013 provides additional program guidance on prioritizing the designation and protection of ACECs through the land use planning process. The IM revises and clarifies existing policy and procedures for the designation of ACECs to ensure that the BLM considers public lands and resources for conservation, where appropriate. The inventory of values, resources, systems, processes, and natural hazards should be kept current to reflect changes in conditions and identify new and emerging resource and other values. When considering whether values meet the criteria for R&I, the BLM evaluated whether these values contribute to landscape intactness, climate resiliency, or habitat connectivity; provide opportunities for conservation and restoration; or support Tribal co-stewardship or traditional and customary uses.

All designated ACECs are considered open for potential co-stewardship with Tribes. All proposed actions within ACECs are analyzed on a project implementation level, and it is required that they are consistent with R&I values, including proposed actions under co-stewardship with Tribes. The BLM aims to work collaboratively with Tribes to ensure that the unique cultural, spiritual, and ecological values of these areas are recognized and protected.

Relevance Criteria

An area meets the ACEC relevance criterion if one or more of the following statements apply:

- 1) Area is of significant cultural, historic, or scenic value (including but not limited to rare or sensitive archaeological resources and religious or cultural resources important to Native Americans).
- 2) Area is a fish or wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).
- 3) Area has a natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features).
- 4) Area has a natural hazard (including but not limited to areas susceptible to avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or areas containing dangerous cliffs). A hazard caused by human action may meet the relevance criteria if the RMP process determines that it has become part of a natural process.

Importance Criteria

An area meets the importance criterion if it meets one or more of the following:

- 1) The area has more than locally significant qualities that give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.
- 2) The area has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
- 3) The area has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.
- 4) The area has qualities that warrant highlighting in order to satisfy public or management concerns about safety and public welfare.
- 5) The area poses a significant threat to human life and safety or property.

G.2.2 Evaluation of Nominations for Relevance and Importance

All ACEC nominations were evaluated by the BLM IDT to determine if they meet the relevance and importance criteria mentioned above. The results of this evaluation are included in Section 3 - Evaluations for Existing and Proposed ACECs. When identifying areas to be analyzed in this report, the BLM IDT followed guidance in BLM Manual 1613 and considered:

- 1) Existing ACECs;
- 2) Areas recommended for ACEC consideration (internal and external nominations);
- 3) Areas identified through inventory and monitoring; and
- 4) Adjacent designations of other federal and state agencies.

G.2.3 Consideration and Designation Process of Potential ACECs

All ACECs were considered during the development of alternatives for the NCIP and each potential ACEC was proposed for designation under at least one of the management alternatives of the Proposed RMP/Final EIS. The proposed alternative (Alternative D) in the Proposed RMP/Final EIS identifies which ACECs are proposed for designation, also displayed in Table 31 Summary of ACECs Under Proposed Alternative.

As part of the NCIP development process, the BLM sought further public input on ACEC nominations. A notice of any areas proposed for ACEC designation were published in the *Federal Register* along with the notice of availability requesting public comments on the Draft NCIP/EIS. This comment period provided the public the opportunity to comment during a 90-day review period on the Draft NCIP/EIS and the BLM IDT's ACEC analysis. All substantive comments were considered when preparing the Proposed RMP/Final EIS, which will be available for the public to provide input during a 30-day protest period before a Record of Decision for the Proposed RMP/Final EIS is complete.

The following tables (Tables 1 through 4) include each ACEC, source of designation or nomination, acres designated or proposed, and rationale for designation or removal from designation.

**Table G-1
Existing ACECs**

Name/Area	Source and Year of Designation	Existing Acres	Original Rationale for Designation
Baker Cypress ACEC	Redding Resource Management Plan (RMP) 1993	141	Rare Baker cypress (<i>Hesperocyparis bakeri</i>)
Butte Creek ACEC	Arcata RMP 1992	2,254	Late Successional Reserves (LSR) and Northern Spotted Owl
Deer Creek ACEC	Redding RMP 1993	567	Scenic qualities of the canyon, protection of raptors in the area, and conservation of archaeological resources, and protection of ecologically intact habitat for wildlife
Elder Creek ACEC	Arcata RMP 1992	3,059	Elder Creek designated as a Registered Natural History Landmark under Historic Sites Act / United Nations Educational, Scientific and Cultural Organization (UNESCO) Biosphere Reserve; water quality and forest health
Forks of Butte Creek ACEC	Redding RMP 1993	2,900	Scenic qualities, cultural resources, BLM special status species, and fisheries
Gillham Butte ACEC	Arcata RMP 1992	2,619	Late Successional Reserves
Hawes Corner ACEC	Redding RMP 1993	38	Federally Threatened Slender Orcutt grass (<i>Orcuttia tenuis</i>)
Iaqua Buttes ACEC	Arcata RMP 1992	1,111	Late Successional Reserves
Lacks Creek Watershed ACEC	Arcata RMP 1992	2,987	Late Successional Reserves, Park Protection Zone

Name/Area	Source and Year of Designation	Existing Acres	Original Rationale for Designation
Lacks Creek ACEC	Arcata RMP 1992 (expanded in Arcata RMP Forest Plan Amendment)	7,479	Late Successional Reserves, Park Protection Zone
Ma-le'i (Manila) Dunes ACEC	Arcata RMP 1992	150	Natural values (active and stabilized sand dunes, wetlands, and sensitive plants)
Sacramento Island ACEC	Redding RMP 1993	91	Sensitive Natural Community (Great Valley Oak Riparian Forest)
Sacramento River Bend ACEC	Redding RMP 1993	18,596	Sensitive Natural Community (Great Valley Mixed Riparian Forest), BLM special status plants, cultural resources, wildlife (raptors), wetland systems, anadromous fish spawning habitat
Shasta and Klamath River Canyon ACEC	Redding RMP 1993	1,207	Sensitive riparian and fisheries habitat
Swasey Drive ACEC	Redding RMP 1993	468	Cultural resources
Red Mountain ACEC	Red Mountain Management Framework Plan (1981c)	6,811	Unique botanical values associated with red, serpentine soils, anadromous fishery (Cedar Creek), rare vegetation type/wildlife habitat (LSRs), northern spotted owl
South Fork Eel River ACEC	Arcata RMP 1992	7,109	Anadromous fishery, rare vegetation type/wildlife habitat (LSRs)

Table G-2
Removal of ACEC Designation

Name/Area	Rationale for Designation Removal
Elder Creek ACEC	Congressionally designated as Wilderness
Red Mountain ACEC	Congressionally designated as Wilderness
South Fork Eel River ACEC	Congressionally designated as Wilderness

Table G-3
Existing ACECs Being Analyzed

Name/Area	Boundary Adjustment	Proposed Alternative Proposed Acres	Rationale for Nomination/Expansion
Upper Burney Dry Lake and Baker Cypress ACEC	Expansion	209	Rare Baker cypress (<i>Hesperocyparis bakeri</i>), Sensitive Natural Community (Northern Interior Cypress Forest), and mountain vernal lake habitat
Butte Creek ACEC	Same	2,254	Forests with late successional characteristics and Northern Spotted Owl
Deer Creek ACEC	Same	567	Scenic qualities of the canyon, protection of raptors in the area, and conservation of archaeological resources, and protection of ecologically intact habitat for wildlife

Name/Area	Boundary Adjustment	Proposed Alternative Proposed Acres	Rationale for Nomination/Expansion
Forks of Butte Creek ACEC	Same	2,900	Scenic qualities, cultural resources, BLM special status plants, and fisheries
Gilham Butte ACEC	Expansion	9,328	Forests with late successional characteristics, "Corridor to the Sea" from Redwood National and State Park (RNSP), and part of essential corridors of connectivity
Hawes Corner ACEC	Same	38	Federally Threatened Slender Orcutt grass (<i>Orcuttia tenuis</i>)
Iaqua Buttes ACEC	Same	1,111	Forests with late successional characteristics
Lacks Creek ACEC	Reduction	2,141	Old-growth forests- ACEC reduced to more accurately match existing old growth and associated unique ecosystem characteristics
Ma-le'i (Manila) Dunes ACEC	Expansion	180	Unique and sensitive cultural resources, unique botanical values, rare and endangered plants, and coastal dune habitat suitable for nesting western snowy plovers
Sacramento Island ACEC	Same	91	Sensitive Natural Community (Great Valley Oak Riparian Forest)
Sacramento River Bend ACEC	Expansion	20,418	Unique and sensitive cultural resources, Sensitive Natural Community (Great Valley Riparian Forest), Federally Threatened slender Orcutt grass (<i>Orcuttia tenuis</i>), unique habitat for wetland plants and animals (vernal pools), and important connectivity corridor
Shasta and Klamath River Canyon ACEC	Expansion	1,270	Sensitive riparian and fisheries habitat
Swasey Drive ACEC	Same	468	Cultural resources

Table G-4
Externally and Internally Nominated ACECs to be Considered

Name/Area	Nominated By	Proposed Alternative Proposed Acres	Rationale for Nomination/Expansion
Grass Valley Creek ACEC	Internal and External - California Wilderness Coalition (CalWild)	19,560	To protect fragile highly erosive soils, protect unique serpentine soils, reduce sediment delivery to the Trinity River, and maintain the important stronghold to climate change and ecosystem resiliency and diversity
Swasey Drive Clear Creek Greenway ACEC	External - CalWild	5,964	Cultural resources, unique geophysical and ecological features that support diverse plant communities, and high climate resilience that facilitates natural processes
Upper and Lower Clear Creek ACEC	Internal	4,558	Sensitive anadromous salmonid habitat, riparian communities, and unique scenic values of the Clear Creek canyon

Name/Area	Nominated By	Proposed Alternative Proposed Acres	Rationale for Nomination/Expansion
Sheep Rock ACEC	Internal	1,410	Irreplaceable scenic, wildlife (e.g., nesting raptors), historic, and cultural values
Black Mountain ACEC	Internal	1,114	Irreplaceable timber stands with old growth characteristics, coniferous forests habitat, unique geologic features, cultural resources, and wildlife
Upper Klamath Bench ACEC	Internal	89	Unique and sensitive cultural and natural resources
Upper Mattole ACEC	Internal	459	Rare and sensitive riparian and fisheries habitat values
Eden Valley ACEC	Internal	10,807	Rare and unique geologic features, rare and endemic plants and plant communities, cold-water source for listed salmonids, and conservation of cultural and archeological values
Eden Creek ACEC	External- CalWild	4,588	Rare and unique geologic features, rare and endemic plants and plant communities, and cold-water source for listed salmonids, and to conserve cultural and archeological values
Beegum Creek Gorge ACEC	External - CalWild	4,377	Scenic, fisheries, and wildlife resources; ecological intactness; and rare and sensitive geological and lithological features that support unique plant communities
North Fork Eel ACEC	External - CalWild	500	To protect sensitive geological and lithological features, along with fisheries, and wildlife resources
Willis Ridge ACEC	Internal	3,184	To protect forests with late successional characteristics, along with fisheries and wildlife resources
South Spit ACEC	Internal	888	Sensitive plant and wetland habitat and cultural resources
Corning Vernal Pools ACEC	Internal	173	Rare critical habitat that supports threatened and endangered vernal pool species (e.g., Vernal Pool Fairy Shrimp); BLM special status plant populations associated with unique vernal pool habitat
North Table Mountain ACEC	Internal	53	Populations of the rare Butte County Golden Clover (<i>Trifolium jokerstii</i>) and Red Bluff dwarf rush (<i>Juncus leiospermus</i> var. <i>leiospermus</i>)

G.3 EVALUATIONS FOR EXISTING AND PROPOSED ACECS

G.3.1 Upper Burney Dry Lake and Baker Cypress ACEC

Table G-5
Upper Burney Dry Lake and Baker Cypress Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor ¹	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Plant Communities	3	1 2	No	N/A	N/A	141	209
	Essential Habitat	2	2					

Rationale for ACEC – Plant Communities & Essential Habitat

The Upper Burney Dry Lake and Baker Cypress ACEC is located in eastern Shasta County. The Baker Cypress parcel is located 8 miles south-southwest of Burney, just east of Tamarack Road. Upper Burney Dry Lake is located just north of the Baker Cypress parcel, adjacent to Tamarack Road. The existing Baker Cypress ACEC would be expanded from 141 acres to 183 acres. The expanded Baker Cypress ACEC and the newly proposed Upper Burney Dry Lake ACEC would be designated as one ACEC named Upper Burney Dry Lake and Baker Cypress ACEC, totaling 209 acres. The ACEC has regionally significant and irreplaceable plant communities and provides rare vernal pool habitat for several animal and plant species.

The Upper Burney Dry Lake and Baker Cypress ACEC contains a large and vigorous stand of the Baker cypress (*Hesperocyparis bakeri*) population. Baker cypress is a species of rare cypress tree thought to only exist in 11 disparate locations throughout the northern Sierra Nevada, Cascade, and Siskiyou Mountains. There is a high diversity and genetic differentiation between the various populations of Baker cypress, which increases the need to protect each distinct stand. Baker cypress can grow in association with chaparral, mixed, or montane coniferous forest, in generally infertile soils, from elevations of 3,795 to 7,042 feet. Baker cypress is a California Native Plant Society (CNPS) list 4.2 species, meaning that it is a species of limited distribution and fairly threatened in California. Baker cypress is a fire-adapted species with serotinous cones that only open after a high-intensity fire. Additionally, the seeds need high light and exposed mineral soils in order to germinate, characteristics often found after an area has burned. However, after years of fire suppression these conditions do not exist, and regeneration is often limited. In addition, despite the necessity of fire in reproduction, this stand of Baker cypress is also vulnerable to repeated high-severity fires on a short fire interval, as fires of this type can significantly limit regeneration if they occur before the population is mature enough to produce cones.

The ACEC also includes Upper Burney Dry Lake, a large vernal pool fed by a combination of rainfall, snowmelt, and a small spring at the southern end which feeds the lake after passing through a small pond. Aquatic surveys have found one species of tadpole shrimp (*Lepidurus cryptus*), two species of fairy shrimp (*Streptocephalus sealii* and *Branchinecta oriena*), and two species of frogs/toads in the area, none of which are

¹ Refers to Essential Connectivity Corridors of High Biological Value. California Department of Fish and Wildlife. (2010). *Essential Habitat Connectivity Project*. <https://wildlife.ca.gov/Conservation/Planning/Connectivity/CEHC>

currently federally listed. A potential eagle nesting site was observed on the east side of the lake on BLM land. At low water levels, the area becomes a large meadow that provides breeding habitat for amphibians and invertebrates. Numerous mudflats provide shorebirds with foraging opportunities, and plant cover around the edges provides nesting habitat and cover for various waterfowl species. Unique vernal pool plants are found in this area.

The Upper Burney Dry Lake and Baker Cypress ACEC (209 acres) would be managed to protect and promote the rare Baker cypress and mountain vernal pool habitat. These parcels require special management to reduce disturbance in the vernal pool by excluding trespass cows and off-highway vehicles (OHVs) and to revitalize the health of the Baker cypress stands by reducing competition and overcrowding through fire and removal of conifer overstory.

Figure G-1
Existing Baker Cypress Existing ACEC Map

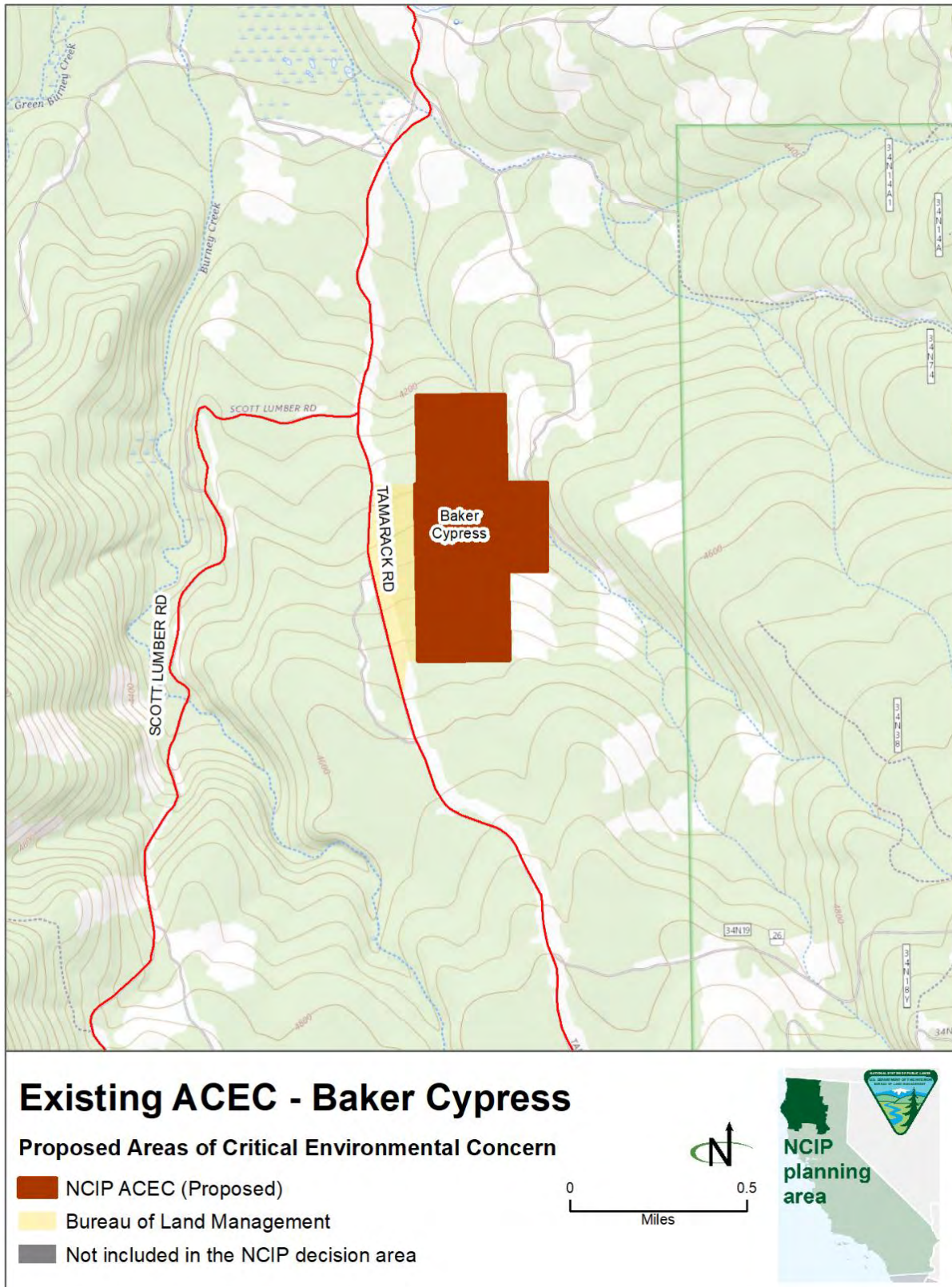
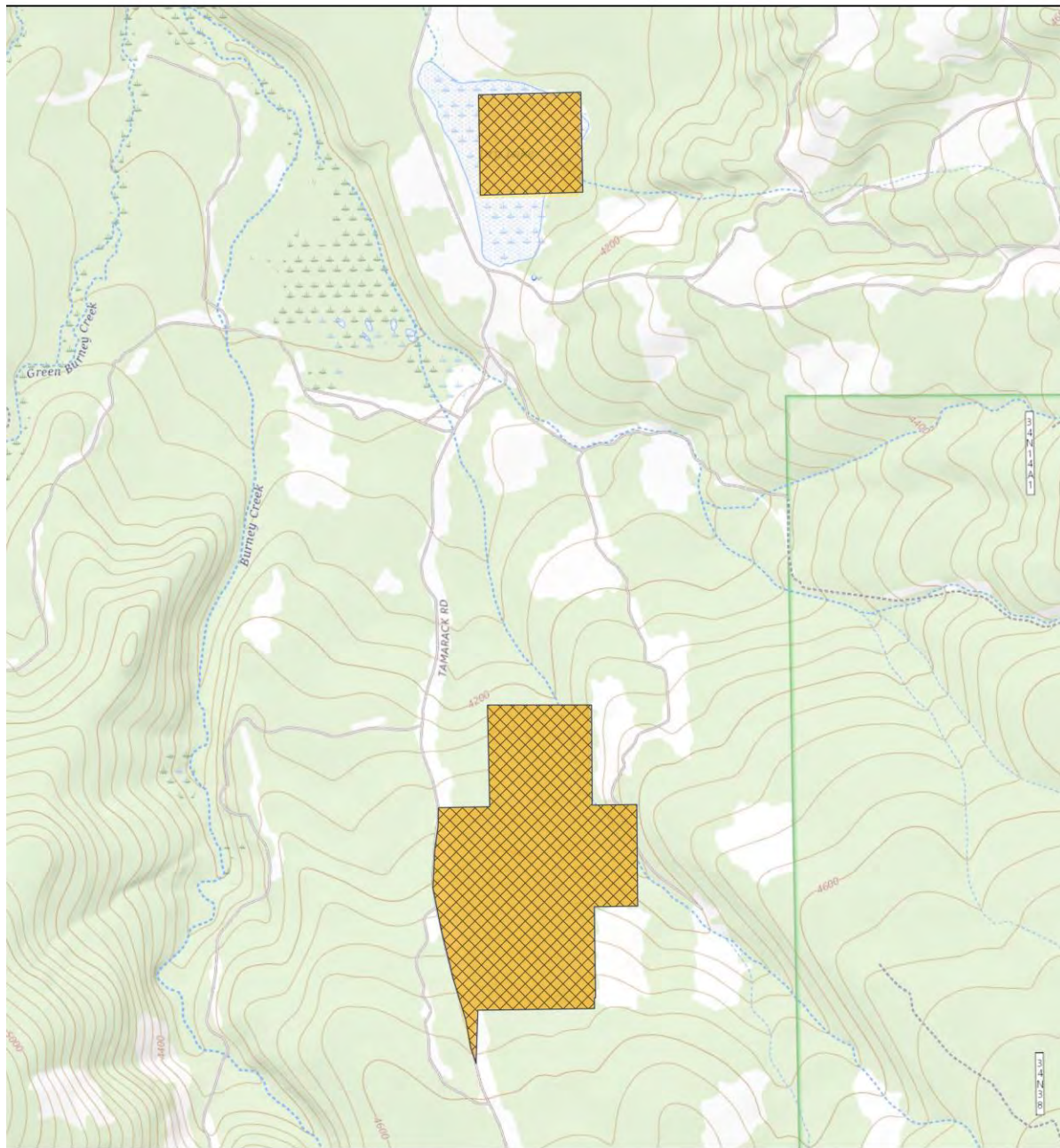


Figure G-2
Upper Burney Dry Lake and Baker Cypress ACEC Map (Existing and Alternatives (Alt) B and D, Not Carried Forward in Alt C)



NCIP ACECs

- [---] Planning Area Boundary
- [X] ACECs (All)
- [Orange] ACECs (Retained)
- [Yellow] BLM Lands (NCIP)



Upper Burney Dry Lake and Baker Cypress ACEC

G.3.2 Butte Creek ACEC

Table G-6
Butte Creek Summary of ACEC Findings

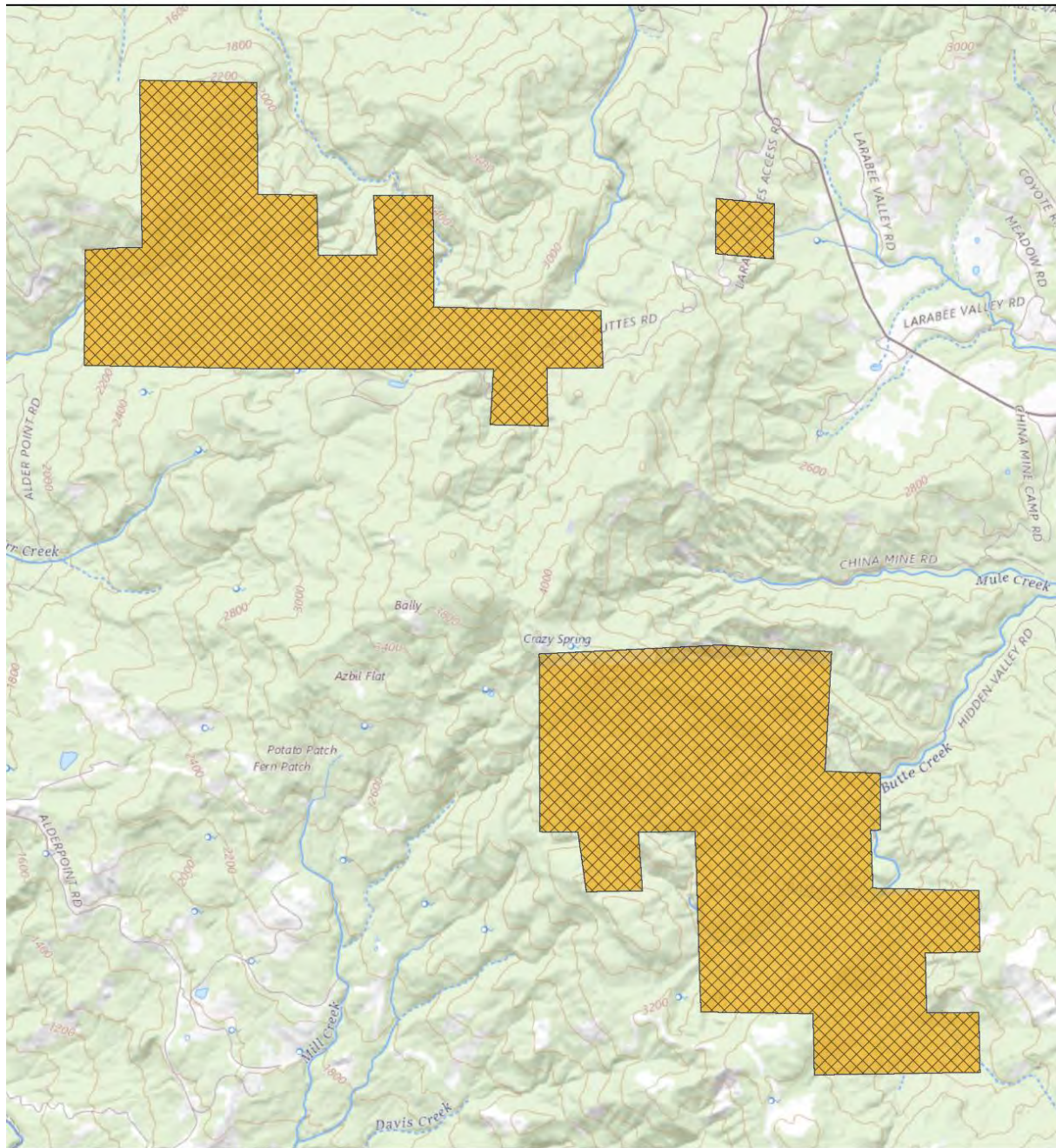
Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Plant Communities	3	I	Partially	Yes ¹⁻²	Yes ²⁻³	2,254	2,254
	Wildlife	2	I					
	Fisheries	2	I					

1. Northern Spotted Owl (*Strix occidentalis caurina*)
2. Summer-run and winter-run steelhead (*Oncorhynchus mykiss*)
3. Forests with late successional characteristics

Rationale for ACEC – Plant Communities, Wildlife, and Fisheries

The existing 2,254-acre Butte Creek ACEC, west of Larabee Valley in Humboldt County meets multiple R&I values, including wildlife, fish, and plant communities. It provides important roosting, foraging, and dispersal habitat and is designated critical habitat for the northern spotted owl within the Arcata Resource Area. Portions of the ACEC have stands of large diameter Douglas fir that exhibit late successional characteristics that are critical for many wildlife species, especially the Northern Spotted Owl, and provide for a diversity of habitat types. Butte Creek supports summer-run and winter-run steelhead. Both runs are listed as threatened under the federal Endangered Species Act (ESA) and the summer-run is listed as endangered under the state ESA. Additionally, the ACEC has 3.2 miles of stream identified as eligible in the 2023 Wild and Scenic Rivers (WSR) Eligibility Report. The late successional values for this ACEC have increased importance because they fall within statewide identified Essential Corridors of High Biological Value. The corridors are areas of natural habitat that are especially important to wildlife and plants for connectivity, ease of migration, and habitat resilience in the era of climate change.

Figure G-3
Butte Creek ACEC Map (Existing and Alts B and D, Not Carried Forward under Alt C)



NCIP ACECs

Butte Creek ACEC

- [- -] Planning Area Boundary
- [X] ACECs (All)
- [Orange] ACECs (Retained)
- [Yellow] BLM Lands (NCIP)



G.3.3 Deer Creek ACEC

Table G-7
Deer Creek Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Scenic	1	1	Yes	Yes ¹	Yes ¹	567	567
	Wildlife	2	2					
	Fisheries	2	2					
	Cultural and Historic	1	1					

1. The Central Valley steelhead District Population Segment (DPS) and spring-run Chinook ESU are listed as threatened under the ESA.

Rationale for ACEC – Scenic, Wildlife, Fisheries, and Cultural and Historic

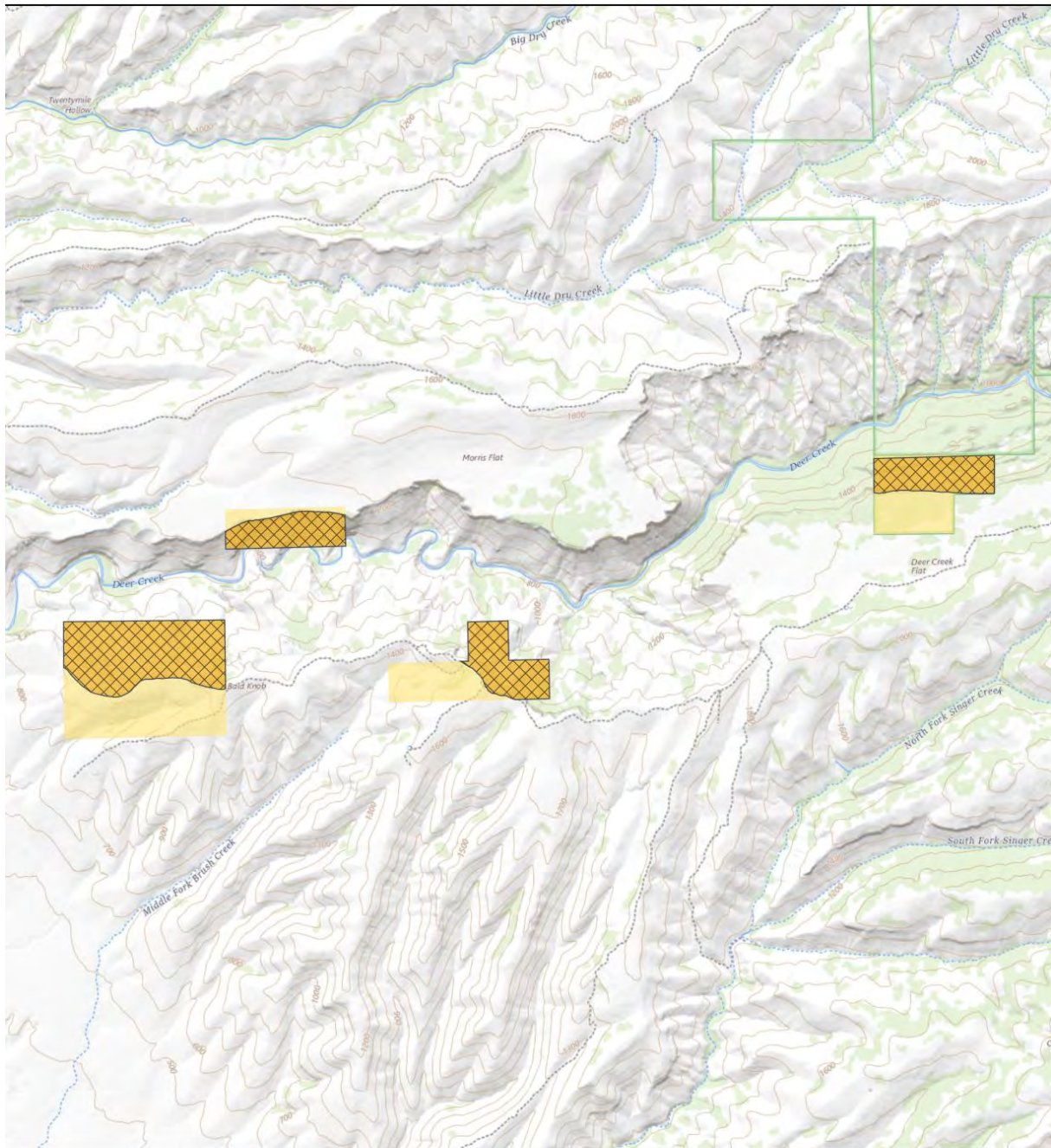
The Deer Creek ACEC is located on four discontinuous parcels along Deer Creek in Butte County, totaling 567 acres. The ACEC has regionally significant historic and cultural values, scenic qualities, rare wildlife habitat, and habitat that supports threatened fisheries.

The existing 567-acre Deer Creek ACEC meets multiple R&I criteria. Deer Creek has tremendous biological importance due to the diversity and sensitivity of many species, including peregrine falcon, spring-run Chinook salmon (*Oncorhynchus tshawytscha*), and Steelhead – Central Valley DPS (*O. mykiss*), a federally threatened species. The canyon also contains nationally significant cultural resources in good to excellent condition. There is regional recreational value along the creek as well, including hiking trails in Lassen Volcanic National Park, creek-side campground in Lassen National Forest, and whitewater running within and below Lassen National Forest.

The Federal government has a long-term commitment to keep the majority of the Deer Creek unmodified. Public ownership of this remaining segment of the creek above the Deer Creek Irrigation Diversion Dam will help ensure the long-term protection and management continuity of the stream. This ACEC has additional importance because it occurs within statewide-identified Essential Connectivity Corridors of High Biological Value. The corridors are areas of natural habitat that are especially important to wildlife and plants for connectivity, ease of migration, and habitat resilience in the era of climate change.

Special management attention is necessary to protect the natural values, cultural resources, and nearby wilderness (Ishi Wilderness) values, while providing opportunities for undeveloped recreation. Therefore, designation as an ACEC is warranted.

Figure G-4
Deer Creek ACEC Map (Existing and Alts B and D, Not carried Forward under Alt C)



NCIP ACECs

Deer Creek ACEC

- [- -] Planning Area Boundary
- [X] ACECs (All)
- [Orange] ACECs (Retained)
- [Yellow] BLM Lands (NCIP)



G.3.4 Forks of Butte Creek ACEC

Table G-8
Forks of Butte Creek Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Plant Communities	3	I	Yes	Yes ¹⁻³	Yes ²⁻³	2,900	2,900
	Scenic	I	I					
	Cultural and Historic	I	I					
	Fisheries	2	I					

1. The foothill yellow-legged frog is listed as threatened under the California Endangered Species Act (CESA).

2. The chinook salmon – Central Valley spring-run ESU is listed as threatened under the CESA and threatened under the ESA.

3. The steelhead – Central Valley DPS is listed as threatened under the ESA.

Rationale for ACEC – Plant Communities, Scenic, Cultural and Historic, and Fisheries

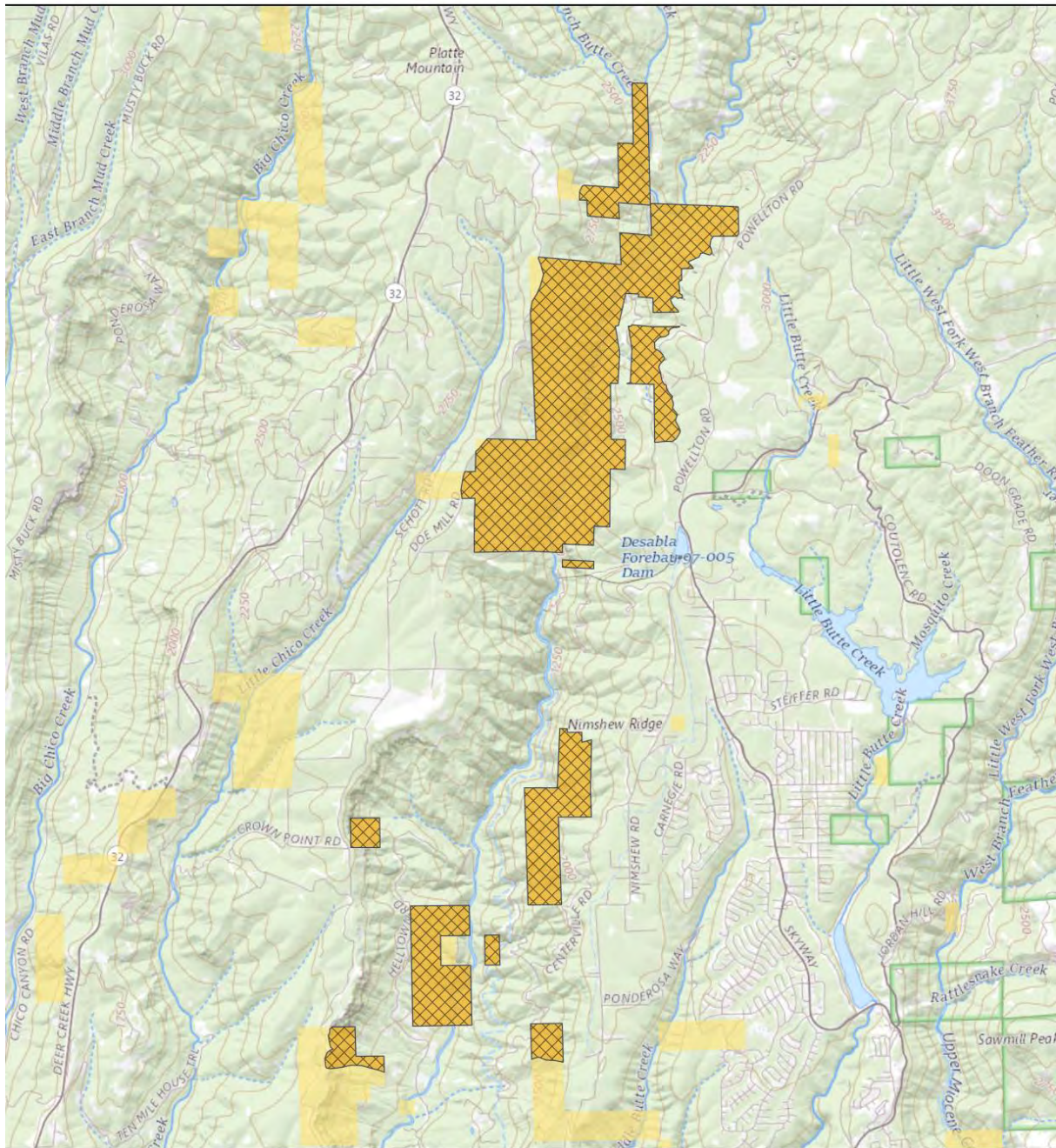
The Forks of Butte ACEC is located in Butte County in Butte Creek Canyon between the communities of Paradise, Magalia, Centerville and Forest Ranch. The ACEC has regionally significant scenic, cultural and historical, and fisheries values. This creek is a stronghold for federally threatened spring-run Chinook salmon (*Oncorhynchus tshawytscha*). The ACEC has 1.5 miles of stream identified as eligible in the 2023 VSR Eligibility Report. The existing Forks of Butte Creek ACEC (2,900 acres) meets multiple R&I criteria, such as scenic, fisheries, wildlife, rare plant populations, cultural and historic, and old -growth forest. Forks of Butte Creek hosts a unique natural system which supports a mixed-conifer forest with old-growth characteristics and riparian vegetation. It further serves to facilitate natural processes essential to maintaining species diversity and climate resiliency due to its ecological intactness. It is also habitat for a known population of *Cardamine pachystigma* var. *dissectifolia* (IB.2), a rare species in the Brassicaceae family.

In addition, the area contains diverse aquatic and terrestrial habitat that supports endangered, threatened, and sensitive species such as spring-run Chinook salmon, Central Valley steelhead (*O. mykiss*), Pacific lamprey (*Lempetra tridentata*), and the North Feather River distinct population segment of foothill yellow-legged frog (*Rana boylei*). Butte Creek is one of only three streams in the Central Valley that supports a self-sustaining population of spring-run Chinook. Butte Creek is an important contributor to the recovery of threatened winter-run steelhead and supports fall-run Chinook salmon. This ACEC has increased importance because it falls within statewide identified Essential Connectivity Corridors of High Biological Value. The corridors are areas of natural habitat that are especially important to wildlife and plants for connectivity, ease of migration, and habitat resilience in the era of climate change.

In addition to its natural resource R&I values, the ACEC contains regionally significant cultural resources, including historic hydroelectric facilities and archaeological remnants of the historic Helltown and other early gold mining communities. These were multicultural communities with significant populations of Native American and Chinese immigrant workers among others. The area retains significant cultural and scientific values in need of special management.

Due to a history of fire suppression, Forks of Butte Creek is particularly vulnerable to high-severity wildfire. Several significant wildfires that have occurred recently within the region, including the 2021 Dixie Fire in the Upper Butte Creek Watershed, illustrate the threats posed to the watershed by climate change and other anthropogenic factors. Special management and designation as an ACEC is thereby warranted to protect these R&I values.

Figure G-5
Forks of Butte ACEC Map (Existing, Alt B, Alt C and Alt D)



0 1
Mile

NCIP ACECs

- [- -] Planning Area Boundary
- [X] ACECs (All)
- [Orange] ACECs (Retained)
- [Yellow] BLM Lands (NCIP)

Forks of Butte Creek ACEC

G.3.5 Gilham Butte ACEC

Table G-9
Gilham Butte Summary of ACEC Findings

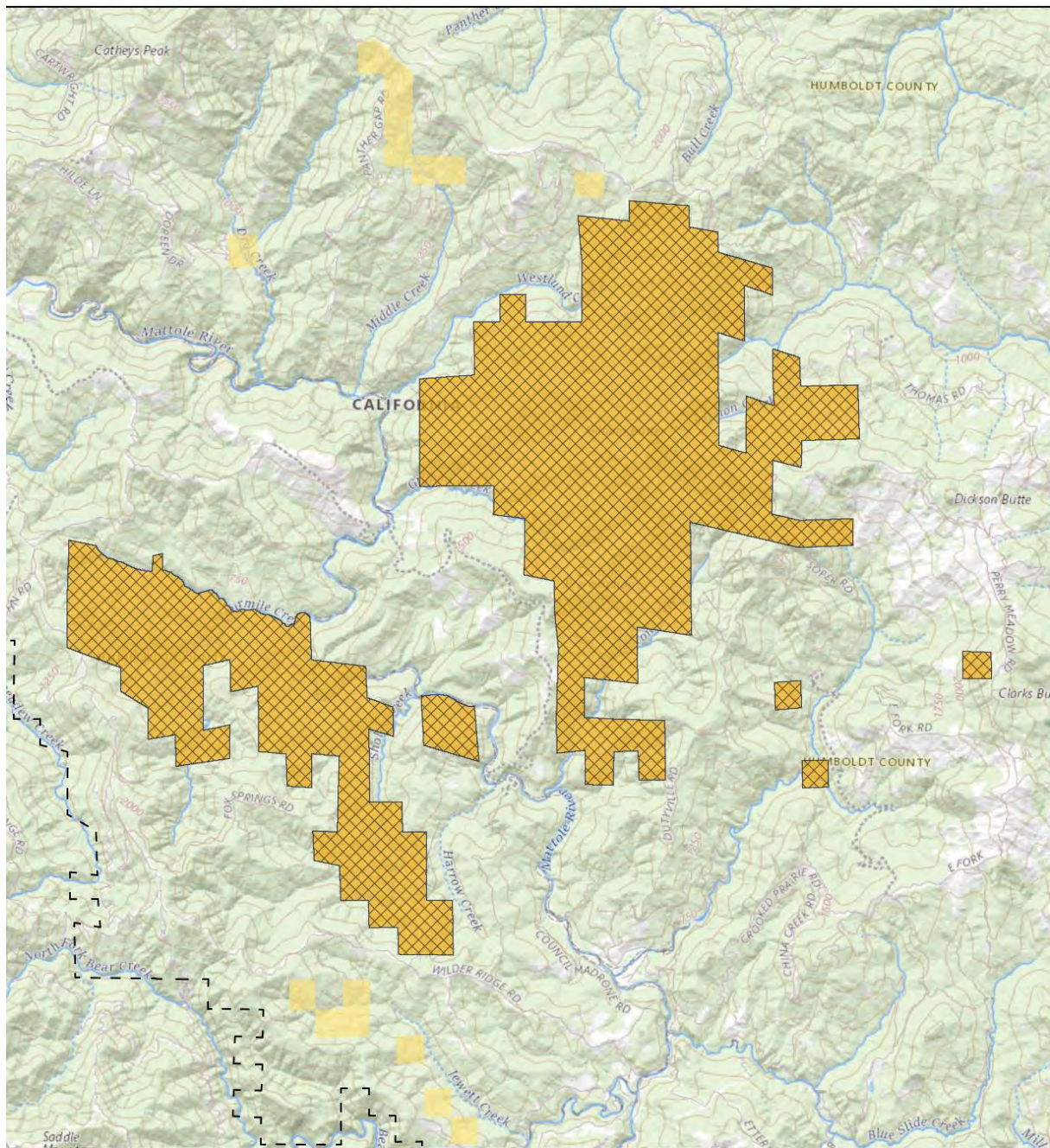
Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Plant Communities	3	I	Yes	N/A	Yes ^{1,2}	2,619	Alt B – 9,328; Alt C – 2,619

1. Marbled Murrelet (*Brachyramphus marmoratus*)
2. Northern Spotted Owl (*Strix occidentalis caurina*)
3. Forests with late successional characteristics

Rationale for ACEC – Plant Communities

The existing Gilham Butte ACEC (currently 2,619 acres but proposed to expand to 9,328 acres under the Proposed Alternative D) is located south of Humboldt Redwoods State Park in Humboldt County, CA and contains stands that exhibit late successional characteristics that are critical for many wildlife species, especially the Northern Spotted Owl, and provide for a diversity of habitat types. In addition, it the ACEC contains designated critical habitat for the marbled murrelet (*Brachyramphus marmoratus*) and northern spotted owl (*Strix occidentalis caurina*). Designating this area as an RNA/ACEC is essential for the preservation of old-growth values. The expansion includes additional stands that already exhibit significant late successional characteristics. The expansion also includes portions of Fourmile and Sholes Creeks, which have suitable habitat for threatened Chinook salmon, coho salmon, and steelhead. Further, the ACEC has 9.8 miles of stream identified as eligible in the 2023 WSR Eligibility Report. The late successional characteristics for this ACEC have increased in importance because they fall within statewide identified Essential Corridors of High Biological Value. The corridors are areas of natural habitat that are especially important to wildlife and plants for connectivity, ease of migration, and habitat resilience in the era of climate change.

Figure G-6
Gilham Butte w/Addition ACEC Map (Carried Forward under Alts B and D)



0 1
Mile

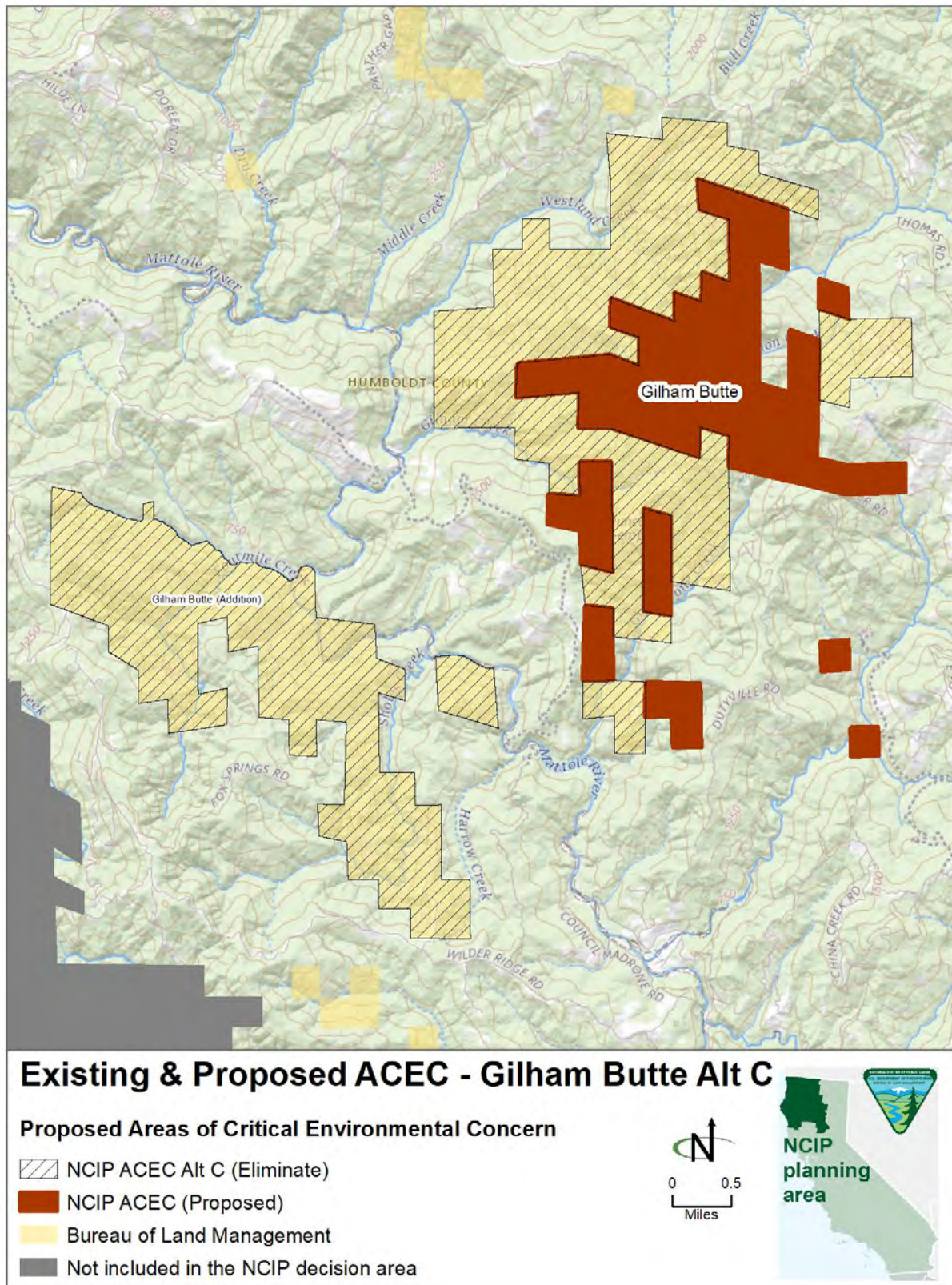
NCIP ACECs

Gilham Butte ACEC

- [- - -] Planning Area Boundary
- [X] ACECs (All)
- [Solid Yellow] ACECs (Retained)
- [Yellow] BLM Lands (NCIP)



Figure G-7
Gilham Butte ACEC Map (Existing and Proposed under Alt C)



G.3.6 Hawes Corner ACEC

Table G-10
Hawes Corner Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Plant Communities	3	I	No	Yes ¹⁻³	Yes ¹⁻³	38	38
	Wildlife	2	I					

1. The slender Orcutt grass is listed as endangered under the CESA and threatened under the ESA.

2. The vernal pool tadpole shrimp is listed as endangered under the ESA.

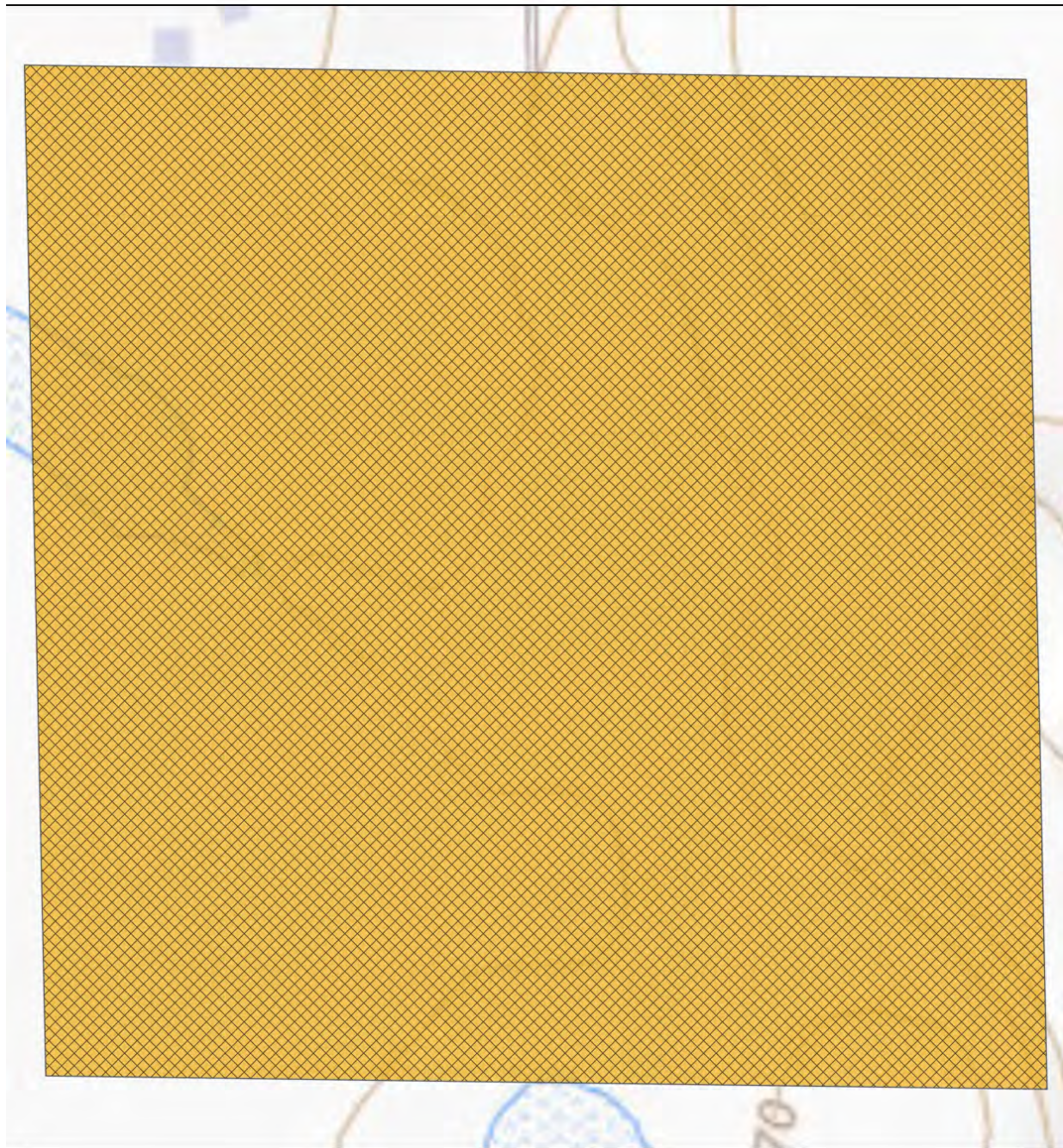
3. The vernal pool fairy shrimp is listed as threatened under the ESA.

Rationale for ACEC – Plant Communities

The Hawes Corner ACEC is located on a small parcel in Anderson, Shasta County, California. It is about 0.2 mi north of Dersch Road, between Beatie Road to the east and Hunting Club Road to the west. Hawes Corner ACEC contains regionally significant plant communities as well as threatened and endangered species.

The existing Hawes Corner ACEC meets multiple R&I values. The plant community includes Slender orcutt grass (*Orcuttia tenuis*), which is Endangered under the CESA and Threatened under the ESA. In addition, the ACEC contains the vernal pool tadpole shrimp (*Lepidurus packardii*), which is listed as Endangered under the ESA, and the vernal pool fairy shrimp (*Branchinecta lynchi*), which is listed as Threatened under the ESA. Designating Hawes Corner an ACEC will conserve extremely important vernal pool habitat in the Central Valley that is vital habitat for slender Orcutt grass, improving long-term survival of this species.





Figure G-8
Hawes Corner ACEC Map (Existing and Alts B and D, Not Carried Forward under Alt C)



0

NCIP ACECs

Hawes Corner ACEC

-  Planning Area Boundary
-  ACECs (All)
-  ACECs (Retained)
-  BLM Lands (NCIP)



G.3.7 laqua Butte ACEC

Table G-11
laqua Butte Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Plant communities	3	1	No	Yes ¹	Yes ²⁻³	1,111	1,111

1. Marbled Murrelet (*Brachyramphus marmoratus*)

2. Northern Spotted Owl (*Strix occidentalis caurina*)

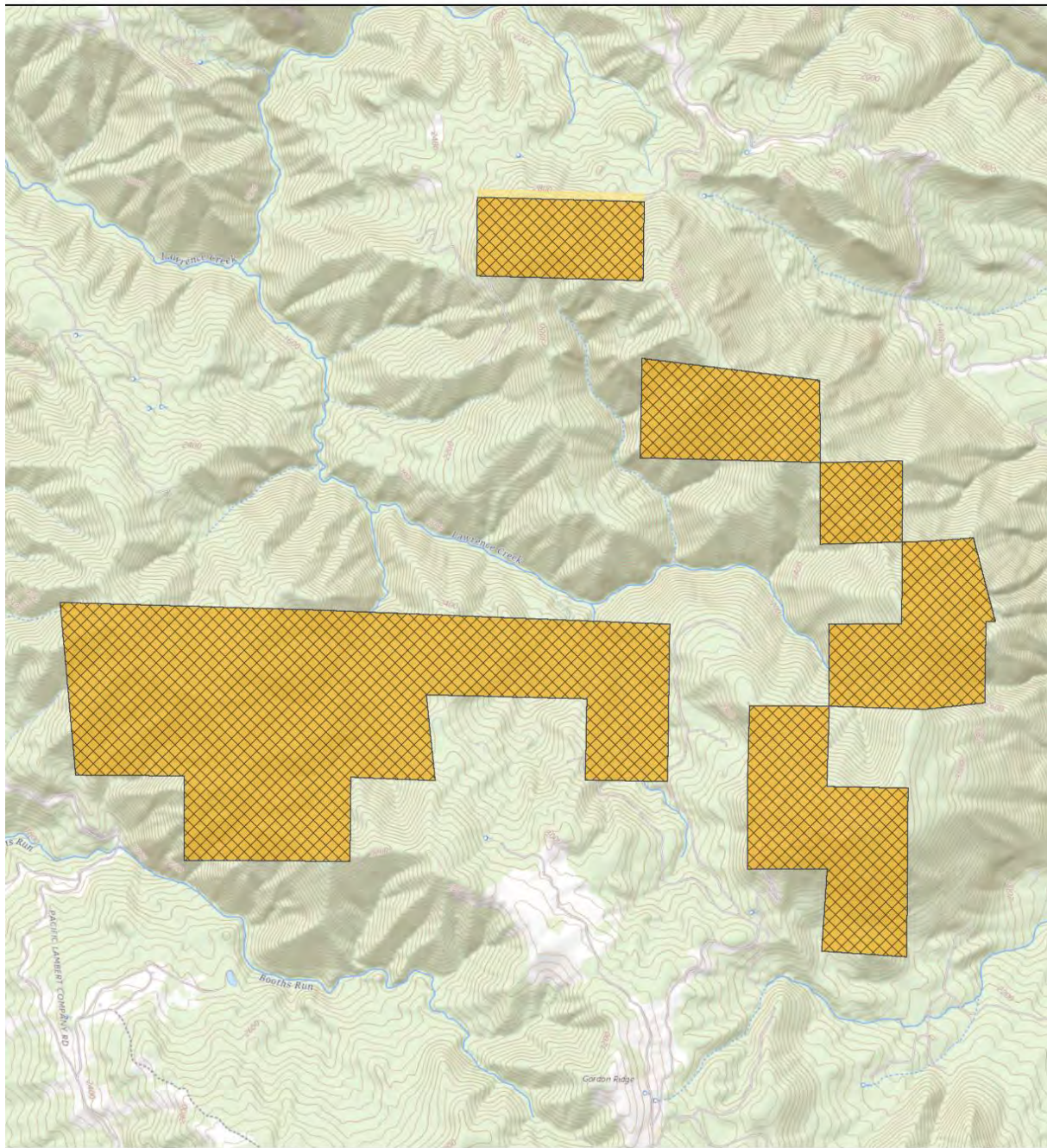
3. Forests with late successional characteristics

Rationale for ACEC – Plant Communities

The laqua Butte ACEC is located between Kneeland and Bridgeville in Humboldt County. laqua Butte ACEC has regionally significant plant communities as well as endangered animal species and critical wildlife habitat.

The existing 1,111-acre laqua Butte ACEC contains important late successional stands that provide a diversity of habitat types including designated critical habitat for the marbled murrelet (*Brachyramphus marmoratus*) and northern spotted owl (*Strix occidentalis caurina*). Designating this area as an ACEC will allow for preservation of stands that are already in the late successional stage.

Figure G-9
Iaqua Buttes ACEC Map (Existing and Alts B and D, Not carried Forward under Alt C)



NCIP ACECs

Iaqua Buttes ACEC

- [- -] Planning Area Boundary
- [X] ACECs (All)
- [Orange] ACECs (Retained)
- [Yellow] BLM Lands (NCIP)



G.3.8 Lacks Creek ACEC

Table G-12
Lacks Creek Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Plant Communities	3	1	Yes	Yes ¹⁻⁵	Yes ^{1-4, 6}	7,479	2,141

1. Marbled Murrelet (*Brachyramphus marmoratus*)
2. Northern Spotted Owl (*Strix occidentalis caurina*)
3. Northern California Steelhead DPS
4. California Coast Chinook salmon ESU
5. California Condor (*Gymnogyps californianus*)
6. Old growth forests

Rationale for ACEC – Plant Communities

The Lacks Creek Management Area (LCMA) is located 15 miles inland from the coast, roughly 25 air miles northeast of Eureka, California, and 3 miles west of the Hoopa Valley Reservation. While much of Lacks Creek was originally designated as LSR in the Northwest Forest Plan, the management area is a heterogeneous landscape consisting mostly of previously heavily logged Douglas fir stands in various stages of recovery from harvest prior to BLM ownership. Additionally, a series of acquisitions have changed the size and shape of the management area over the last 20 years. While the LSR designation for Lacks Creek will be carried forward under all alternatives of the NCIP, the ACEC is proposed to be reduced in size to more accurately reflect the spatial distribution of the existing old growth forest and associated unique ecosystem characteristics.

The existing ACEC in Lacks Creek was defined based on multiple polygons. The original 800-acre Lacks Creek ACEC designated in the 1989 RMP, based on old growth forest characteristics was expanded by 720 acres in the 1995 RMP amendment. The 1995 RMP Amendment also introduced an additional polygon encompassing the entire Lacks Creek watershed, along with stipulations that “Acquired lands within the watershed will be included in the watershed ACEC”.

Under the new NCIP, ‘old growth’ polygons describing the Lacks Creek ACEC will be expanded from 1,520 acres to 2,141 acres, which will constitute the entirety of the ACEC. The previously used ‘Lacks Creek Watershed Boundary’ for the ACEC is not proposed to be brought forward, as the majority of the acres in the 7,479-acre polygon do NOT meet R&I criteria and are, in fact, highly disturbed tan oak and Douglas fir-dominated forest stands that are extremely common across coastal forests formerly managed for timber production. All of Lacks Creek will still be managed as a LSR, with aggressive treatments being planned to reduce sediment impacts to Redwood Creek and accelerate the development of late seral forest characteristics and the associated plant and wildlife habitat values. Additionally, the Lacks Creek ACEC has 11.3 miles of stream identified as eligible in the 2023 WSR Eligibility Report.

The late successional forest characteristics for this ACEC have increased importance because they fall within statewide identified Essential Corridors of High Biological Value. The corridors are areas of natural habitat that are especially important to wildlife and plants for connectivity, ease of migration, and habitat resilience in the era of climate change.

No federally listed threatened or endangered plant species are present within the proposed ACEC, but there are numerous California Rare Ranked species observation records within the LCMA as a whole. Primarily in prairies or forest edges, these vascular and non-vascular species are primarily in prairies or forest edges and can be good indicators of high-quality habitat. Refer to Table 10 below for CA Rare ranked species known to occur within LCMA.

Table G-13
Lists CNRDB Inventory of BLM Sensitive and CNPS Species with Occurrence Records
and/or Suitable Habitat within Lacks Creek Management Area

Scientific Name	Common Name	CNPS Rank
Vascular Species	-	-
<i>Arctostaphylos canescens ssp. Sonomensis</i>	Sonoma manzanita	1B.2
<i>Bensoniella oregana</i>	Bensoniella	1B.1
<i>Epilobium oreganum</i>	Oregon fireweed	1B.2
<i>Erythronium oregonum</i>	Giant fawn lily	2B.2
<i>Eucephalus vialis</i>	Wayside aster	1B.2
<i>Iliamna latibracteata</i>	California globemallow	1B.2
<i>Montia Howellii</i>	Howell's montia	2B.2
<i>Piperia candida</i>	white-flowered rein orchid	1B.2
<i>Sidalcea malviflora ssp. Patula</i>	Siskiyou checkerbloom	1B.2
<i>Sidalcea oregana ssp. Eximia</i>	Coast checkerbloom	1B.2
<i>Thermopsis robusta</i>	Robust false lupin	1B.2
Non-vascular Species	-	-
<i>Lobaria oregana</i>	Oregon lungwort	N/A
<i>Ptilidium californicum</i>	Pacific fuzzwort	N/A

Recently California condors have been sighted at Lacks Creek ACEC. It is unknown whether or not suitable nesting habitat exists in the Lacks Creek ACEC. The proposed ACEC includes Lacks Creek, which provides excellent spawning and rearing habitat for threatened Chinook salmon and steelhead.

Figure G-10
Lacks Creek ACEC Map (Existing)

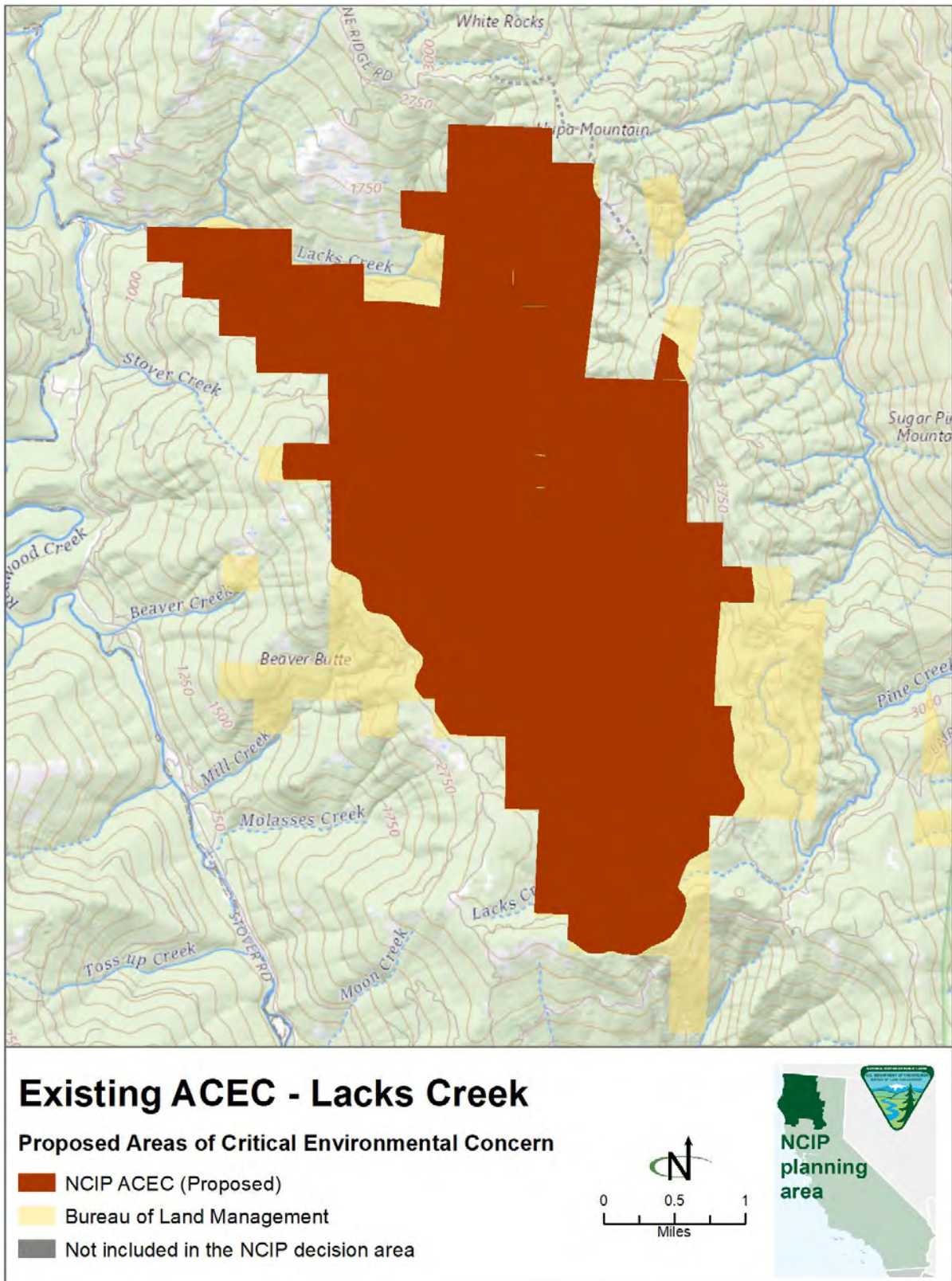
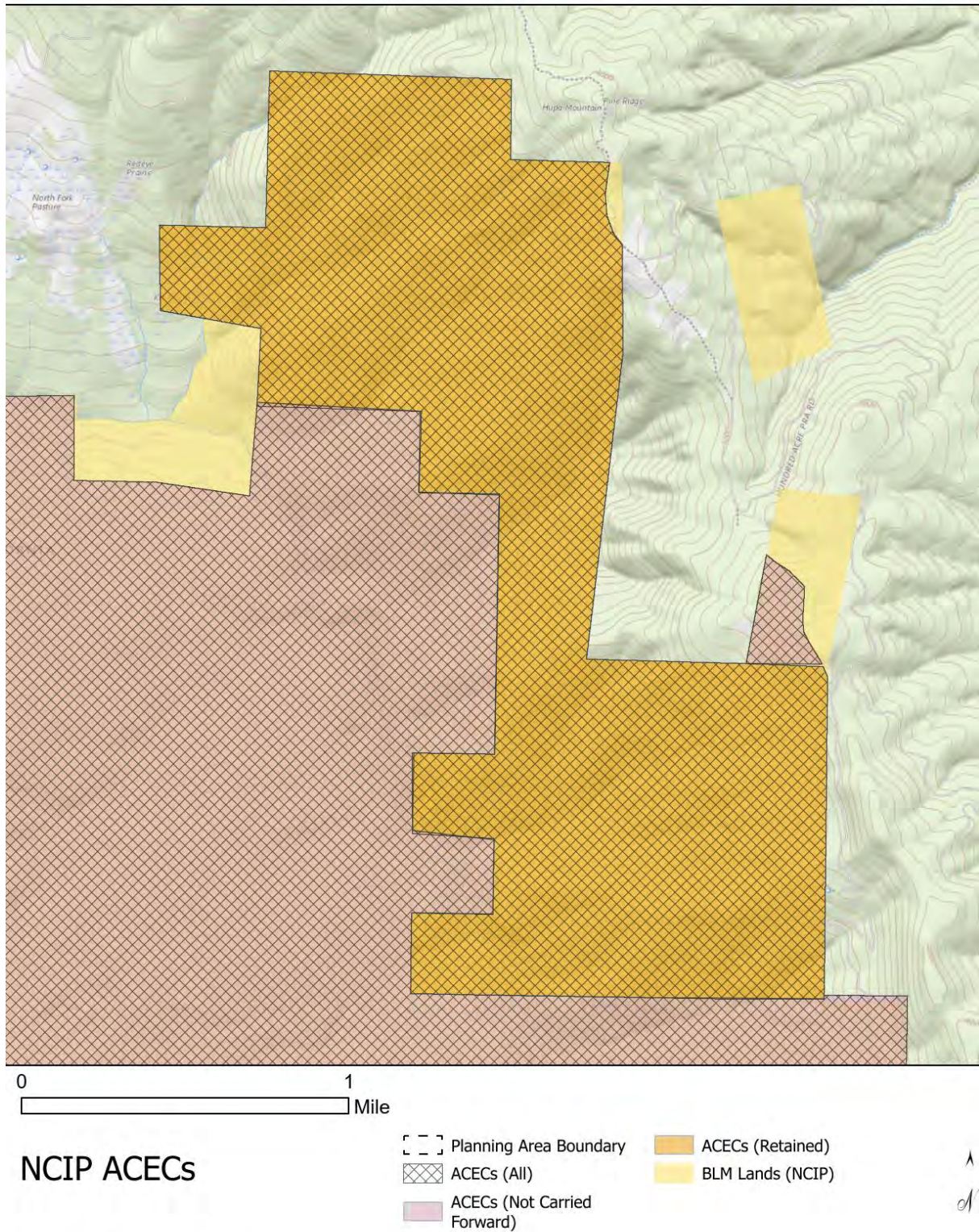


Figure G-11
Lacks Creek ACEC Map (Carried forward under Alts B, C and D)



G.3.9 Ma-le'I Dunes ACEC

Table G-14
Ma-le'I Dunes Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Plant Communities	3	1	No	Yes ¹⁻³	Yes	149	180 ⁴
	Cultural	1	2					

1. Western snowy plover (*Charadrius nivosus nivosus*) listed as Threatened under ESA

2. Beach layia (*Layia carnosa*) recently downlisted to Threatened under ESA

3. Menzie's wallflower (*Erysimum menziesii*) listed as Endangered under ESA

4. The best available GIS data was used to calculate acres and create the Ma-le'I ACEC Map however, South Spit ACEC is on a shoreline, which tends to change. There may be small variations between this data and current conditions.

Rationale for ACEC – Plant Communities and Cultural and Historic

The Ma-le'I Dunes ACEC, previously known as the Manila Dunes ACEC, is located on the narrow stretch of land between the Mad River Slough and the Pacific Ocean along North Ma-le'I Dunes Road in Arcata, California. Ma-le'I Dunes ACEC contains regionally significant plant communities and cultural resources.

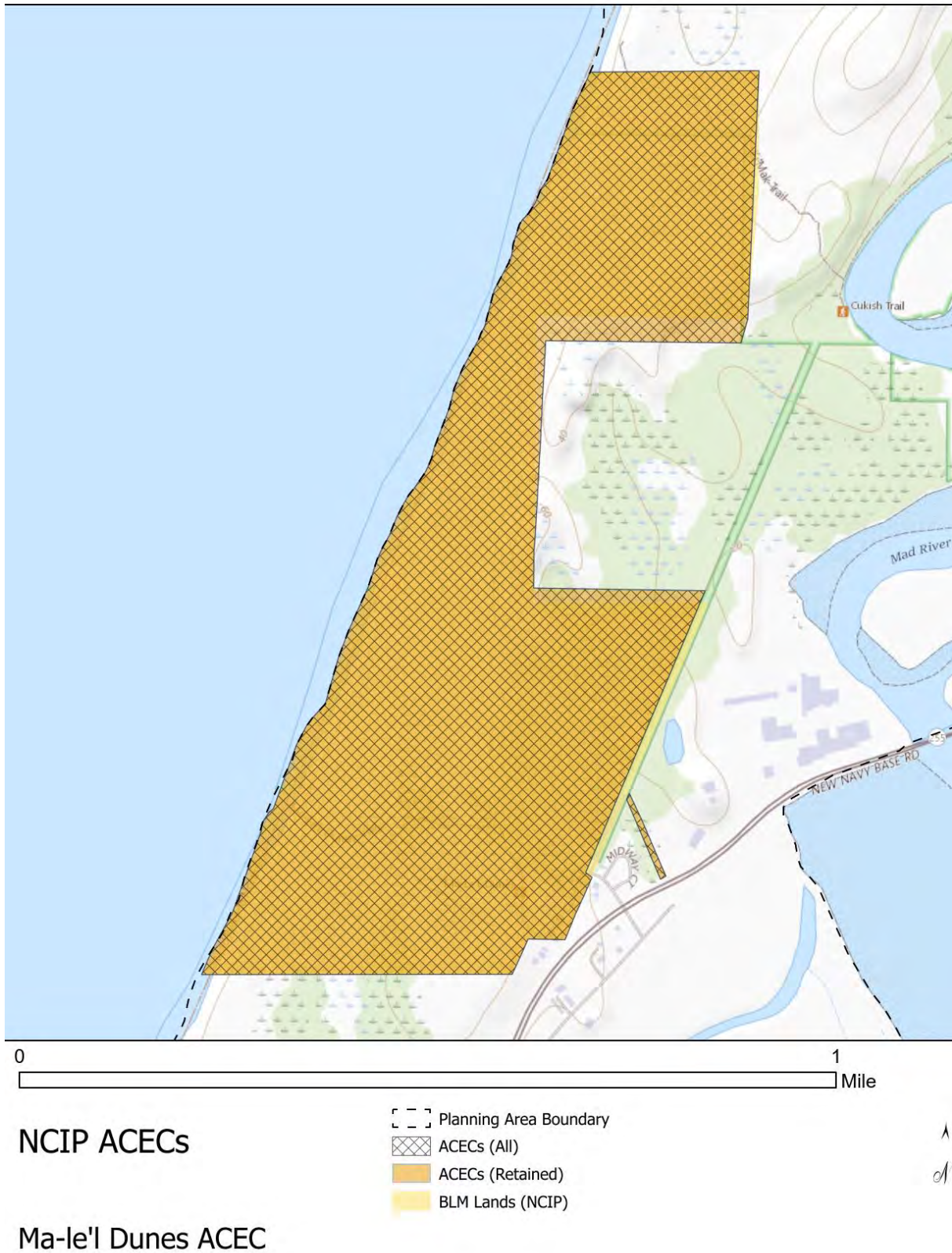
The existing Ma-le'I Dunes ACEC (currently 150 acres, proposed to expand to 180 acres) contains important botanical values and wetland habitat areas. The area contains active and stabilized sand dunes, wetlands, and a robust native plant community which supports the two federally listed threatened plant species: beach layia and menzie's wallflower. Additionally, the beach provides nesting habitat for western snowy plovers. The area is also culturally significant to the Wiyot people and contains sensitive cultural resources. This area is only a few miles from Arcata and Eureka and will continue to provide an outstanding opportunity for environmental education that is utilized by Cal Poly Humboldt, primary schools and non-profit organizations that lead naturalist trainings annually.

Passive recreation opportunities will be protected and enhanced on Ma-le'I Dunes by providing access to designated coastal trails for equestrian and pedestrian use. OHV use is prohibited within the protected Ma-le'I Dunes portion of the Samoa Peninsula. Although fenced enclosures are utilized on the southern end of the Samoa Peninsula, no fencing is installed in Ma-le'I Dunes as a result of restricted access for OHVs. Additional attention is needed to protect this habitat and balance its protection.

Figure G-12
Manila Dunes ACEC Map (Existing)



Figure G-13
Ma-le'l Dunes Proposed ACEC Map (Carried forward under Alts B, C and D)



G.3.10 Sacramento Island ACEC

Table G-15
Sacramento Island Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Plant	3	1	No	Yes ¹⁻⁶	Yes ^{2, 5}	91	91
	Communities							
	Wildlife	2	2					

1. The bald eagle is listed as endangered under the CESA.
2. The chinook salmon – Central Valley spring-run ESU is listed as threatened under the CESA and threatened under the ESA.
3. The tricolored blackbird is listed as threatened under the CESA.
4. The bank swallow is listed as threatened under the CESA.
5. The steelhead – Central Valley DPS is listed as threatened under the ESA.
6. The green sturgeon – southern DPS is listed as threatened under the ESA.

Rationale for ACEC – Plant Communities and Wildlife

Sacramento Island (not an “island” per se except during flood events) is located near Knighton Road in Shasta County along the Sacramento River. The location of this increasingly important habitat near a large population center necessitates special management attention and warrants management as an ACEC. Sacramento Island ACEC contains important plant communities as well as six threatened or endangered species.

The existing 91-acre Sacramento Island ACEC meets multiple R&I criteria, including plant communities and the presence of threatened/endangered animal species.

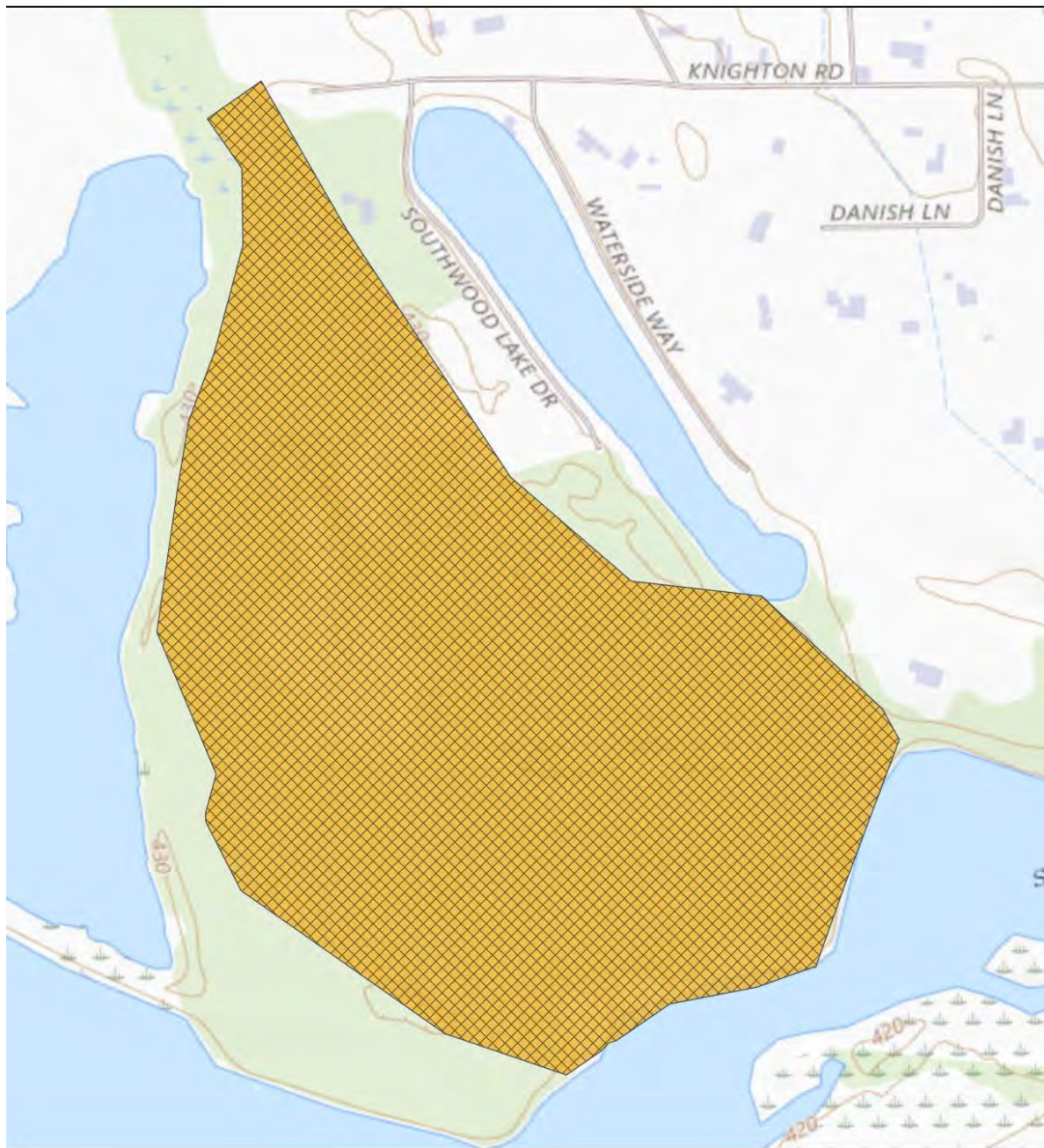
The Sacramento Island ACEC was designated in the 1993 Redding RMP to protect the largest unaltered fragment of native Great Valley–Valley Oak riparian forest within Shasta County. This habitat type is extremely rare today due to a century of landscape conversion and anthropogenic disturbance, and its conservation as an ACEC is critical for the unique ecological value and function it provides for the flora and fauna that utilize it.

The ACEC is also home to six threatened or endangered wildlife species: the bald eagle, chinook salmon, tricolored blackbird, bank swallow, steelhead, and green sturgeon. It is also potential habitat for the CESA Endangered yellow-billed Cuckoo and the ESA Threatened western yellow-billed Cuckoo. There are elderberry bushes on the site and therefore there is habitat for the Federally Threatened valley elderberry longhorn beetle. This habitat type has very high bird species diversity and richness. Many state and federal sensitive species and species of special concern also use this site.

While the Great Valley Oak Riparian forest type is extremely unique and provides a host of benefits to diverse native species, the habitat at this ACEC is currently being degraded by the encroachment of non-native, invasive species such as Tree of heaven and Himalayan blackberry. Additionally, a small portion of the ACEC is a remnant network of gravel roads with minimal native vegetation. Restoration on site would further improve existing habitat and may include activities such as invasive species removal and seeding of native species.

The ACEC is bordered by Interstate 5, residential/agricultural land, and a sand and gravel plant; degraded land adjacent to these impacts allows for testing of effectiveness of restoration techniques, which contributes to future adaptive management.

Figure G-14
Sacramento Island ACEC Map (Existing and Alts B and D, Not carried forward under Alt C)



NCIP ACECs

Sacramento Island ACEC

- [- -] Planning Area Boundary
- [X X] ACECs (All)
- [Solid Yellow] ACECs (Retained)
- [Solid Light Yellow] BLM Lands (NCIP)



G.3.11 Sacramento River Bend ACEC

Table G-16
Sacramento River Bend Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Cultural and Historic	1	1	Yes	Yes ¹⁻¹¹	Yes ¹²	18,596	Alt B – 20,418;
	Wildlife	2	1					Alt C –
	Plant Communities	3	1					18,596

1. The bald eagle is listed as endangered under the CESA.
2. The Boggs Lake hedge-hyssop is listed as endangered under the CESA.
3. Slender Orcutt grass is listed as endangered under the CESA and threatened under the ESA.
4. The Chinook salmon – Sacramento River winter-run ESU is listed as endangered under the CESA and ESA.
5. The Chinook salmon – Central Valley Spring-Run ESU is listed as threatened under the CESA and ESA.
6. Least Bell's vireo is listed as endangered under the CESA and threatened under the ESA.
7. The steelhead – Central Valley DPS is listed as threatened under the ESA.
8. The valley elderberry longhorn beetle is listed as threatened under the ESA.
9. The vernal pool fairy shrimp is listed as threatened under the ESA.
10. The green sturgeon – southern DPS is listed as threatened under the ESA.
11. The vernal pool tadpole shrimp is listed as endangered under the ESA.
12. Slender Orcutt grass; Vernal pool tadpole shrimp; Winter-run and Spring-run Chinook salmon, steelhead

Rationale for ACEC – Cultural and Historic, Wildlife, and Plant Communities

The Sacramento River Bend ACEC is bordered by Highway 36 to the east and the Sacramento River to the west, just north of the town of Red Bluff, in Tehama County, California. The Sacramento River Bend ACEC contains regionally significant cultural and archaeological values, wildlife, and plant communities and has 42.1 miles of stream identified as eligible in the 2023 WSR Eligibility Report.

The existing Sacramento Bend ACEC (currently 18,596 acres, proposed to expand to 20,418 acres (under the Proposed Alternative D) meets multiple R&I values. The Bend is the last publicly held, contiguous riparian system of any size on the Sacramento River between Sacramento and Shasta Dam. The area's unique resources include rare habitats, plants, wildlife, and cultural resources. Vernal pools support the Federally Threatened slender Orcutt grass, as well as many vernal pool endemic plants with a California Rare Plant Rank (CRPR). The area is also within the range of several federally-listed invertebrates including the vernal pool tadpole shrimp and the vernal pool fairy shrimp. The habitat protected by the Sacramento River Bend ACEC includes federally designated critical habitat for vernal pool obligate species and is vital for the continued existence of these and other riparian, wetland, and vernal pool associated species.

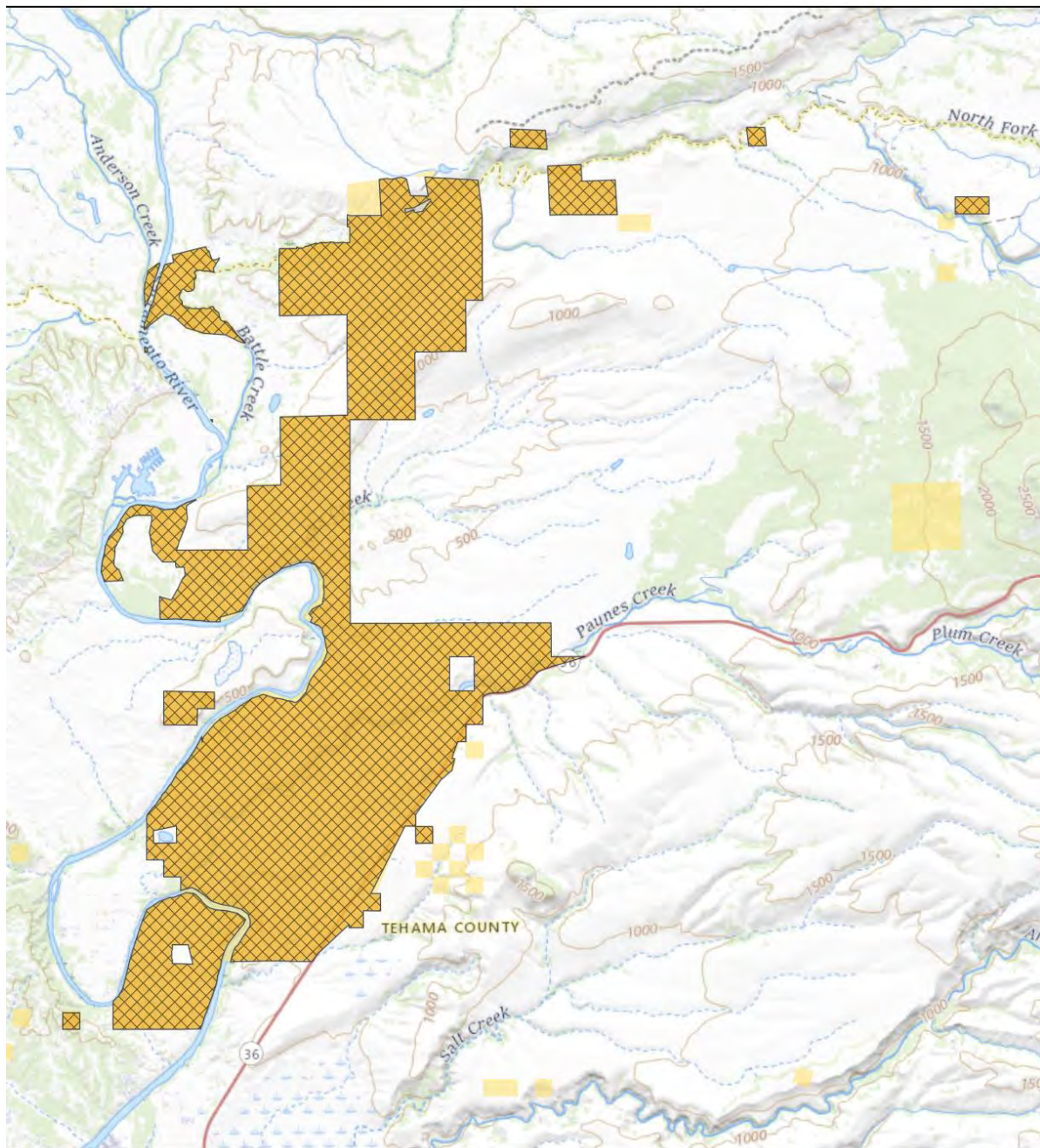
Nesting bald eagles and deer winter range habitat are found in this ACEC, and the 100 acres of managed wetlands are regionally significant, as they support a high diversity of waterfowl, shorebirds, and other wetland associated species. These include several CESA listed species, such as the foothill yellow-legged frog. Additionally, this area provides foraging and nesting habitat for migratory birds, including burrowing owls and tricolored blackbirds, both of which have experienced a population decline largely due to habitat loss. The sections of the Sacramento River and tributaries within this ACEC are important spawning habitat for multiple special-status anadromous fish and aquatic wildlife species, including Federally

endangered Chinook salmon. By providing refuge and resources for diverse taxa, this ACEC also holds significant recreational value, as it offers unique wildlife viewing opportunities.

The values for this ACEC have increased importance because they fall within statewide identified Essential Corridors of High Biological Value. The corridors are areas of natural habitat that are especially important to wildlife and plants for connectivity, ease of migration, and habitat resilience in the era of climate change. Some of the best examples of extensive Blue Oak Woodland in California are found in this ACEC.

In addition to natural values, the ACEC includes numerous rare, fragile, and irreplaceable cultural resources of high scientific value and importance to local Tribes. Passing through the ACEC are remnants of the historic Blue Ridge Flume, an historic transport system for lumber from the mountains to the Valley. Portions of the ACEC also include parts of a Mexican land grant and remnants of settler occupation and use. The historic Red Bluff Wagon Road and early sheepherder facilities are common and sensitive to disturbances from cattle, visitors, and deterioration through time. Periodic looting and damage to cultural resources from recreation activities have been long-standing problems and require ongoing management.

Figure G-15
Sacramento River Bend ACEC Map (Existing and Alts C and D)



0 1
 Mile

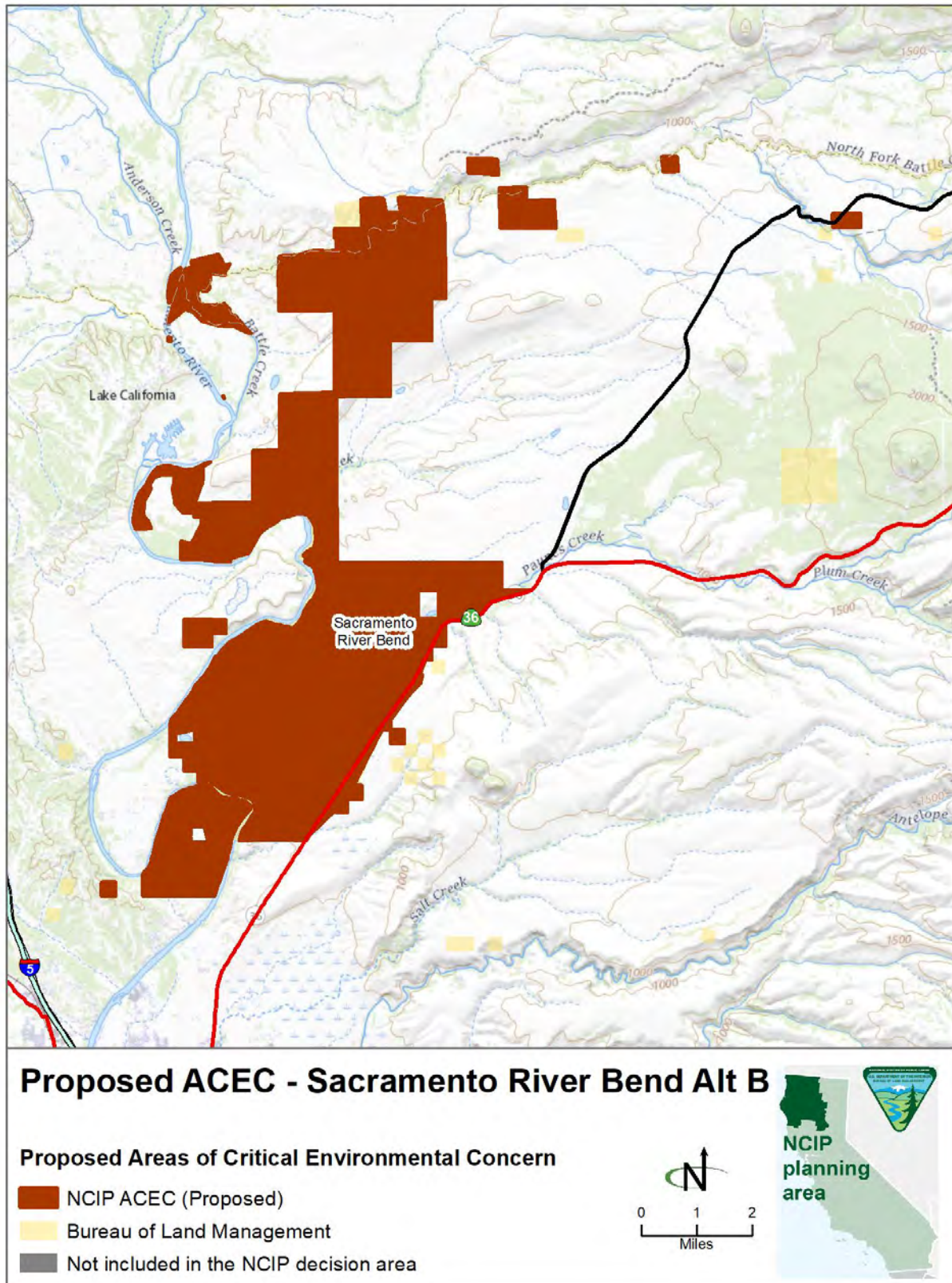
NCIP ACECs

- [- -] Planning Area Boundary
- [X X] ACECs (All)
- [Solid Brown] ACECs (Retained)
- [Yellow] BLM Lands (NCIP)



Sacramento River Bend ACEC

Figure G-16
Sacramento River Bend ACEC Proposed Alt B



G.3.12 Shasta and Klamath River Canyon ACEC

Table G-17
Shasta and Klamath River Canyon Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Cultural and Historic Fisheries	1 2	1 1	No	Yes ¹	Yes ²	1,215	1,270

1. Shasta River supports Southern Oregon/Northern California Coast (SONCC) coho salmon that are listed as threatened under the ESA.

2. Shasta River is critical habitat for SONCC coho salmon.

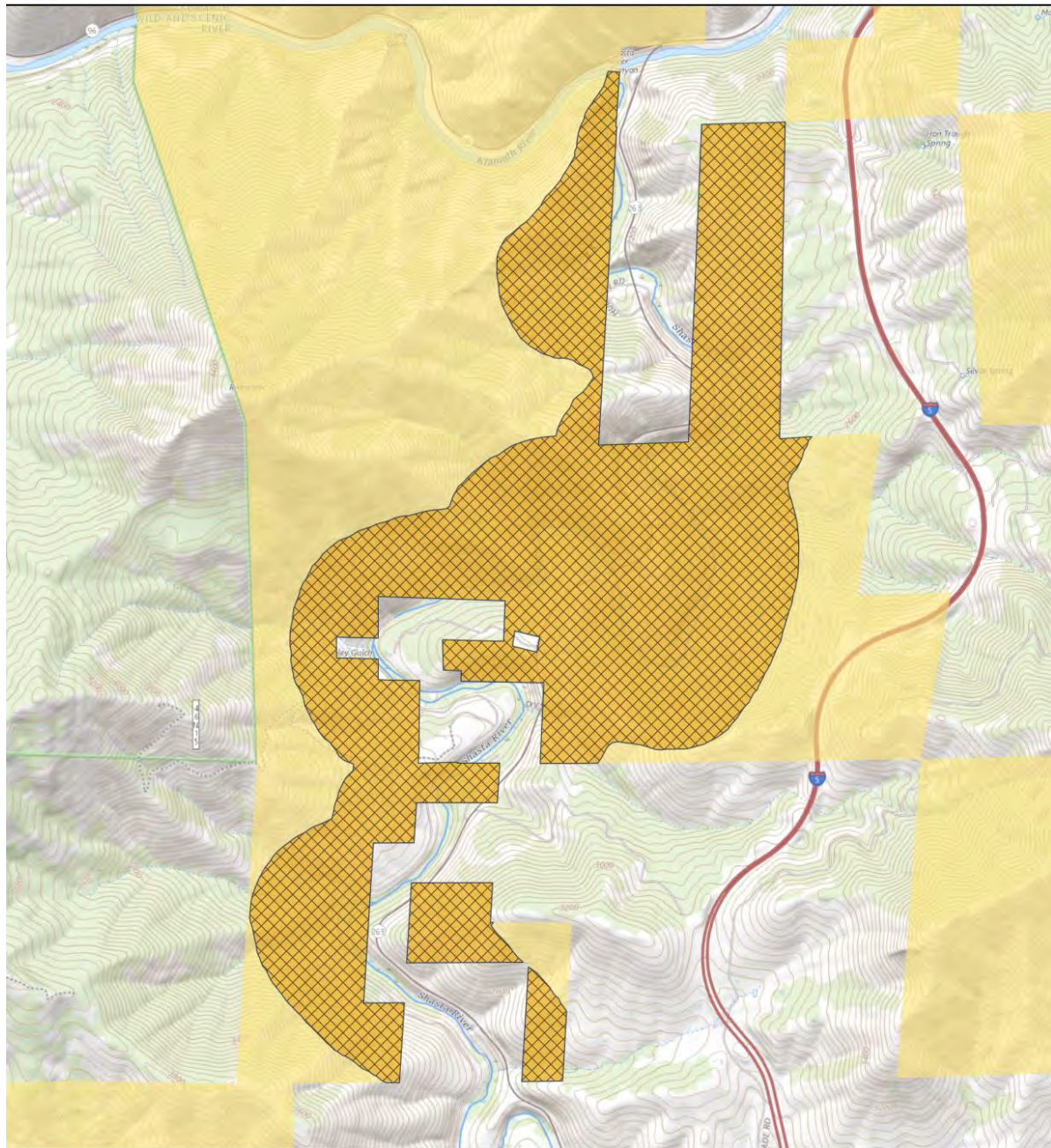
Rationale for ACEC – Cultural and Historic, and Fisheries

The Shasta and Klamath River Canyon ACEC is located along the Shasta River beginning at the confluence of the Shasta and Klamath in the north and stretching about 3 miles to the south; it is in the town of Yreka in Siskiyou County, California. Shasta and Klamath River Canyon ACEC has regionally significant cultural and fisheries values. Additionally, the ACEC has 3.4 miles of stream identified as eligible in the 2023 WSR Eligibility Report.

The existing Shasta and Klamath River Canyon ACEC (currently 1,215 acres, proposed increase to 1,270 acres) meets multiple R&I values, including riparian and salmonid values, and cultural and historic resources.

The ACEC was established to protect critical spawning and rearing habitat on the Shasta River for Chinook and Southern Oregon/Northern California Coast (SONCC) coho salmon within the Klamath Basin. In addition, the ACEC contains significant cultural resources important to local Tribes and the history of early settlement and gold mining in the region. Gold mining archaeological resources include both placer and lode operation remnants. The canyon was also an early historic transportation route with important road and bridge features. The 1931 Pioneer Bridge over the Shasta River was built in 1931 and is considered eligible for listing on the National Register of Historic Places (NRHP). OHV, grazing, looting, and erosion are ongoing detrimental actions damaging the historic values and necessitate special management.

Figure G-17
Shasta and Klamath Rivers Canyon ACEC Map (Existing and proposed Alts B and D, Not carried Forward under Alt C)



NCIP ACECs

- [- -] Planning Area Boundary
- [X] ACECs (All)
- [Orange] ACECs (Retained)
- [Yellow] BLM Lands (NCIP)

Shasta and Klamath Rivers Canyon ACEC

G.3.13 Grass Valley Creek ACEC

Table G-18
Grass Valley Creek Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Fisheries	2	1	No	Yes ¹	Yes ¹	N/A	Alternative D –
	Soils	4	3					19,560.
	Wildlife	2	1					Alt C –
	Plant Communities	3	1					13,068

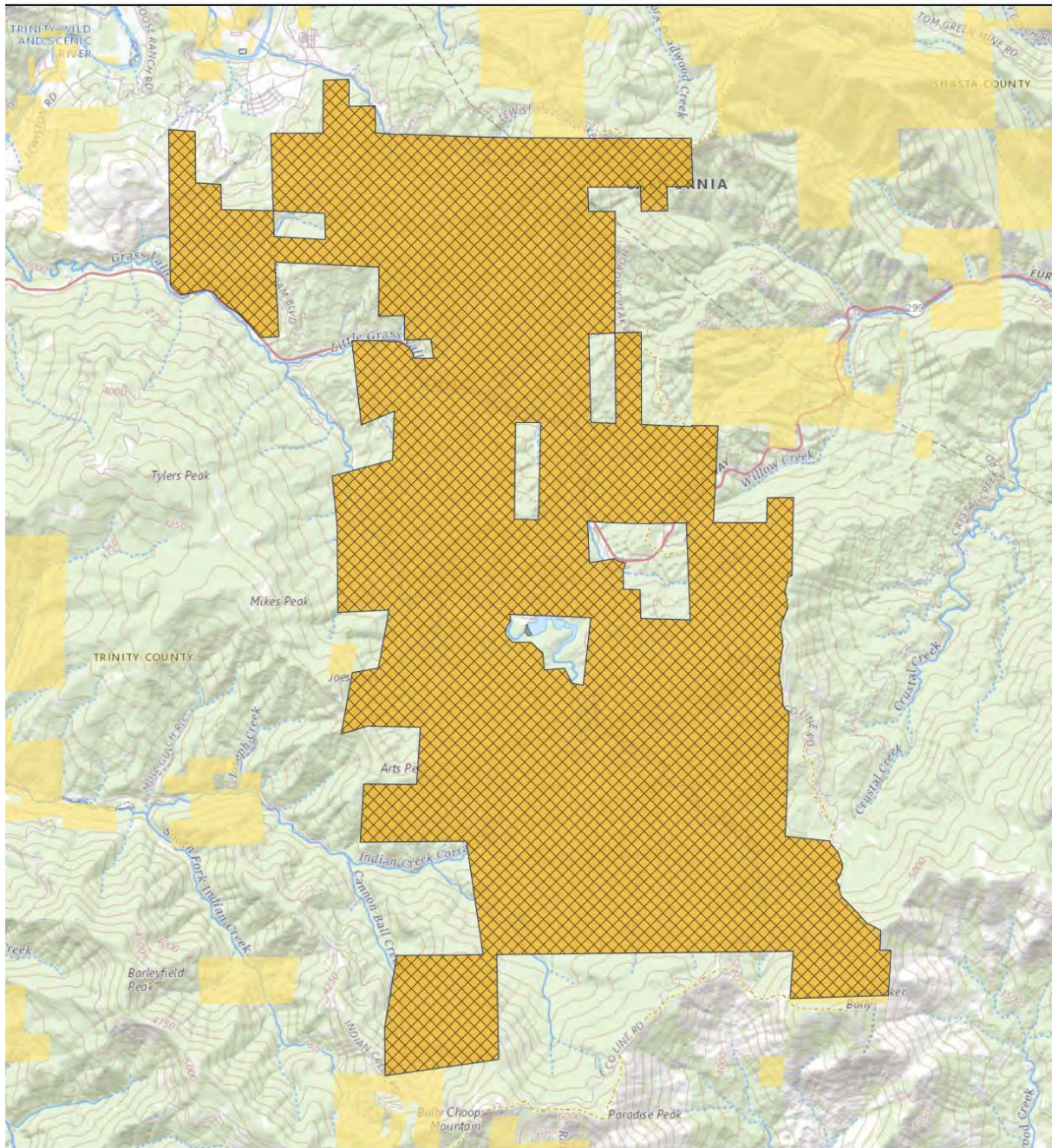
1. Northern Spotted Owl (*Strix occidentalis caurina*)

Rationale for ACEC – Fisheries, Soils, Wildlife, and Plant Communities

The Grass Valley Creek ACEC is located south and east of the town of Lewiston in Trinity County, California. The ACEC is proposed to include land both north and south of Highway 299 which includes portions of Grass Valley Creek and several tributaries. Grass Valley Creek ACEC has significant fisheries and soils values. Additionally, the ACEC has 1.7 miles of stream identified as eligible in the 2023 WSR Eligibility Report.

The proposed Alternative B Grass Valley Creek ACEC meets multiple R&I criteria. Grass Valley Creek hosts a unique natural system consisting of rare and sensitive geological and lithological features that can host rare and endemic plant species. The area is characterized by its highly erosive granitic soils. Intact or restored ecosystems such as Grass Valley Creek generally have high climate resilience and have a greater capacity to support species adaptation to climate change. This adaptation is a crucial natural process that can help maintain species diversity in the face of future conditions, as climate change continues to impact ecosystems. Between its high-water availability compared to other areas and the presence of rare geophysical types, Grass Valley is a significant fish and wildlife resource, providing habitat for Threatened and Endangered and BLM sensitive wildlife species. The area contains a significant acreage of federally designated critical habitat for the Northern Spotted Owl, and breeding pairs have been documented in the area. A local elk herd makes extensive use of the area, particularly during calving season. The regional (i.e., more than local) significance and exemplary nature of these values as compared to other places in the West and within BLM's jurisdiction justify the creation of this ACEC. Finally, Grass Valley Creek is vulnerable to adverse change related to the threat of future water withdrawals and the presence of a potential natural hazard associated with its sensitive soils and high risk of soil erosion.

Figure G-18
Grass Valley Creek ACEC Map (Alts B and D)



0 1
Mile

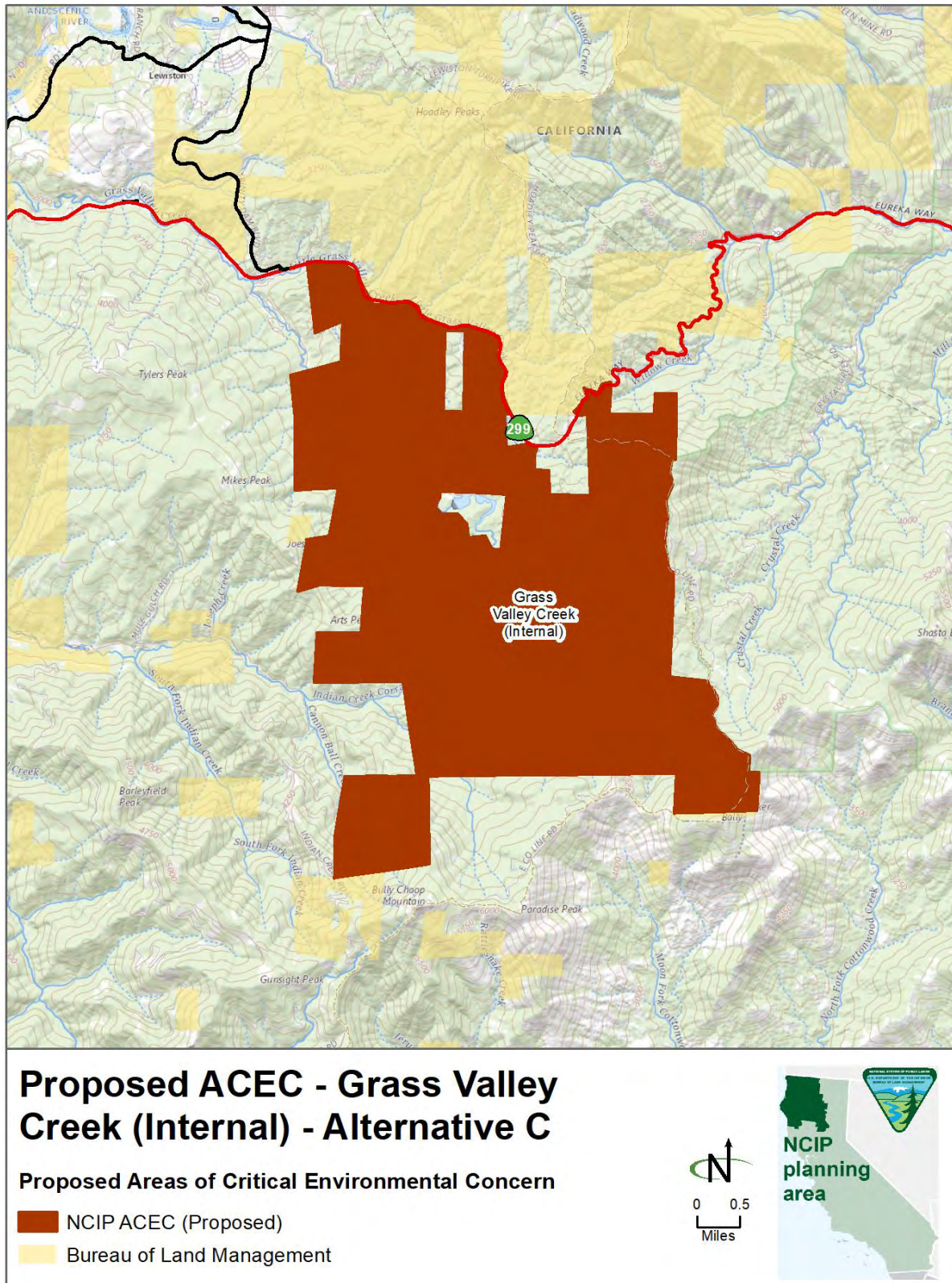
NCIP ACECs

Grass Valley Creek ACEC

- [- -] Planning Area Boundary
- [X X] ACECs (All)
- [Orange] ACECs (Retained)
- [Yellow] BLM Lands (NCIP)



Figure G-19
Grass Valley Creek ACEC Map (Alt C)



G.3.14 Swasey Drive ACEC

Table G-19
Swasey Drive Summary of ACEC Findings

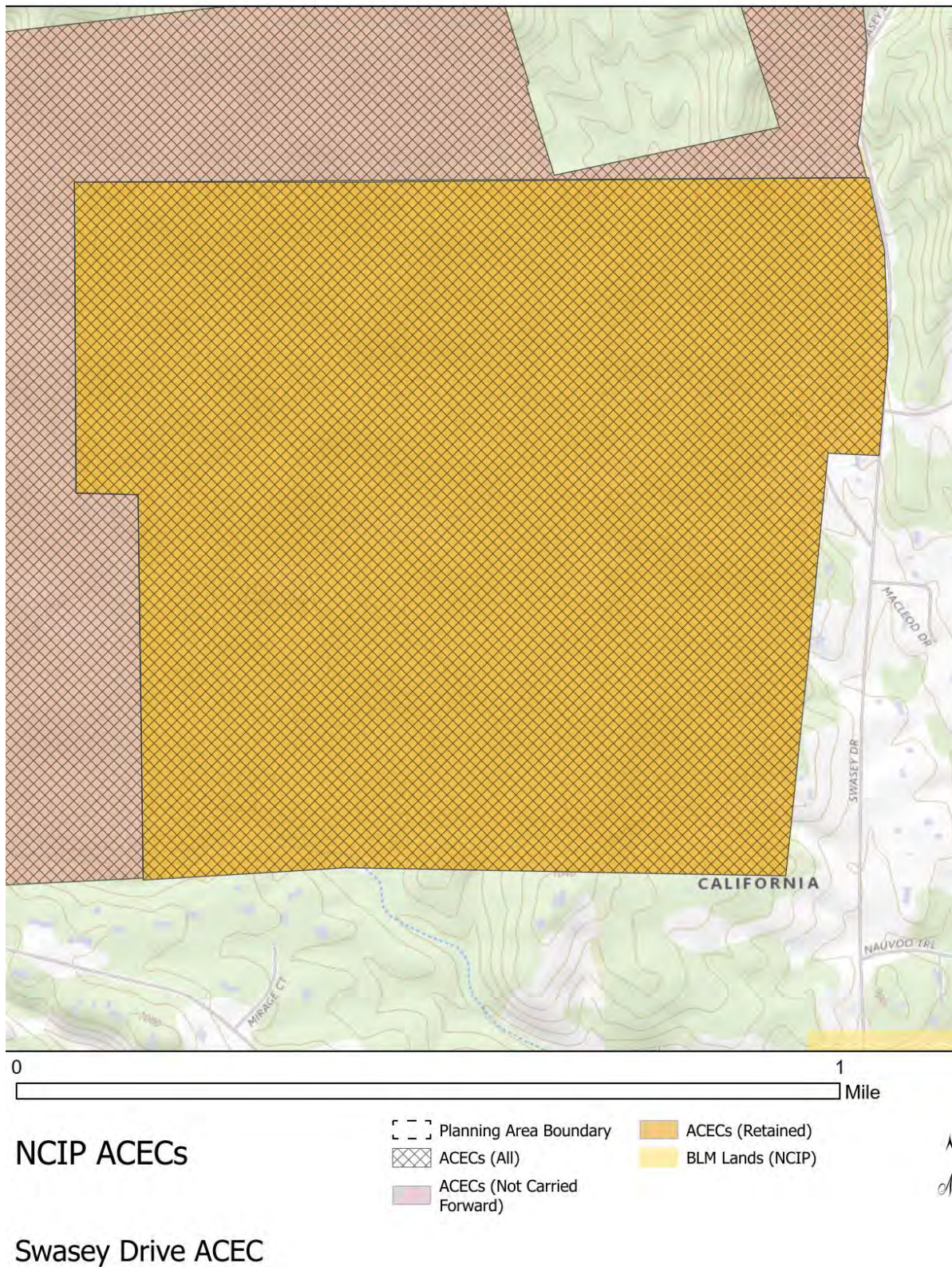
Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Cultural and Historic	I	I	Yes	N/A	N/A	468	468

Rationale for ACEC – Cultural and Historic

The Swasey Drive ACEC is located in western Redding in Shasta County, California. The ACEC is west of Swasey Drive and is comprised of a contiguous block of land roughly centered on Delano Drive. The existing 468-acre Swasey Drive ACEC has regionally significant cultural and historic R&I values as it contains important Native American cultural and archaeological areas that comprise an NRHP district setting uncommon in public stewardship, as well as numerous historic archaeological sites. The latter includes important historic sites such as a segment of the regionally significant Clear Creek Ditch, which is over 40 miles long and was constructed in the 1850s.

The proximity of this ACEC to a large population center has resulted in ongoing damage to these irreplaceable values. The primary goal of an ACEC designation is to conserve and interpret the cultural and historic resources on public lands. Special management attention is required and continued designation as an ACEC is warranted.

Figure G-20
Swasey Drive ACEC Map (Existing and Alts C and D, Not Carried Forward Under Alt B)



G.3.15 Upper and Lower Clear Creek ACEC

Table G-20
Upper and Lower Clear Creek Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Fisheries	1	1	Partial	Yes ¹⁻³	Yes ²⁻³	N/A	4,558
	Scenic	2	1					

1. The tricolored blackbird is listed as threatened under the CESA.

2. The steelhead – Central Valley DPS is listed as threatened under the ESA.

3. The chinook salmon – Central Valley spring-run ESU is listed as threatened under the ESA.

Rationale for ACEC – Fisheries and Scenic

The Upper and Lower Clear Creek ACEC is in western Redding, Shasta County, California. Lower Clear Creek includes BLM lands primarily along Clear Creek Road slightly west of where the road intersects with Hwy 273 and along Cloverdale Road. Upper Clear Creek includes land along Mule Town Road up to the southern boundary of Whiskeytown National Recreation Area. Upper and Lower Clear Creek ACEC has regionally significant fisheries, scenic values.

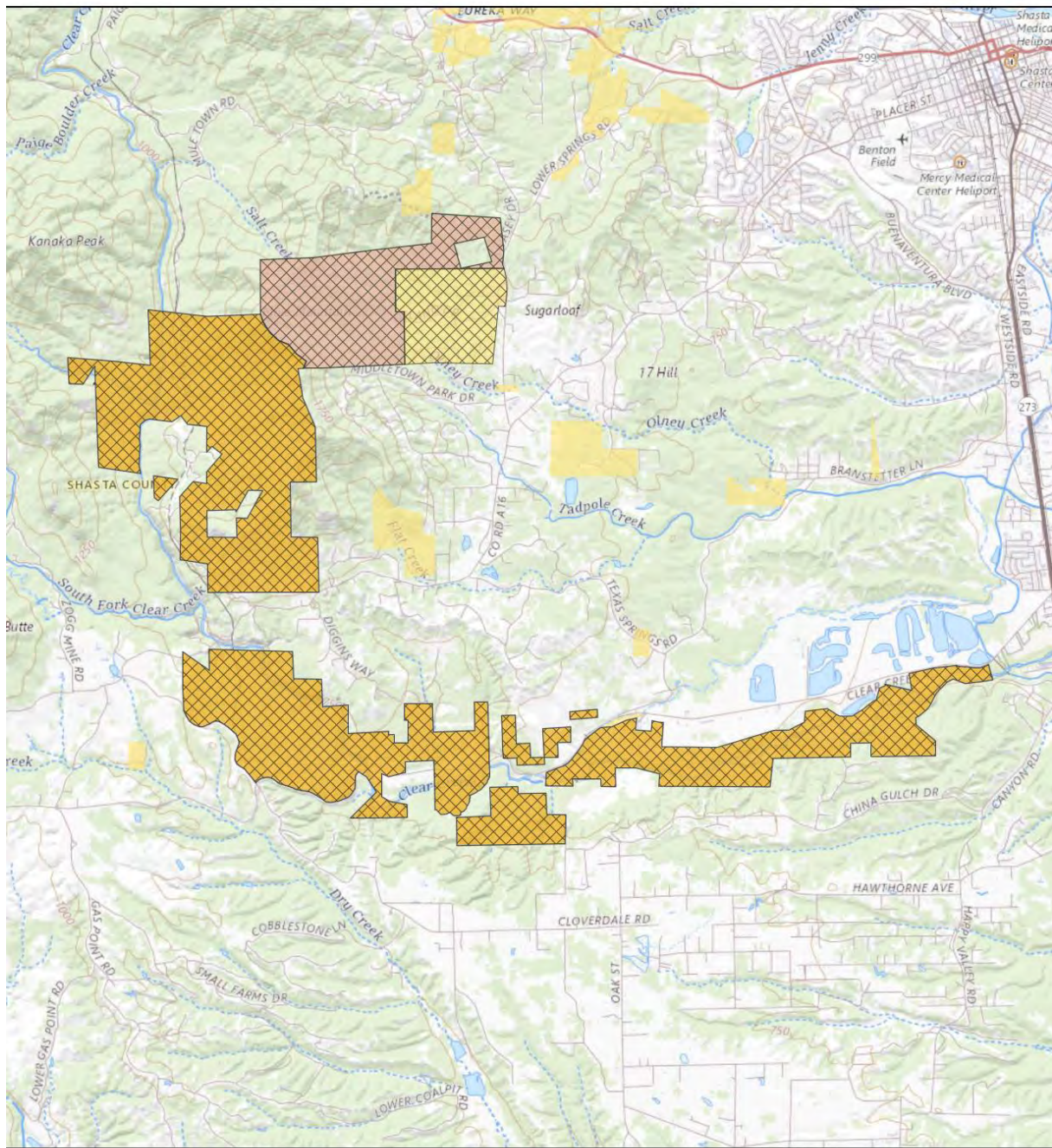
Upper and Lower Clear Creek ACEC and Swasey Drive Clear Creek Greenway ACEC proposals cover most of the same areas except for the Swasey Drive Clear Creek Greenway ACEC includes the Swasey Drive ACEC and portions of Mule Mountain. Upper and Lower Clear Creek ACEC and Swasey Drive Clear Creek Greenway ACEC have fisheries as their primary relevance value.

The proposed 4,558-acre Upper and Lower Clear Creek ACEC meets multiple R&I values. BLM would continue to improve lower Clear Creek anadromous salmonid habitat and the scenic values of Clear Creek canyon (above Clear Creek Road). The ACEC has 9.4 miles of stream identified as eligible in the 2023 WSR Eligibility Report.

The Clear Creek watershed below Whiskeytown Dam includes 50 square miles with 18 miles of mainstem stream. Whiskeytown Dam is the limit of the anadromy of the Clear Creek fishery. As a result of more than 3 decades of interagency cooperation involving 20 partner agencies and organizations, the creek supports annual returns of ESA-listed spring run Chinook salmon that are several orders of magnitude larger than they were as recently as 1999, prior to implementation of several extensive, multi-year restoration efforts. The creek supports a robust steelhead fishery that has rebounded similarly. Clear Creek has the potential to produce up to 7.5% of the entire Sacramento River Chinook fishery. Due to its significant fisheries restoration related activities and its location relative to a densely populated urban center, the creek offers a unique combination of outstanding recreational, ecological, and educational resources available perhaps nowhere else in the region.

Most of the lower portion of Clear Creek is managed by Whiskeytown-Shasta-National Recreation Area and the BLM. This lower stretch has been the focus of BLM land acquisitions to conserve and restore this critical fishery and provide recreational opportunities. As a result of these efforts, public access exists from Whiskeytown Dam to the Sacramento River.

Figure G-21
Upper and Lower Clear Creek ACEC Map (Only Carried forward Under Alt D)



NCIP ACECs

- [- -] Planning Area Boundary
- [X X] ACECs (All)
- [P P] ACECs (Not Carried Forward)

- [O] ACECs (Retained)
- [Y] BLM Lands (NCIP)

Upper and Lower Clear Creek ACEC

G.3.16 Swasey Drive Clear Creek Greenway ACEC

Table G-21
Swasey Drive Clear Creek Greenway Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Cultural and Historic	1	1	Partially	Yes ¹⁻⁴	Yes ³⁻⁴	468 (Swasey Drive ACEC)	5,964
	Fisheries	2	1					
	Scenic	2						

1. The foothill yellow-legged frog is listed as endangered under the CESA.
2. The tricolored blackbird is listed as threatened under the CESA.
3. The chinook salmon – Central Valley spring-run ESU is listed as threatened under the CESA and the ESA.
4. The steelhead – Central Valley DPS is listed as threatened under the ESA.

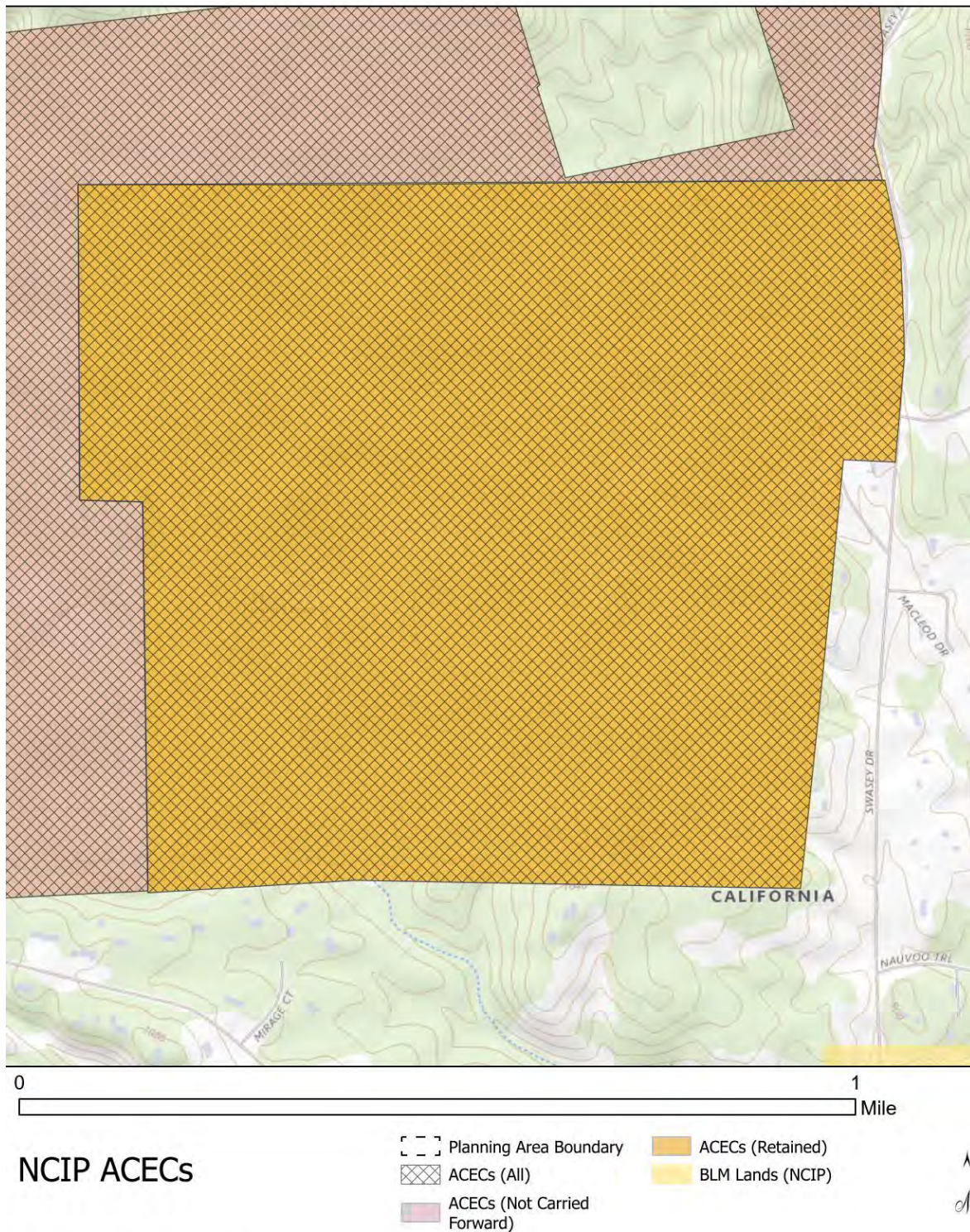
Rationale for ACEC – Cultural and Historic, Fisheries, and Scenic

The Swasey Drive Clear Creek Greenway ACEC is located in western Redding, Shasta County, California. Lower Clear Creek includes BLM lands primarily along Clear Creek Road slightly west of where the road intersects with Hwy 273 and along Cloverdale Road. Upper Clear Creek includes land along Mule Town Road up to the southern boundary of Whiskeytown National Recreation Area. Upper and Lower Clear Creek ACEC has regionally significant cultural and historic, fisheries, and scenic values. As described in the Upper and Lower Clear Creek ACEC, the Swasey Drive Clear Creek Greenway ACEC has 9.4 miles of stream identified as eligible in the 2023 WSR Eligibility Report.

The proposed 5,964-acre Swasey Drive Clear Creek Greenway ACEC meets multiple R&I criteria. The Swasey Drive Clear Creek Greenway hosts a unique natural system consisting of rare and sensitive geophysical and ecological features that support diverse plant communities, including rare and endemic plant species. Its high climate resilience further serves to facilitate natural processes, namely species adaptation to changing climate. The area supports a significant fish and wildlife resource, in that it provides habitat for rare, threatened, and sensitive species. The proposed ACEC is vulnerable to adverse change related to the threat of mineral resource development potential and future water withdrawals, as well as the presence of a potential natural hazard due to its sensitive soils that are highly subject to erosion. This ACEC falls within the ancestral homeland of the Wintu people, to whom it has long been, and remains, a culturally significant place. Sensitive and irreplaceable remnants of historic gold mining are prevalent in the area including locations related to the historic communities of Horsetown, Muletown, and Briggsville. Furthermore, an NRHP district composed of irreplaceable historic, cultural, and archaeological values that have been damaged by looting, mining, erosion, and fire, and requires continued special management.

The Clear Creek stream ends at the southern edge of the City of Redding and provides one of two (Sacramento River to Shasta Dam being the other) prime opportunities to develop a greenway connecting this population center to significant Federally administered public lands. This greenway will benefit local and regional residents alike. The lower portion of the creek can benefit tremendously from community involvement in anadromous salmonid habitat and riparian habitat restoration projects. Above Clear Creek Road bridge, the canyon and Mule Mountain ridge provide additional primitive recreation opportunities, nonmotorized access, and a scenic backdrop to users. Various interpretive opportunities are present to assist better management of the ACEC.

Figure G-22
Swasey Drive Clear Creek Greenway ACEC (Proposed Alt B, not Carried Forward in Alts C and D)



G.3.17 Sheep Rock ACEC

Table G-22
Sheep Rock Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Cultural and Historic	1	1	Partially	N/A	N/A	N/A	1,410
	Plant Communities	3	1					
	Wildlife	2	1					

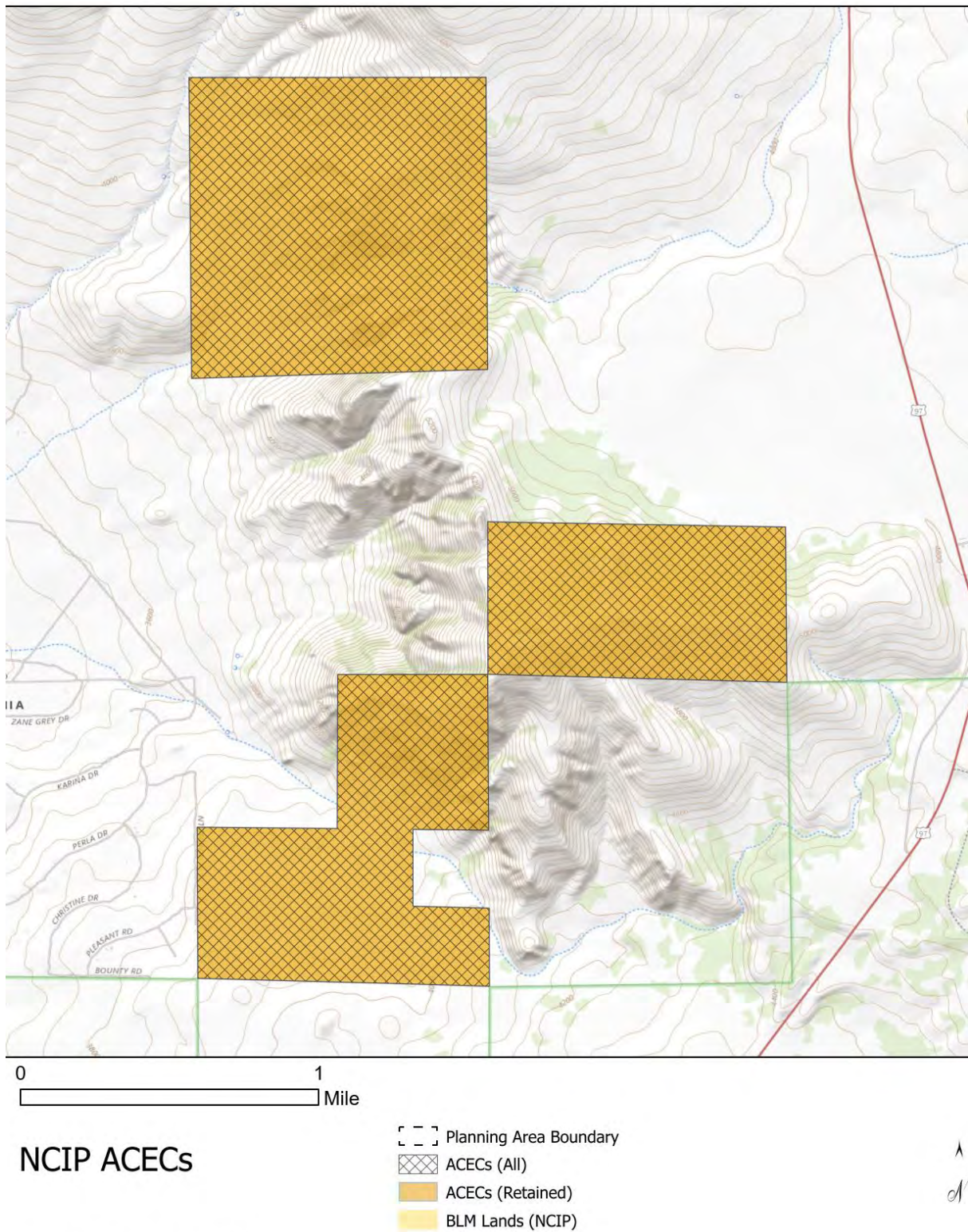
Rationale for ACEC – Cultural and Historic, Plant Communities, and Wildlife

The Sheep Rock ACEC is located approximately 13 miles northeast of the town of Weed in Siskiyou County, California. It is just west of Highway 97 on a prominent mountain known as Sheep Rock. Sheep Rock ACEC has regionally significant values in terms of cultural resources, wildlife, and plant communities.

This ACEC has increased importance because it falls within an identified Essential Connectivity Corridor of High Biological Value. These corridors are areas of intact habitat that are especially important to wildlife and plants for connectivity, ease of migration, and habitat resilience in the era of climate change. Sheep Rock is within the recently elucidated migration corridor for the East Shasta Valley elk herd, which winters in the region. ACEC designation would lend additional protections to the herd. The steep cave and outcrop precipice is also home to sensitive listed raptors, bats, and other animals. The cliffs offer nesting sites for Golden Eagle, Prairie Falcon, Peregrine Falcon, and several other raptors. It is a potential reintroduction site for bighorn sheep after which the area was named.

The proposed 1,410-acre Sheep Rock ACEC meets multiple R&I values. In terms of cultural resources, Sheep Rock is one of the most well-known historic landmarks of northern California. Around its southern base runs the Yreka Trail that is under consideration for designation as a National Historic Trail. Earlier trappers and military groups camped and travelled around the mountainous outcrop. Pre-Contact sites occur in the area, some of which have been looted and are in danger of continued damage. Sheep Rock is also an important landmark to the Shasta Indians. Non-native vegetation is intruding into the location. Illegal vehicle use is also causing damage to some archaeological remains. Signing, fencing, and occasional monitoring have helped in site and resource protection, but more focused study and protection measures are warranted.

Figure G-23
Sheep Rock ACEC Map (Proposed Alts B and D, not Carried Forward in Alt C)



G.3.18 Black Mountain ACEC

Table G-23
Black Mountain Summary of ACEC Findings

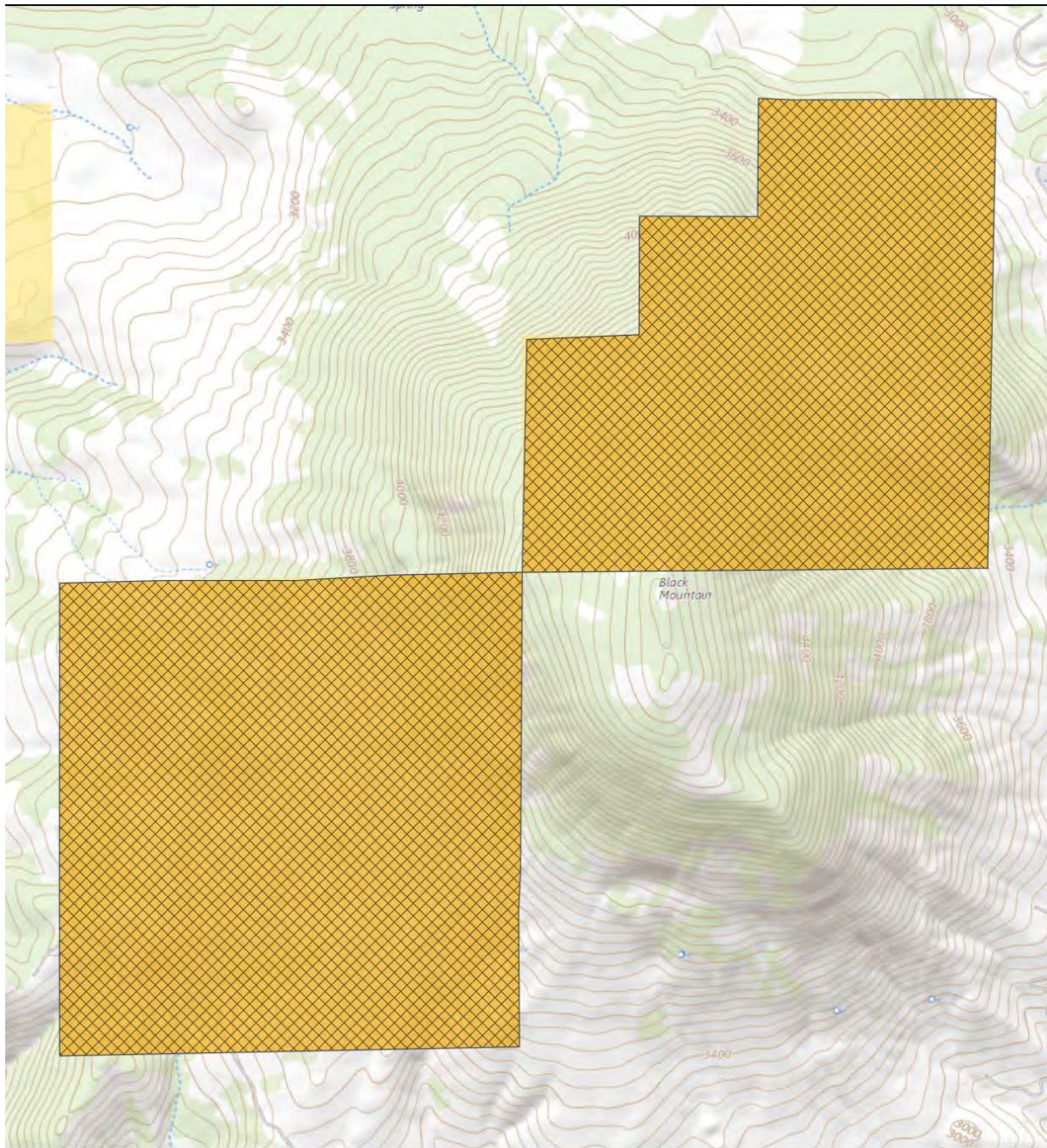
Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Cultural and Historic	1	1	No	N/A	N/A	N/A	1,114
	Plant Communities	3	1					

Rationale for ACEC – Cultural and Historic, and Plant Communities

The Black Mountain ACEC is located approximately 10 miles north-northwest of Yreka and about 4 miles southeast of Hornbrook in Siskiyou County, California. The proposed ACEC comprises the BLM lands on Black Mountain, a prominent local landmark. Black Mountain ACEC has regionally significant values in terms of cultural resources, fisheries, and plant communities.

The proposed 1,114-acre Black Mountain ACEC meets multiple R&I values. Black Mountain is a Traditional Cultural Property as identified by Shasta Tribal informants. Access for Tribal visitation is sharply curtailed by private surrounding lands. The location also contains pristine conifer forest stands that exhibit old growth characteristics which provide invaluable ecosystem services and unique geologic features including an isolated volcanic dome with massive talus slopes. The mountain is home to an unusual mix of plants and animals often disturbed by feral hog herds. At least one BLM sensitive plant, *Lomatium greenii*, is present and others are suspected. Sensitive listed raptors and other animal species are concentrated on this mountain. Its relative seclusion has allowed some measure of current protection for various animal species, but nearby developments and population increases may lead to more visitation and resource damage. Non-native vegetation is encroaching on the natural systems present. Focused scientific studies should be conducted on this mountain to help better understand the resources present and their vulnerability. The watershed feeds the Klamath River with its important fisheries and needs continued protection.

Figure G-24
Black Mountain ACEC Map (Proposed Alts B and D, not Carried Forward in Alt C)



0 1
 Mile

NCIP ACECs

Black Mountain ACEC

- [- -] Planning Area Boundary
- [X X] ACECs (All)
- [Solid Orange] ACECs (Retained)
- [Solid Yellow] BLM Lands (NCIP)



G.3.19 Upper Klamath Bench ACEC

Table G-24
Upper Klamath Bench Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Cultural and Historic	I	I	No	Yes ¹⁻²	N/A	N/A	89

1. The shortnose sucker is listed as endangered under the CESA and the ESA.

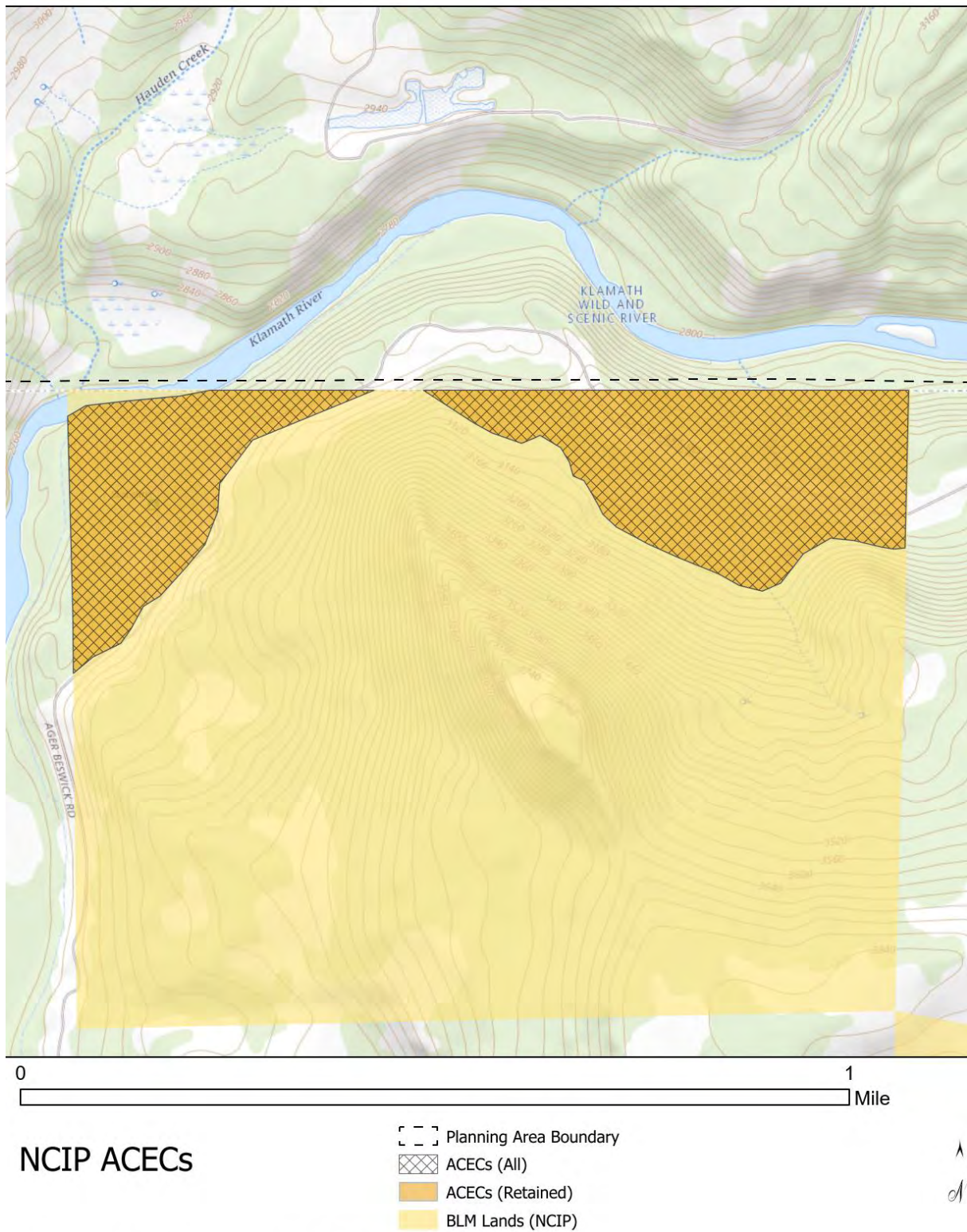
2. The Lost River sucker is listed as endangered under the CESA and the ESA.

Rationale for ACEC – Cultural and Historic

The Upper Klamath Bench ACEC is located just south of the Oregon-California border approximately 13.5 miles west-northwest of the town of Dorris in Siskiyou County, California. The proposed ACEC is located along the Klamath River to the west and north, adjacent to Ager Beswick.

The proposed 89-acre Upper Klamath Bench ACEC meets multiple R&I criteria, particularly in terms of cultural and historic resources. These resources have been damaged by looting, feral horse trampling, woodcutting, fire-suppression activities, camping, and OHV use. Attempts to curtail damaging activities including fencing, signing, and infrequent monitoring have been partially successful. However, more focused attention and protection-based activities are warranted.

Figure G-25
Upper Klamath Bench ACEC Map (Proposed Alts B and D, not Carried Forward in Alt C)



G.3.20 Upper Mattole Valley ACEC

Table G-25
Upper Mattole Valley Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Fisheries	2	I	Mostly	Yes ¹	Yes ²⁻⁵	N/A	459
	Plant Communities	3	I					
	Wildlife	2	I					

1. Marbled Murrelet (*Brachyramphus marmoratus*)
2. Northern Spotted Owl (*Strix occidentalis caurina*)
3. Chinook salmon – California Coastal ESU
4. Coho salmon – Southern Oregon-Northern California Coast ESU
5. Steelhead – Northern California DPS

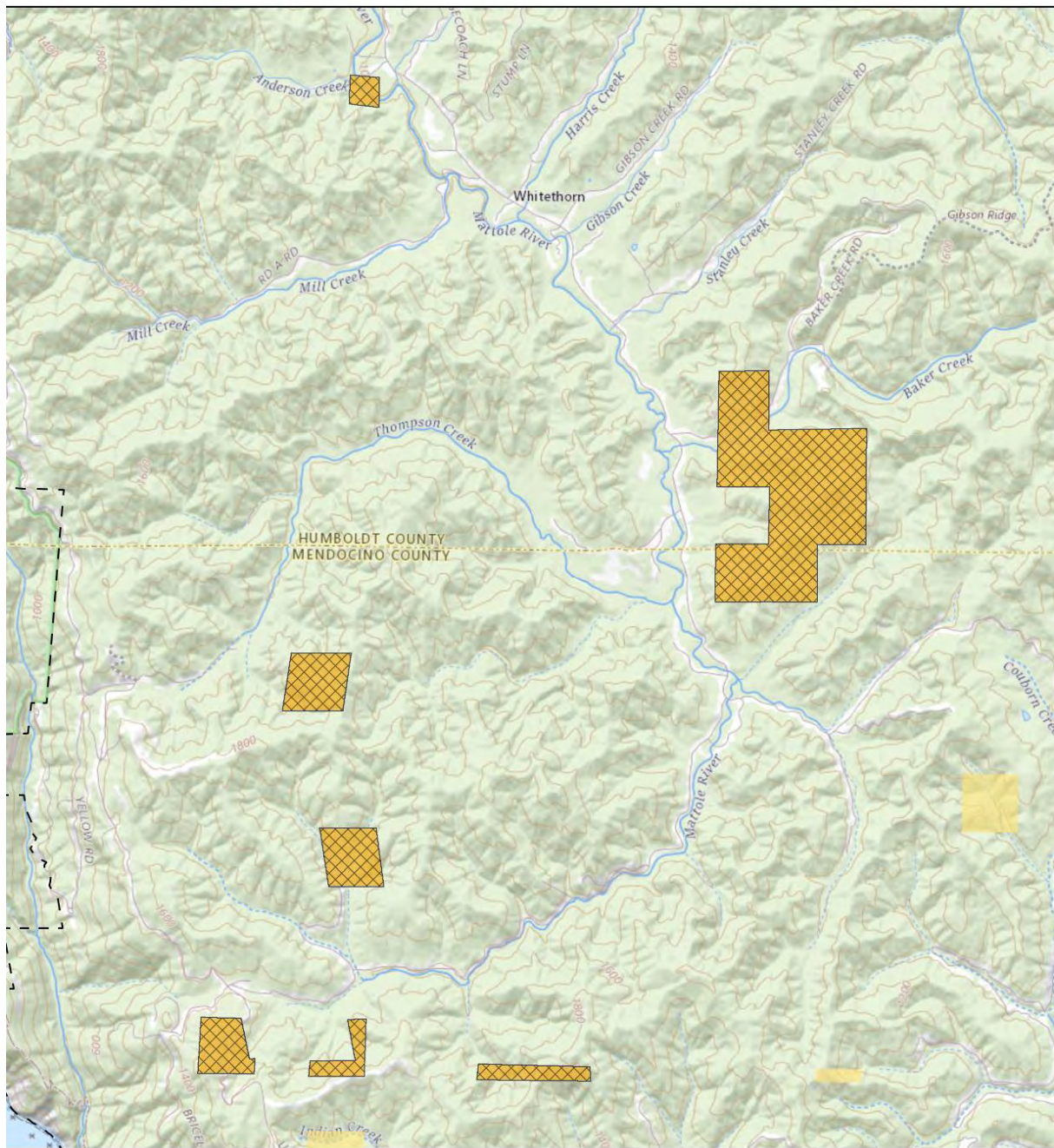
Rationale for ACEC – Fisheries, Plant Communities, and Wildlife

The Upper Mattole Valley ACEC is located on several discontinuous blocks of land along the Mattole River and its tributaries, near the town of Whitethorn in Humboldt County, California and the ACEC has 0.7 miles of stream identified as eligible in the 2023 WSR Eligibility Report. The Upper Mattole Valley ACEC has regionally significant fisheries values and contains threatened species and critical fish and wildlife habitat. Significant hydrologic impairments exist in the ACEC that impact the potential for recovery of listed fish species. The principal impairment is a lack of adequate summer streamflow and seasonally drying stream reaches that would otherwise have the potential to support fish. The lack of streamflow is the result of a multitude of factors, including overly dense forest stands, loss of groundwater storage and human use. Great strides have been made within the private lands to address the human use component. However, much work remains to address the other factors driving the hydrologic impairments.

The proposed 460-acre Upper Mattole Valley ACEC meets multiple R&I values, including fisheries, plant communities, and wildlife. Chinook salmon, coho salmon, and steelhead are present, which are all listed as threatened under the ESA. In addition, the area provides critical habitat for the marbled murrelet (*Barchyramphus marmoratus*) and northern spotted owl (*Strix occidentalis caurina*).

This ACEC has increased importance because it falls within statewide identified Essential Corridors of High Biological Value. The corridors are areas of natural habitat that are especially important to wildlife and plants for connectivity, ease of migration, and habitat resilience in the era of climate change.

Figure G-26
Upper Mattole Valley ACEC Map (Proposed Alts B and D, not Carried Forward in Alt C)



NCIP ACECs

- [- - -] Planning Area Boundary
- [X] ACECs (All)
- [Orange Box] ACECs (Retained)
- [Yellow Box] BLM Lands (NCIP)

Upper Mattole Headwaters ACEC

G.3.2I Eden Valley ACEC

Table G-26
Eden Valley Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Fisheries	2	1 2	No	Yes ¹	Yes ¹⁻²	N/A	Alt B – 10,807;
	Wildlife	2	1 2					Alt C – 4,588
	Natural Process/System	3	1 2					

1. Middle Fork Eel River, Elk, Eden, Ellis, Shake, and Deep Hole creeks support ESA threatened steelhead.

2. Middle Fork Eel River, Elk Creek, and Eden Creek support ESA threatened Chinook salmon.

Rationale for ACEC – Fisheries, Wildlife, and Natural Process/System

The Eden Valley ACEC is located in a large land area between Elk Creek to the east and Hearst-Willis Road the west, Eden Creek to the north, and the Mendocino National Forest boundary line to the south. This area is known as Eden Valley and is located in Mendocino County, California, approximately 11 miles southeast of Covelo. Eden Valley ACEC has regionally significant fisheries, wildlife, and natural process/system values. Additionally, the ACEC has 15.4 miles of stream identified as eligible in the 2023 WSR Eligibility Report.

The proposed Eden Valley ACEC meets multiple R&I criteria. The proposed Eden Valley ACEC hosts a unique natural system consisting of rare and sensitive geologic and ecological features, including irreplaceable rare and endemic plant species and cultural resources. Its ecological intactness further serves to facilitate natural processes, such as evolutionary adaptation to changing temperature and precipitation regimes. The area constitutes a significant fish and wildlife resource in its provision and yield of critical summer-time cold water and habitat for threatened anadromous fish species.

The proposed Eden Valley ACEC contains the largest, western-most, contiguous serpentine outcrop in the region, and as such, provides unique plant endemism, mineral composition, and critical cold-water resources of a type and scale necessary for maintaining key ecological processes. BLM currently manages about seventy-five percent of the existing serpentine outcrops in the Eden Valley vicinity. This is critically important given that many private lands in the region are often ecologically and functionally fragmented, or at risk of subdivision and development.

Unique geology is the foundation of serpentine barrens and the interdependent rare and endemic plants they support, several of which are likely yet undescribed to science, they support. Serpentine barrens are a unique ecoregion found in the coast ranges of the United States. In California, approximately 1.5 percent of California's land base is underlain by serpentine soil. Of species endemic to California, 12.5 percent are restricted to ultramafic substrates. The North Coast and Klamath Ranges support more serpentine endemics than the rest of California combined. Fifteen percent of all plant taxa listed as threatened or endangered in California show some degree of association with ultramafic substrates.

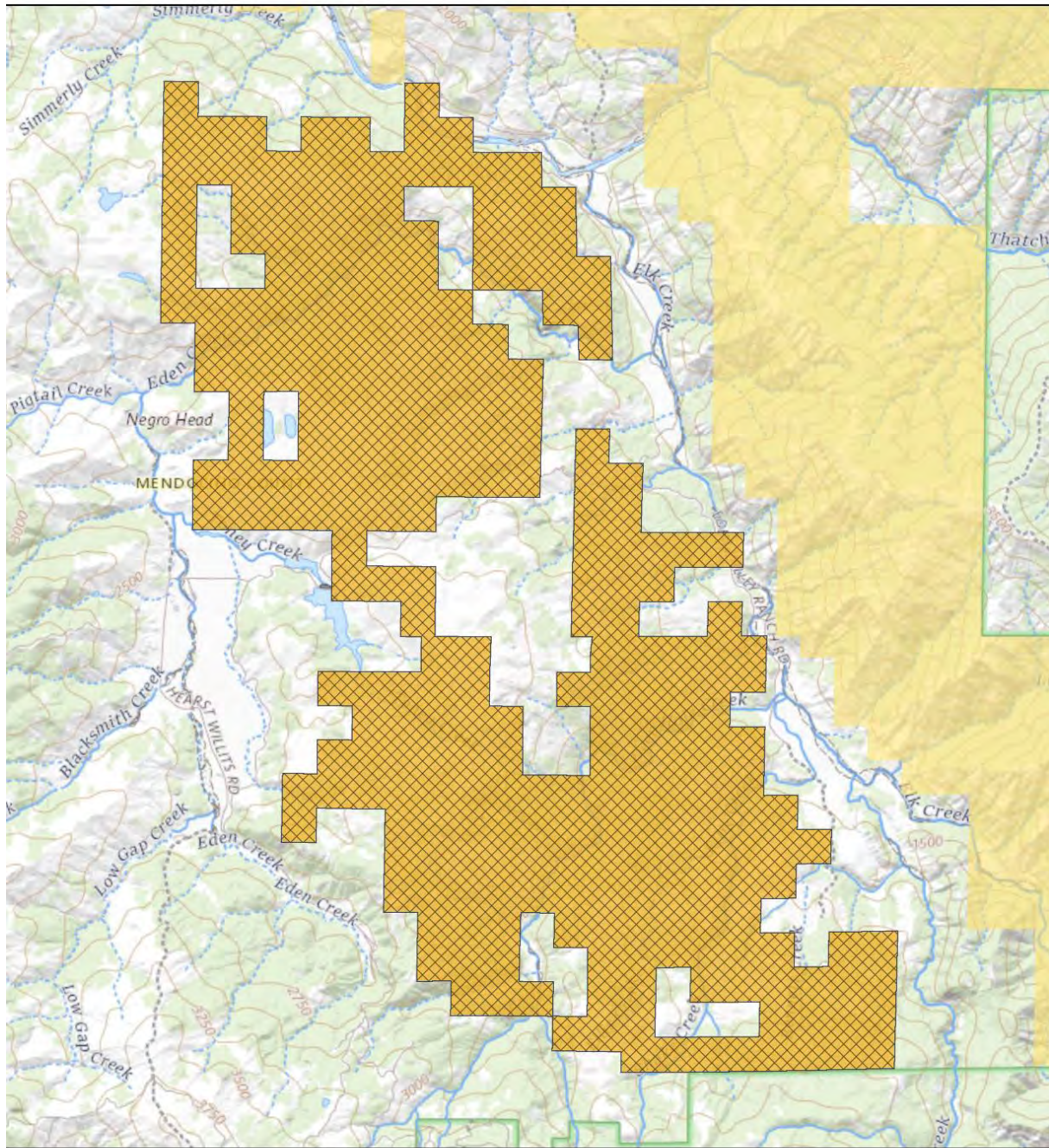
Serpentine soils are of immense value for plant endemism and the study of botanical evolution that can provide unique insight into the effects of a changing climate. The proposed Eden Valley ACEC includes the largest northern stand of Sargent's cypress (*Hesperocyparis sargentii*) in the world. Sargent's cypress is both native and endemic to California. Cypress typically occurs in small patches with low genetic diversity. However, the isolation and size of Sargent's cypress stands in Eden Valley suggest the community has high genetic diversity. Sargent's cypress is a closed-cone conifer that requires fire to open the cone scales to promote good germination. Stand recruitment and resilience benefits from an ongoing natural disturbance regime. Through geologic time, a species range is in a state of continual movement, expanding or contracting. The Eden Valley Sargent Cypress stand exists at the edge of its range (within 12 miles), and thus contains important information as to the ecological amplitude for which the species will tolerate. Preservation and study of this stand may be important for insight into the effects of a changing climate.

The proposed Eden Valley ACEC contains two rare plant communities, Ultramafic Cypress Woodland and Valley Oak Woodland and Forest; as well as more than 12 rare plants, and potentially eight or more taxa yet undescribed.

Five major streams are located within the proposed Eden Valley ACEC. Shake, Ellis, Deep Hole, Toney, and Eden Creeks flow from ultramafic rock bodies on public lands, and eventually join with Elk Creek. Elk Creek is a major tributary that joins the Middle Fork of the Eel River, one and a half miles downstream of the Eden Creek confluence. The Middle Fork of the Eel River and Elk Creek are important salmonid bearing tributaries that contain threatened populations of steelhead trout and Chinook salmon. These streams also support the Pacific Lamprey which is a BLM Sensitive species and federal Species of Special Concern. The 1990 BLM Wilderness Study Report also lists Deep Hole Creek as a productive small stream for steelhead and resident rainbow trout. Juvenile salmonids were also observed by BLM personnel on the lower portion of Eden Creek in October of 2002. The unique serpentine bedrock yields critical summer sources of cold water to threatened salmonids. Such cold-water refuge habitats are becoming increasingly important as atmospheric temperatures continue to rise with corresponding impacts to water quality and quantity.

This proposed ACEC also hosts a wealth of cultural resources. The Eden Valley area is situated within the ancestral territory of the Yuki people. The rich natural resources of the Eden Valley ACEC are a major factor in the settlement of the area. Archaeological sites such as hunting camps, resource procurement and activity areas, and permanent habitation/village sites are often found in the region.

Figure G-27
Eden Valley ACEC Map (Alternatives B and D)



NCIP ACECs

Eden Valley ACEC

- [- -] Planning Area Boundary
- [X] ACECs (All)
- ACECs (Retained)
- BLM Lands (NCIP)



G.3.22 Eden Creek ACEC

Table G-27
Eden Creek Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Fisheries	2	1 2	No	Yes ¹⁻²	Yes ¹⁻²	N/A	4,588
	Wildlife	2	1 2					
	Natural Process/ System	3	1 2					

1. Middle Fork Eel River, Elk and Eden creeks support ESA threatened steelhead

2. Middle Fork Eel River, Elk and Eden creeks support ESA threatened Chinook salmon.

Rationale for ACEC – Fisheries, Wildlife, and Natural Process/System

The Eden Creek ACEC is southeast of Round Valley and northeast of Willits. The area contains roughly 200 acres of the Middle Fork Eel Wild in the area's northeastern corner and the Yuki Wilderness is a located quarter mile to the east. Eden Creek ACEC contains regionally significant fisheries, wildlife, and natural process/system values.

The proposed Eden Creek ACEC meets multiple R&I criteria. The proposed ACEC provides important wildlife habitat, particularly for rare species due to the area's geophysical diversity and ecological system diversity and rarity. Portions of the proposed Eden Creek ACEC are within federally-designated critical habitat for Chinook salmon (Middle Fork Eel River), steelhead (Middle Fork Eel River, Elk Creek, and Eden Creek), and the area provides potential habitat for numerous other at-risk species due to the harsh serpentine soils and diverse landforms.

Northwest California Integrated Resource Management Plan – Proposed RMP/Final EIS



G.3.23 Beegum Creek Gorge ACEC

Table G-28
Beegum Creek Gorge Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Fisheries	2	I	Partial	Yes ¹⁻²	Yes ¹⁻²	N/A	4,377
	Wildlife	2	I					
	Natural	3	I					
	Process/ System							

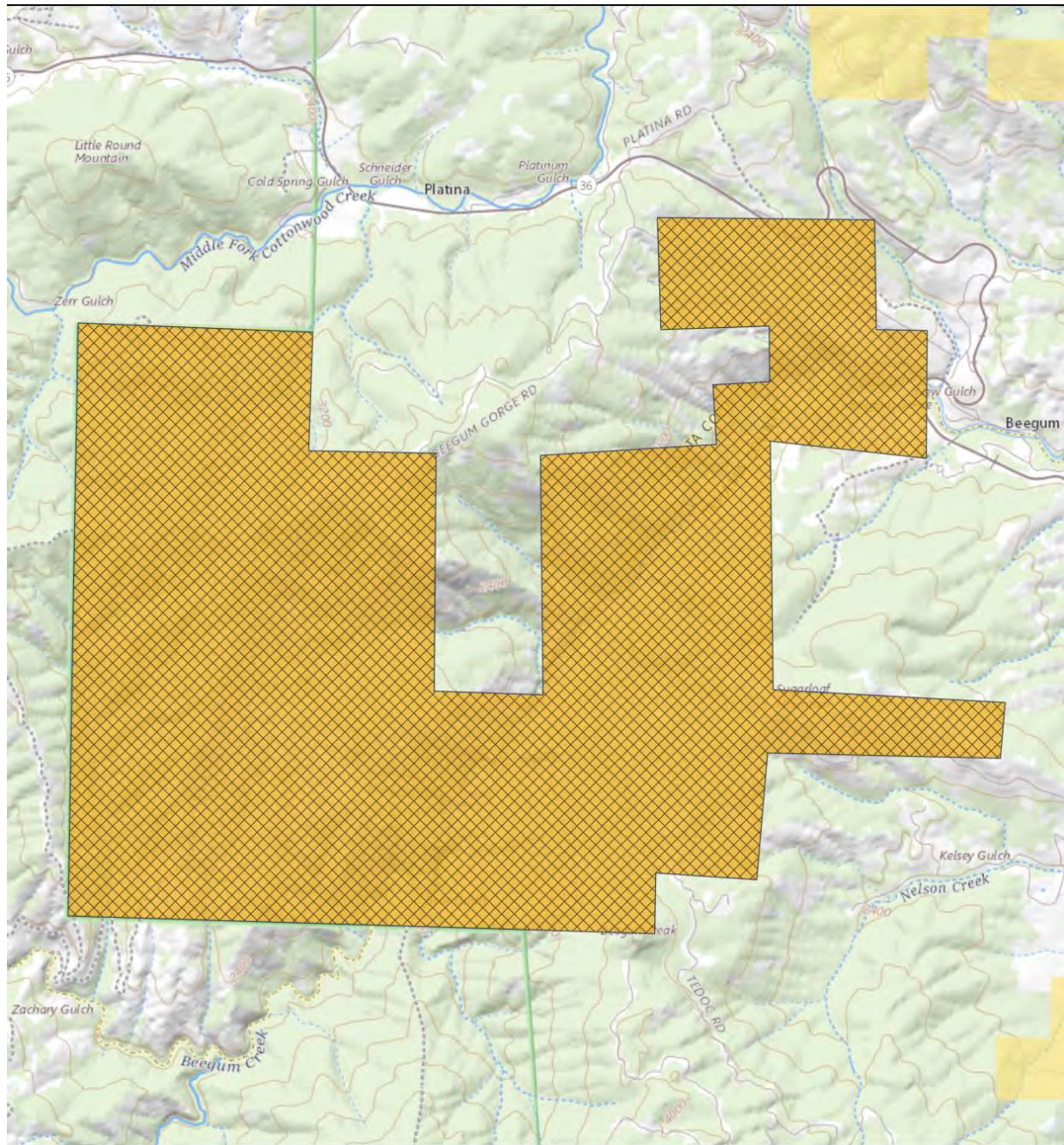
1. The steelhead – Central Valley DPS is listed as threatened under the ESA.
2. The Chinook salmon – Central Valley spring-run ESU is listed as threatened under the CESA and threatened under the ESA.

Rationale for ACEC – Fisheries, Wildlife, and Natural Process/System

The Beegum Creek Gorge ACEC is located in Tehama County and surrounds Beegum Creek, which flows through a deep gorge accessible from Highway 36 west of Red Bluff. The proposed Beegum Creek Gorge ACEC meets multiple R&I criteria and has 4.7 miles of stream identified as eligible in the 2023 WSR Eligibility Report. Beegum Creek Gorge hosts a unique natural system consisting of rare and sensitive geological and lithological features that could support rare and endemic serpentine plant species such as the Beegum Onion, Tracy's eriastrum, sickle-fruit jewelflower, and Stebbin's harmonia. It further serves to facilitate natural processes essential to maintaining species diversity due to its climate resiliency and ecological intactness. The area supports a significant fish and wildlife resource, providing habitat for multiple threatened and sensitive species (e.g., Chinook salmon, steelhead). Conservation Science Partners' analyses further demonstrate the regional (i.e., more than local) significance and exemplary nature of these values as compared to other places in the West and within BLM's jurisdiction. Finally, their analysis highlights the Beegum Creek's vulnerability to adverse change related to the threat of mineral resource development, future water withdrawals, and the presence of sensitive soils, which may present a natural hazard due to their high erosion potential.

This ACEC has increased importance because it occurs within statewide-identified Essential Corridors of High Biological Value. The corridors are areas of natural habitat that are especially important to wildlife and plants for connectivity, ease of migration, and habitat resilience in the era of climate change. Further, the ACEC lies within critical winter range for one of California's declining black-tailed deer (*Odocoileus hemionus*) herds. Additionally, the area has had recent intense fire activity increasing soil erosion.

Figure G-29
Beegum Creek Gorge ACEC Map (Alts B and D, not Carried Forward in Alt C)



NCIP ACECs

Beegum Creek Gorge ACEC

- [- - -] Planning Area Boundary
- [X X X] ACECs (All)
- [Solid Orange] ACECs (Retained)
- [Solid Yellow] BLM Lands (NCIP)



G.3.24 North Fork Eel ACEC

Table G-29
North Fork Eel Summary of ACEC Findings

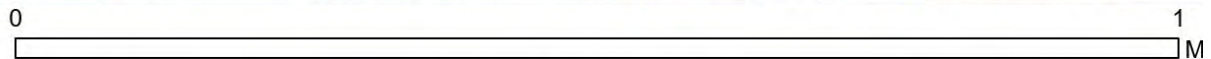
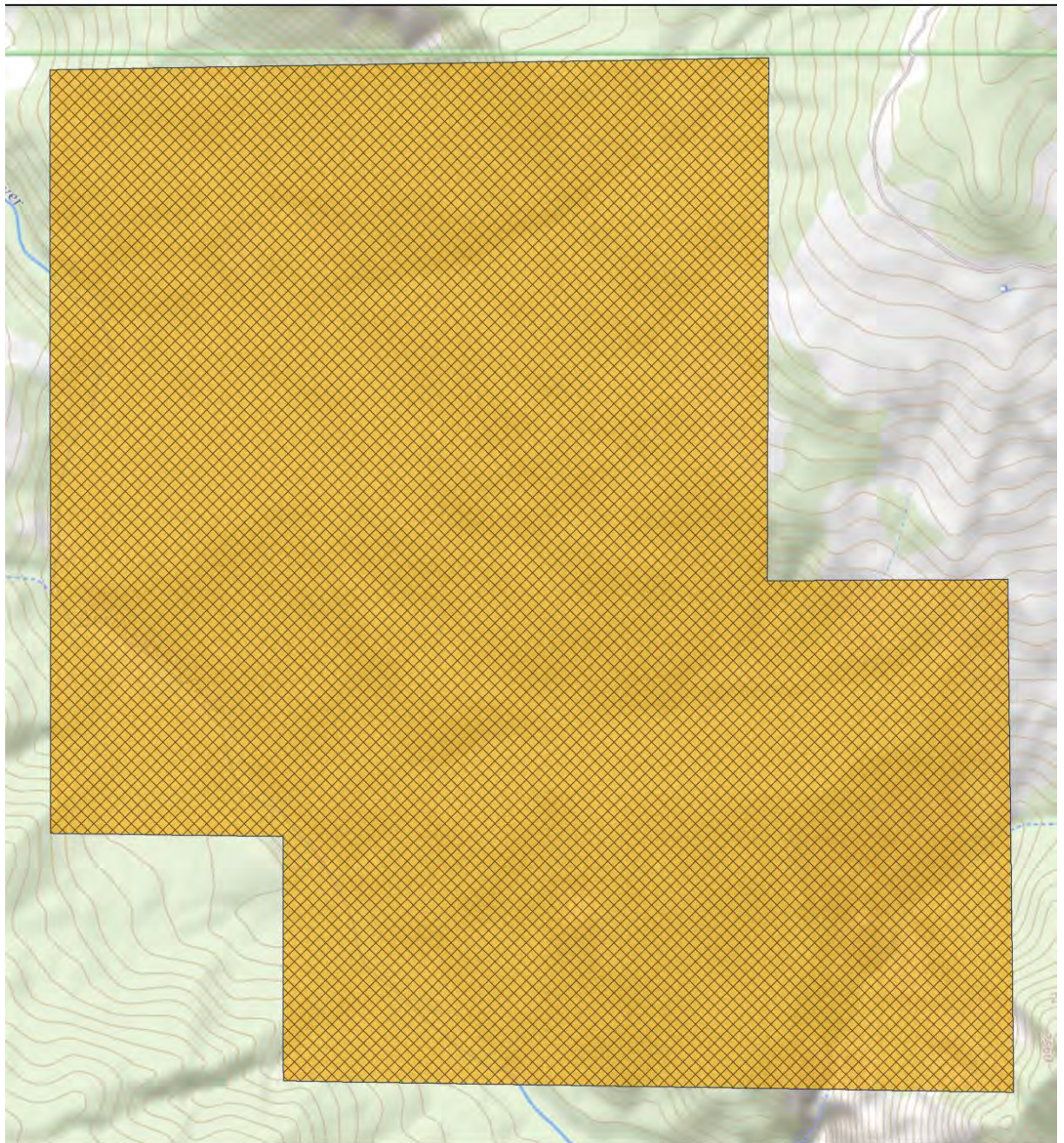
Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Fisheries	2	1	No	Yes ^I	No	N/A	500
	Wildlife	2	1					
	Natural Process/ System	3	1					
	Natural Hazards	4	3					
			4					

I. Steelhead are listed as threatened under the ESA.

Rationale for ACEC – Fisheries, Wildlife, Natural Process/System, and Natural Hazards

The proposed North Fork Eel ACEC is straddles the designated Wild and Scenic North Fork Eel River in the south-central portion of Trinity County and meets multiple R&I criteria. The proposed ACEC hosts a unique natural system consisting of rare and sensitive geological and lithological features, which support rare and endemic plant species. Its climate resilience and ecological intactness further serve to facilitate natural processes, including ecological flows and species adaptation to climate change. The area offers a significant fish and wildlife resource by providing habitat for multiple threatened or sensitive species. The area contains values with regional (i.e., more than local) significance and exemplary nature as compared to other places in the West and within BLM's jurisdiction. Finally, the North Fork Eel is vulnerable to adverse change related to the threat of future water withdrawals, and the potential presence of a natural hazard due to its sensitive and erosion-prone soils.

Figure G-30
North Fork Eel ACEC Map (Alts B and D, not Carried Forward in Alt C)



NCIP ACECs

- Planning Area Boundary
- ACECs (All)
- ACECs (Retained)
- BLM Lands (NCIP)



North Fork Eel ACEC

G.3.25 Willis Ridge ACEC

Table G-30
Willis Ridge Summary of ACEC Findings

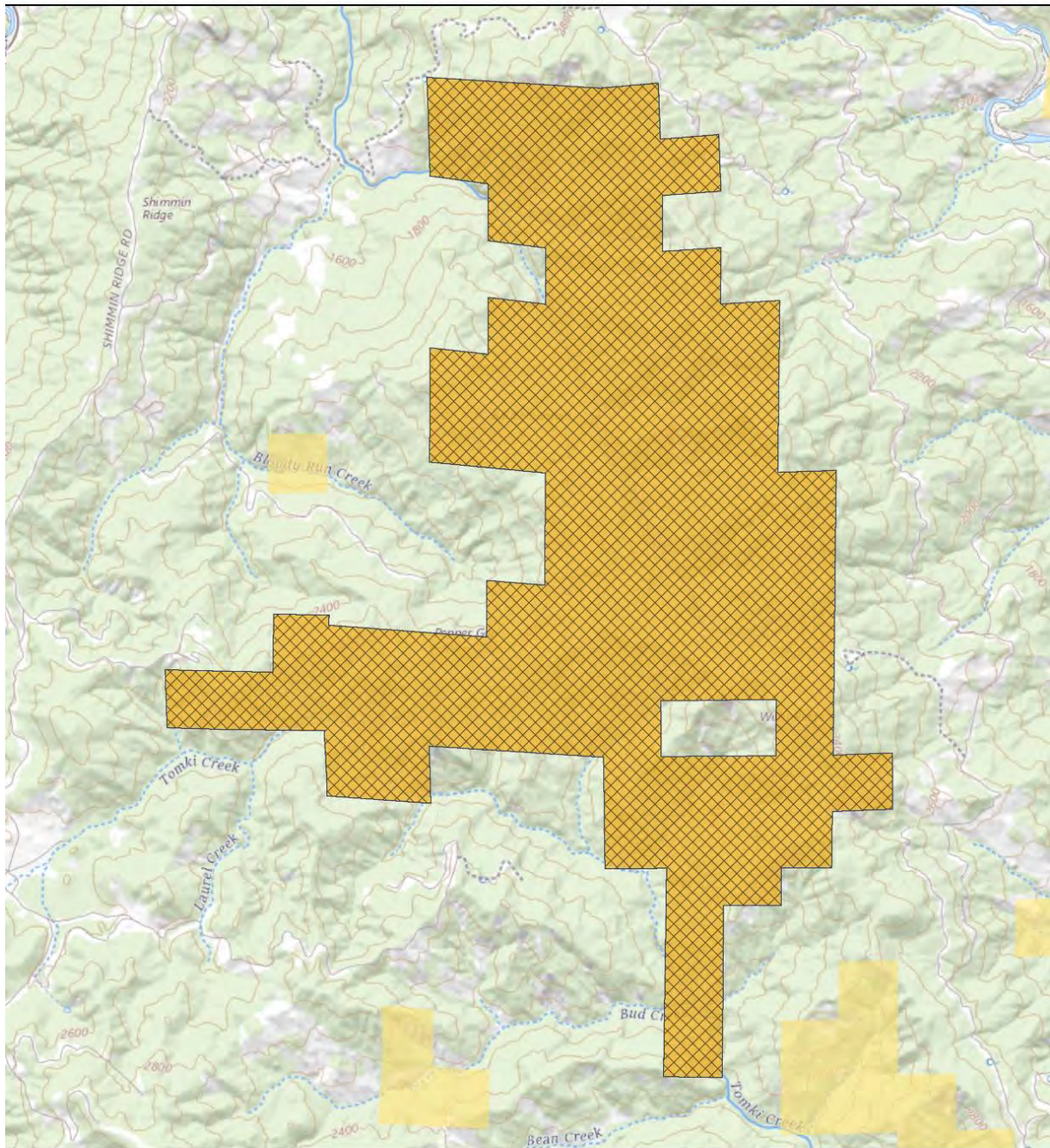
Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Cultural and Historic	1	1	No	N/A	Yes ¹	N/A	3,184
	Fisheries	2	1					
	Wildlife	2	1					
	Natural Process/ System	3	1					
	Natural hazards	4	4					

1. Northern Spotted Owl (*Strix occidentalis caurina*)

Rationale for ACEC – Cultural and Historic, Fisheries, Wildlife, Natural Process/Systems, and Natural Hazards

Located south of State Highway 162 in Mendocino County, Willis Ridge is the divide between Outlet Creek and Tomki Creek, which are two tributaries of the Wild and Scenic Eel River and serves as the headwaters for Tomki Creek and Bloody Run Creek. The proposed Willis Ridge ACEC meets multiple R&I criteria and has 2.6 miles of stream identified as eligible in the 2023 WSR Eligibility Report. The ACEC hosts a unique natural system consisting of rare and sensitive geophysical and ecological features, including rare and endemic plant species, as well as forests with late successional characteristics. Its climate resilience and ecological intactness further serve to facilitate natural processes, such as adaptation to climate change. The area constitutes a significant fish and wildlife resource in its provision of habitat for rare, threatened and sensitive species. Conservation Science Partners (CSPs) analyses further demonstrate the regional (i.e., more than local) significance and exemplary nature of these values as compared to other places in the West and within BLM's jurisdiction. Finally, their analysis highlights the Willis Ridge's vulnerability to adverse change and the presence of a potential natural hazard associated with sensitive soils that are highly subject to erosion.

Figure G-3I
Willis Ridge ACEC Map (Alts B and D, not Carried Forward in Alt C)



NCIP ACECs

Willis Ridge ACEC

- [- -] Planning Area Boundary
- [X] ACECs (All)
- Orange ACECs (Retained)
- Yellow BLM Lands (NCIP)



G.3.26 South Spit ACEC

Table G-31
South Spit Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Fisheries	2	1	No	Yes ¹⁻³	Yes ³	N/A	888 ⁴
	Wildlife	2	1					
	Natural Process/System	3	1					
	Cultural Significance	1	2					

1. Beach layia is listed as endangered under the CESA and the ESA.
2. Menzies' wallflower is listed as endangered under the CESA and the ESA.
3. The western snowy plover is listed as threatened under the ESA.
4. The best available GIS data was used to calculate acres and create the South Spit ACEC Map however, South Spit ACEC is on a shoreline, which tends to change. There may be small variations between this data and current conditions.

Rationale for ACEC – Fisheries, Wildlife, Natural Process/System, and Cultural and Historic

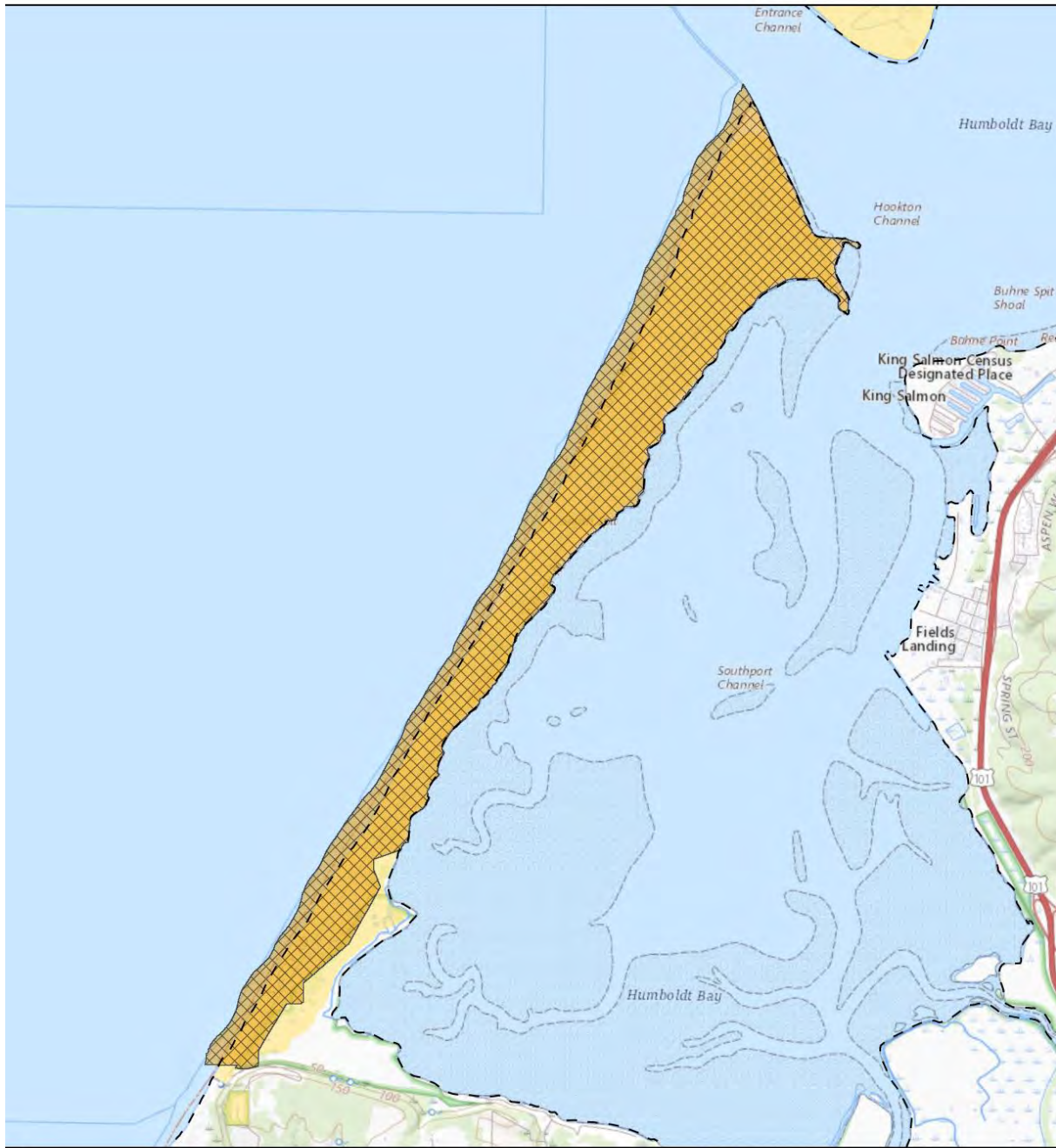
The proposed South Spit ACEC is a narrow strip of land (approximately 4.5 miles long) between Humboldt Bay's entrance and Table Bluff and meets multiple R&I criteria. The proposed ACEC provides essential coastal dune habitat for continued existence and recovery of beach layia, Menzie's wallflower, western snowy plover, and a multitude of other BLM Sensitive Species. The proposed South Spit ACEC is comprised of four California Sensitive Plant Communities that are vulnerable to critically imperiled, such as northern foredune grassland, active coastal dunes, northern coastal salt marsh, and brackish coastal marsh. With active management, these native and rare communities can be recovered where invasive, non-native species have affected community composition and processes that sustain them. These habitats provide essential habitat to a variety of wildlife and native pollinators.

The proposed South Spit ACEC is appropriate for observation and study of natural, physical dune processes in furthering understanding of landform adaptation and resilience in a coastal barrier system, which offers broader management implications for the state of California.

Cultural resources also meet the R&I criteria to promote a South Spit ACEC. This unit of land has been used by people for hundreds of years and falls within the ancestral homeland of the Wiyot people. The area is culturally significant and is still important to the Wiyot people as a place to engage in traditional practices.

The proposed South Spit ACEC provides wildlife-related access for waterfowl hunting and fishing, and other recreational uses such as pedestrian use, vehicular wave slope access, equestrian use, jogging, bicycling, hang-gliding and picnicking. In order to best manage for the unique, rare, threatened, endangered, dynamic natural and vulnerable qualities of the South Spit, the BLM recommends the South Spit as warranting of special management considerations.

Figure G-32
South Spit ACEC Map (Alts B and D, not Carried Forward in Alt C)



NCIP ACECs

South Spit ACEC

- Planning Area Boundary
- ACECs (All)
- ACECs (Retained)
- BLM Lands (NCIP)



G.3.27 Corning Vernal Pools ACEC

Table G-32
Corning Vernal Pools Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Wildlife	2	1	No	Yes ¹	N/A	N/A	173
	Natural Process/ System	3	1					

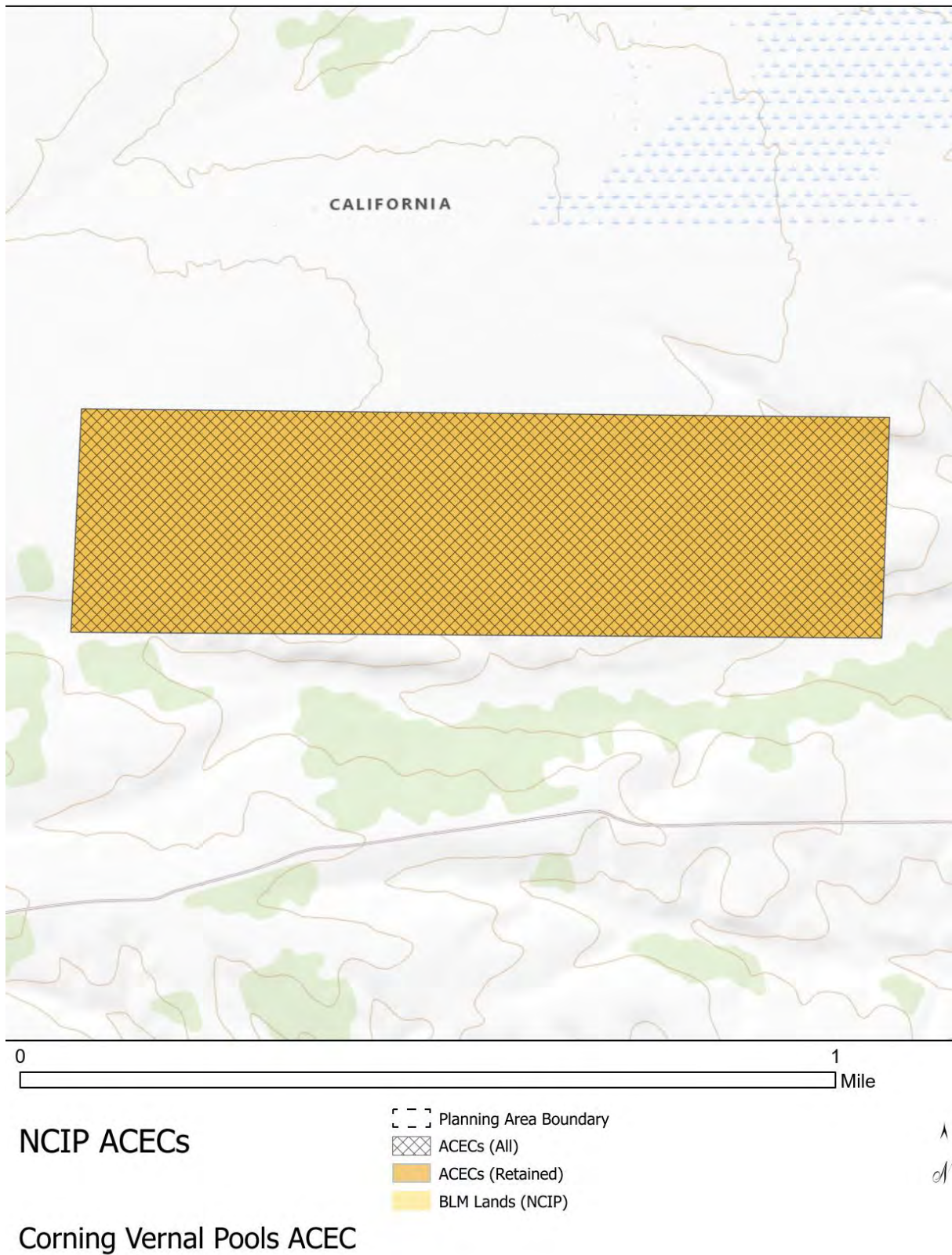
1. The vernal pool fairy shrimp is listed as threatened under the ESA

Rationale for ACEC – Wildlife and Natural Process/System

Corning Vernal pools is located near the community of Corning, California. The proposed ACEC meets multiple R&I criteria. The ACEC Vernal pools are a rare and diminishing resource on the landscape. Similar lands in the area have been converted to Walnut and Olive orchards, an activity which generally results in the permanent loss of vernal pool habitat. This pool complex has a concentration of the Threatened and Endangered Vernal pool fairy shrimp – nearly a third of the pools at this location have documented populations of this species, which is threatened primarily by habitat loss resulting from agriculture and development. There are also several rare and sensitive vernal pool associated plant species that have been found in the pool complex. The flora of the immediate area is characterized by numerous rare and sensitive plants, including the California Endangered Boggs Lake hedge hyssop (*Gratiola heterosepala*). Five additional plants have CNPS 1B or 2B rare plant status.

The vernal pool complex on this ACEC is dependent on the watershed to the north. Water for the vernal pools comes from the north through a system of additional vernal pools and swales, as well as sheet flow during heavy rain events. At present this watershed is in private ownership and is managed sporadically for grazing cattle and sheep. It is imperative that this watershed be maintained either through fee title acquisition or permanent conservation easement. Other management needs include fencing to discourage trespass grazing and the possibility of timed grazing for weed control.

Figure G-33
Corning Vernal Pools ACEC Map (Alts B and D, not Carried Forward in Alt C)



G.3.28 North Table Mountain ACEC

Table G-33
North Table Mountain Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Natural Process/ System	3	I	Yes	Yes ^I	N/A	N/A	53

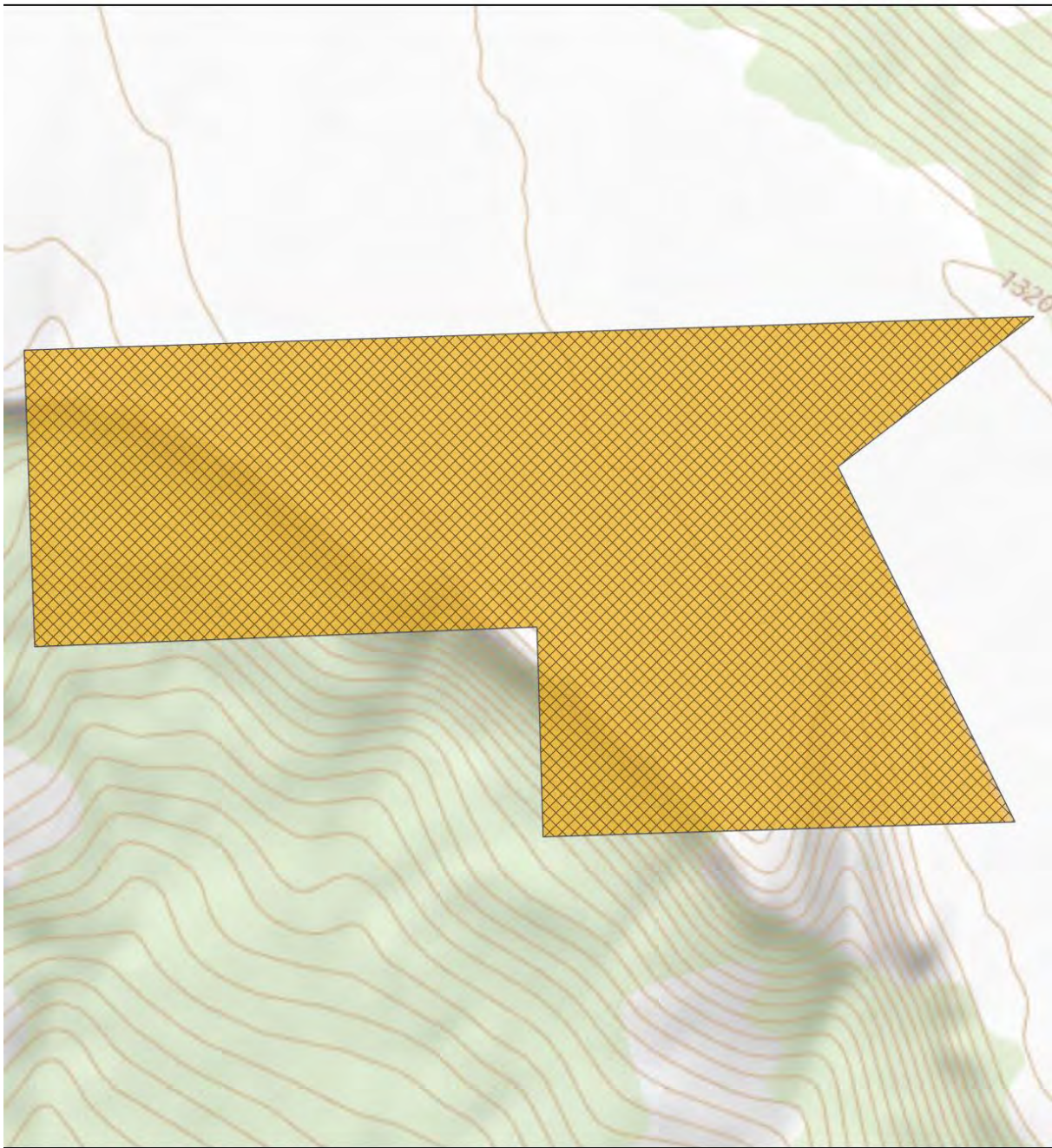
I. The foothill yellow-legged frog Feather River clade is listed as threatened under the CESA.

Rationale for ACEC – Natural Process/System

The North Table Mountain ACEC is located near Oroville, CA. This ACEC provides habitat that supports the rare Butte County golden clover (*Trifolium jokerstii*). Indicative of its ecological and social importance, several government agencies and private conservation groups have holdings in this area as part of independent efforts to conserve these imperiled resources. North Table Mountain ACEC adds to this conservation matrix. This small ACEC has the largest known population of a rare clover (Butte County golden clover – *Trifolium jokerstii*) which benefits from BLM management of no grazing. The adjacent private land to the north has no occurrences of this rare species, much lower native plant diversity, and many more weeds and other non-native plants. This appears to be because of an intensive year-round grazing treatment of these private lands. It is imperative that this ACEC be protected from the management of the adjacent private lands.

This ACEC has increased importance because it falls within a statewide identified Essential Connectivity Corridor of High Biological Value. The corridors are areas of natural habitat that are especially important to wildlife and plants for connectivity, ease of migration, and habitat resilience in the era of climate change.

Figure G-34
North Table Mountain ACEC Map (Alts B and D, not Carried Forward in Alt C)



NCIP ACECs

- [- -] Planning Area Boundary
- [X] ACECs (All)
- [Yellow] ACECs (Retained)
- [Light Yellow] BLM Lands (NCIP)

North Table Mountain ACEC

G.3.29 Red Mountain ACEC

Table G-34
Red Mountain Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Existing	Fisheries	2	1	Yes	Yes2-6	Yes3-6	6,815	0
			2					
	Wildlife	2	1					
			2					
	Plant Communities	3	1					

1. Rare plants
2. The northern spotted owl is listed as threatened under the ESA.
3. The marbled murrelet is listed as threatened under the ESA.
4. Chinook salmon are listed as threatened under the ESA.
5. Coho salmon are listed as threatened under the ESA.
6. Steelhead are listed as threatened under the ESA.

Rationale for ACEC – Fisheries, Plant Communities, and Wildlife

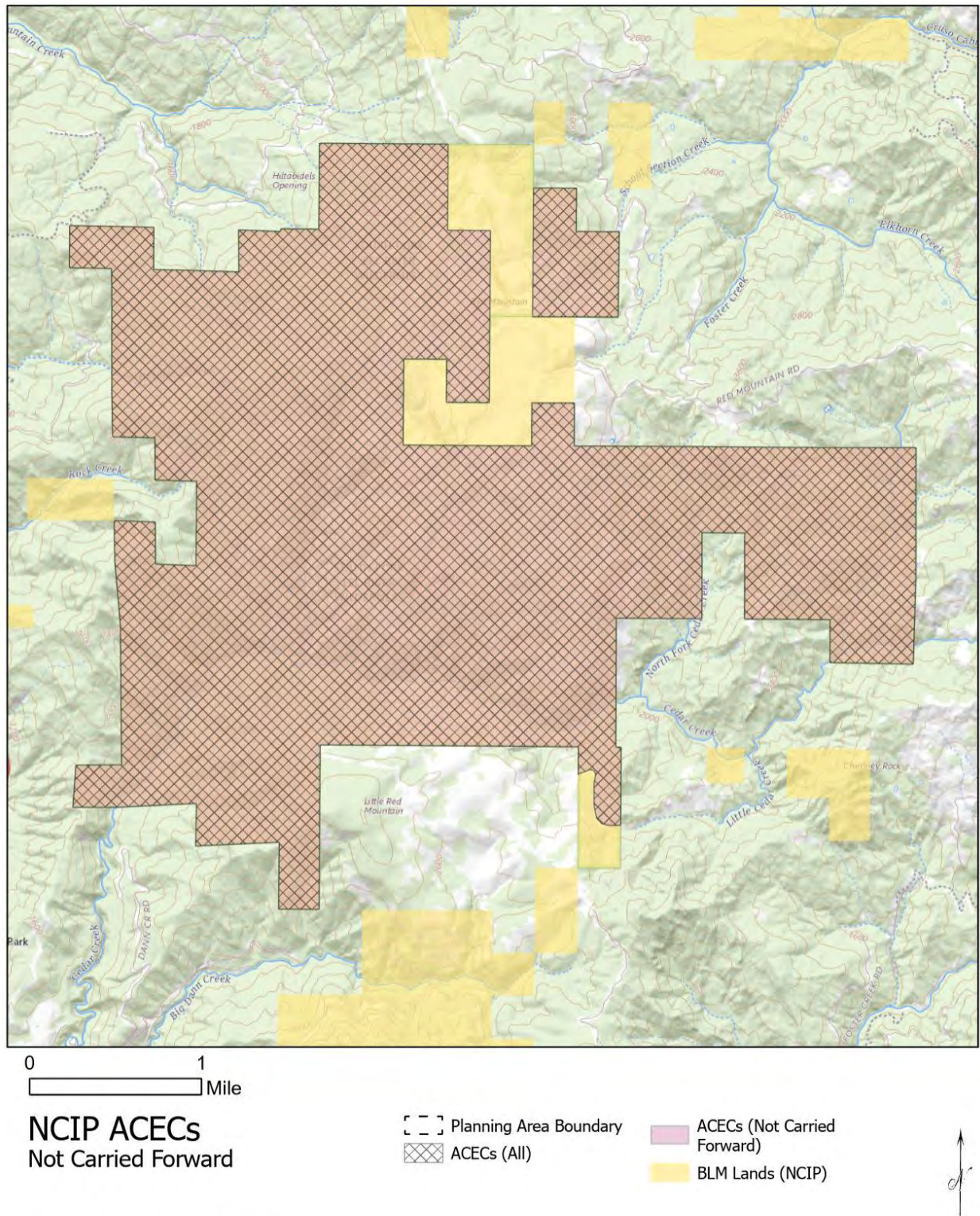
The Red Mountain, located less than a mile northeast of Legget, CA and the Standish-Hickey State Recreation Area, contains a number of unique resource values. Red Mountain was incorporated as a unit of the South Fork Eel River Wilderness in 2006. Clearly visible from aerial imagery, the unique red soils of the Red Mountain area are a product of the unusual serpentine soils there that have high levels of iron which, combined with a lack of organic material, creates the obvious red appearance. Serpentine soils have an ultramafic origin, and the low calcium to magnesium ratio effects the cation exchange capacity (CEC) of the soils. Low levels of nutrients in these soils, including nitrogen (N), phosphorous (P), and potassium (K) create a harsh and unique environment that plays host to a number of unique botanical values, which also influences the fauna associated with the area. Streams draining the Red Mountain ultramafic unit are known for abundant cold-water supplies, augmenting the often lethal low, warm streamflows in the South Fork Eel River below. Water flowing from Red Mountain is a significant benefit to salmon and steelhead dependent on cold, clear water, especially in the late summer drought conditions often experienced in Northern California.

The Red Mountain ACEC is host to numerous federally listed and special status plant species. Known Federally endangered plant species include McDonald's Rockcress (*Arabis mcdonaldiana*) and recently discovered Western lily (*Lilium occidentale*). Known BLM sensitive species include Red Mountain catchfly (*Silene campanulata* subsp. *campanulata*), Red Mountain stonecrop (*Sedum laxum* subsp. *Eastwoodiae*), Red Mountain Buckwheat (*Eriogonum kelloggii*), and Mendocino gentian (*Gentiana setigera*). These species thrive due to the particular nature of the serpentine soils. With relatively poor nutrient levels and high levels of heavy metals including Nickel and Chromium, these soils naturally vet competition from other species not adapted to live in the harsh environment in situ. This allows for other species well adapted to these soils to thrive, which ultimately results in a higher number of rare and sensitive species within Red Mountain.

BLM lands in the Red Mountain area are suitable habitat for the northern spotted owl and Federally designated critical habitat for the marbled murrelet.

This ACEC is not being carried forward as the resources it contains are now protected by the designation of wilderness; it no longer requires special management attention afforded by ACEC designation because the R&I values are protected by the Wilderness designation.

Figure G-35
Red Mountain ACEC (Existing) (Not Carried Forward under Alts B, C, and D)



G.3.30 Elder Creek ACEC

Table G-35
Elder Creek Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria see Section 2.1 for Relevance Criterion	Importance Criteria see Section 2.2 for Importance Criterion	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Fisheries	2	1 2	Yes	Yes 1,3-5	Yes 1-5	7,019	0
	Wildlife	2	1 2					

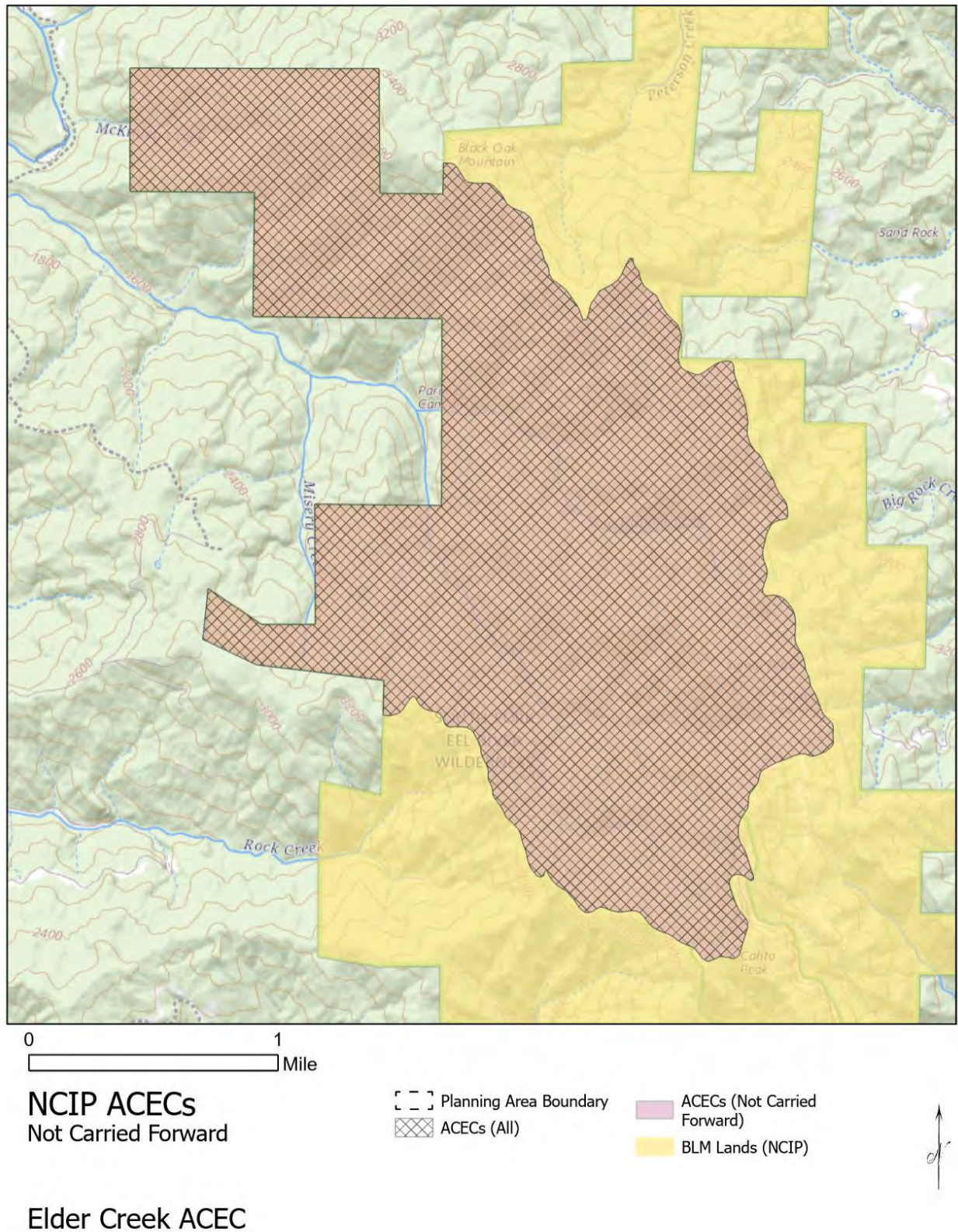
1. The northern spotted owl is listed as threatened under the ESA.
2. The marbled murrelet is listed as threatened under the ESA.
3. Chinook salmon are listed as threatened under the ESA.
4. Coho salmon are listed as threatened under the ESA and CESA.
5. Steelhead are listed as threatened under the ESA.

Rationale for ACEC – Fisheries and Wildlife

Elder Creek is located in the northeast corner of what is now the Cahto Peak unit of the South Fork Eel River Wilderness, approximately 5 miles northwest of Laytonville, CA. Elder Creek is designated as a Registered Natural History Landmark under the Historic Site Act / United Nations Education, Scientific and Cultural Organization (UNESCO) Biosphere Reserve. This nearly pristine stream is considered a Hydrologic Benchmark for water quality. The upper portion of Elder Creek is located on BLM lands, while the lower portion flows into the Angelo Coast Range Reserve (reserve), which is managed for wild lands research but the University of California, Berkeley. The reserve represents one of the few pristine, unharvested coastal forests in the area, and provides an excellent laboratory for studying watershed and ecological processes in an undisturbed coastal range ecosystem.

Elder Creek is an important tributary to the South Fork Eel Wild and Scenic River and provides important habitat for anadromous Pacific lamprey and threatened coho salmon, Chinook salmon, and steelhead, and is designated critical habitat for all three species. Because the resources in Elder Creek are protected by wilderness designation; it no longer requires special management attention afforded by ACEC designation because the R&I values are protected by the Wilderness designation.

Figure G-36
Elder Creek ACEC (Existing) (Not Carried Forward under Alts BC and D)



G.3.3I South Fork Eel River ACEC

Table G-36
South Fork Eel River Summary of ACEC Findings

Existing or Proposed	Values Assessed	Relevance Criteria <i>see Section 2.1 for Relevance Criterion</i>	Importance Criteria <i>see Section 2.2 for Importance Criterion</i>	Connectivity Corridor	Threatened and Endangered Species	Critical Habitat	Existing Acres	Proposed Acres Carried Forward
Proposed	Fisheries	2	1 2	Yes	Yes 1,3-5	Yes 1-5	7,157	0
	Wildlife	2	1 2					

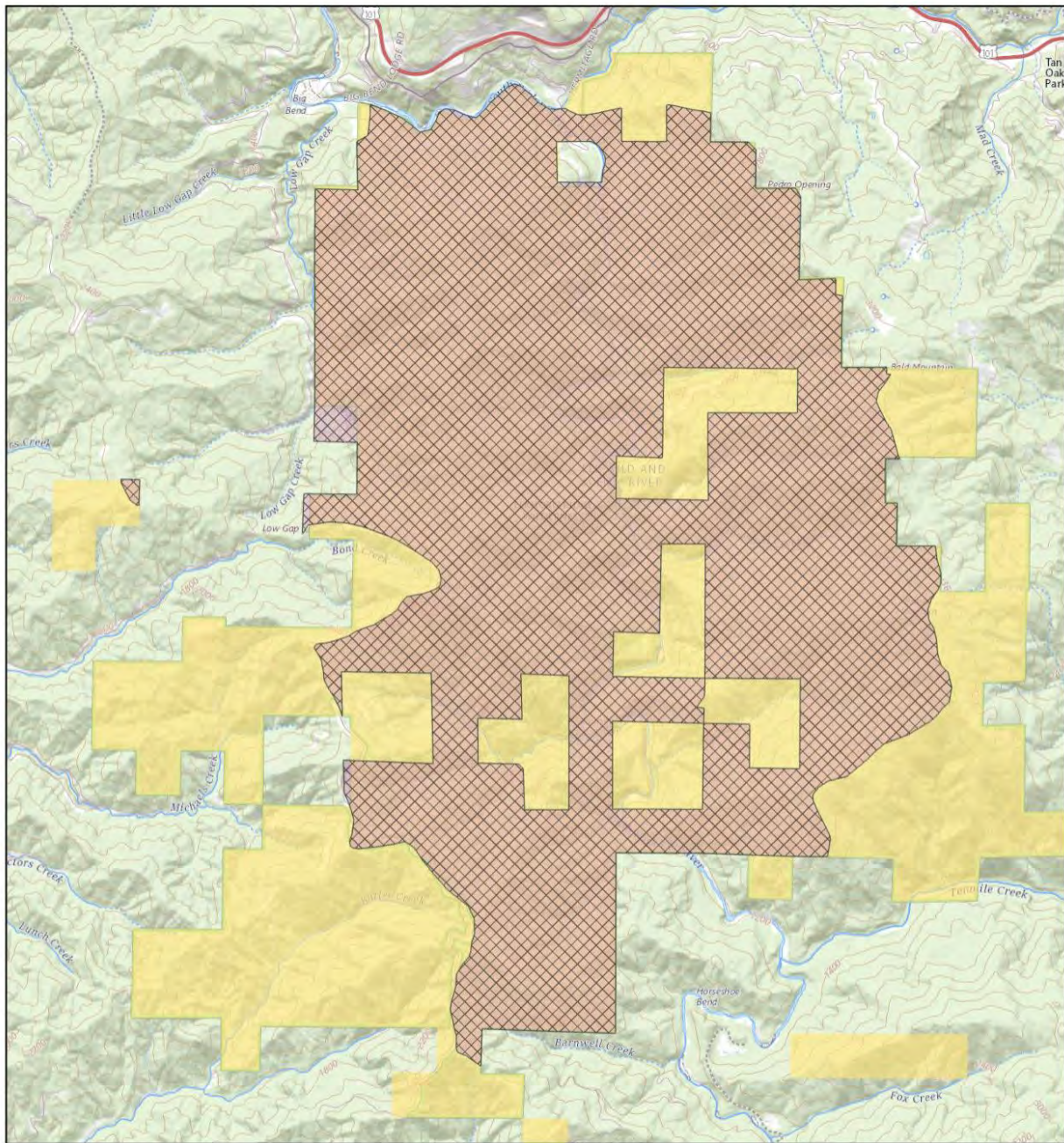
1. The northern spotted owl is listed as threatened under the ESA.
2. The marbled murrelet is listed as threatened under the ESA.
3. Chinook salmon are listed as threatened under the ESA.
4. Coho salmon are listed as threatened under the ESA and CESA.
5. Steelhead are listed as threatened under the ESA.

Rationale for ACEC – Fisheries and Wildlife

The South Fork Eel River ACEC, incorporated into the Elkhorn Ridge Wilderness in 2011, lies between the Red Mountain and Cahto Peak units of the South Fork Eel River Wilderness. While the other wilderness areas were designated in 2006, the Elkhorn Ridge Wilderness was designated 5 years later. As part of the wilderness designation, the process determined that the area had naturally rehabilitated itself and therefore met the conditions to become wilderness.

The original South Fork Eel River ACEC was listed as approximately 7,157 acres and was primarily identified to protect habitat for ESA-threatened Chinook salmon, coho salmon, and steelhead, as well as a Late Successional Reserve forest that provides important habitat for listed species. The resources in the area that was the South Fork Eel River ACEC are now well protected by wilderness designation; it no longer requires special management attention afforded by ACEC designation because the R&I values are protected by the Wilderness designation.

Figure G-37
South Fork Eel River (Existing) (Not Carried Forward under Alts B, C and D)



0 1
 Mile

NCIP ACECs
 Not Carried Forward

Planning Area Boundary
 ACECs (All)

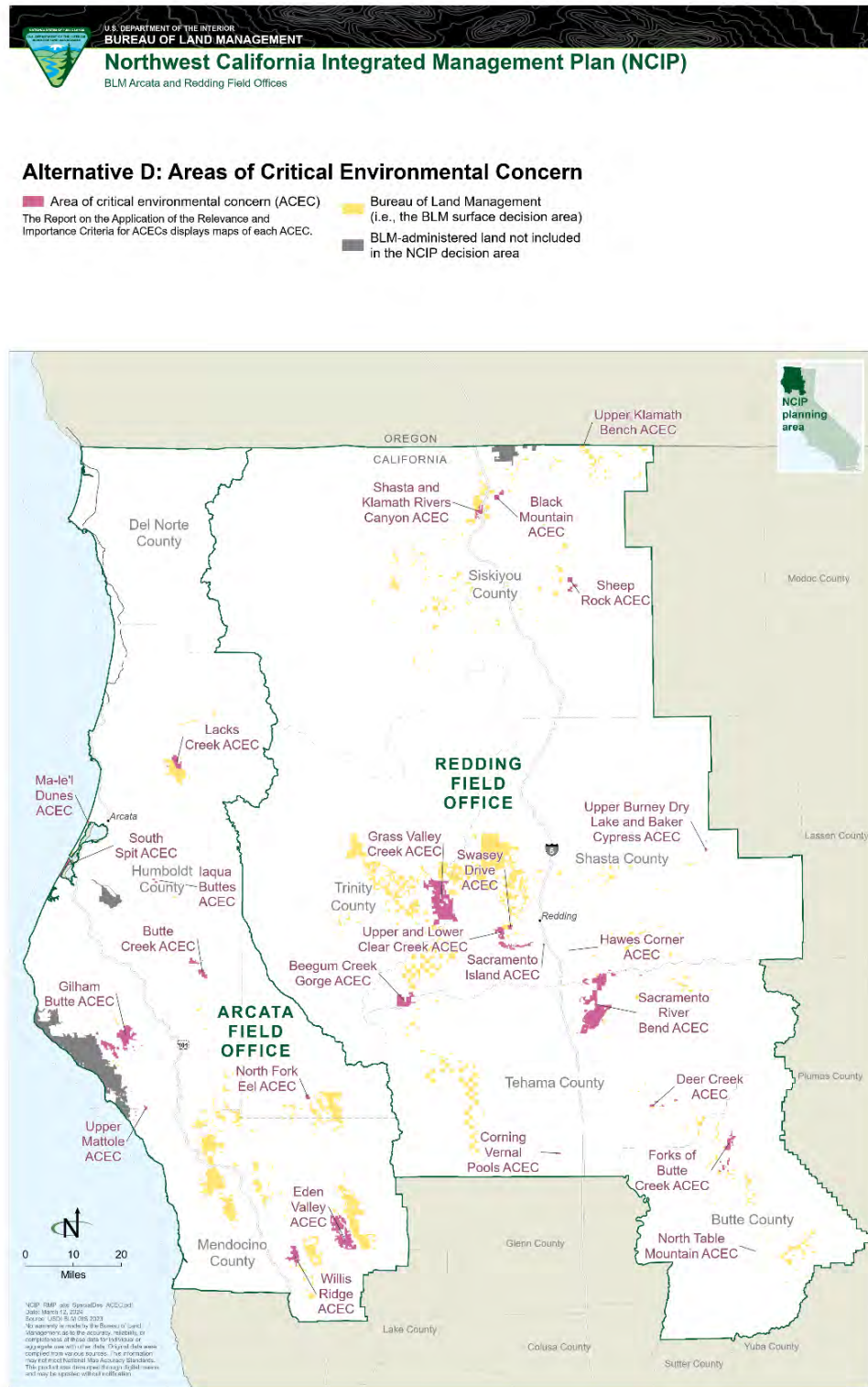
ACECs (Not Carried Forward)
 BLM Lands (NCIP)



South Fork Eel River ACEC

G.4 SUMMARY OF FINDINGS

Figure G-38
NCIP ACEC Overview Map



G.4.1 Summary of Findings

This chapter summarizes the findings of the ACEC evaluations. **Table G-37**, Summary of ACECs Under Proposed Alternative, summarizes the existing and nominated ACECs that were evaluated and whether the relevance and importance criteria were met. 26 ACECs were found to meet both the R&I criteria and are displayed in Figure 3539 NCIP ACEC Overview Map above.

These 26 ACECs will be carried forward into the alternatives for the Proposed RMP. Their evaluations demonstrated that they met the R&I criteria for at least one resource. The third requirement for ACEC designation, special management attention, is addressed in the range of alternatives in **Table B-1** of **Appendix B** in the Final EIS and analyzed for impacts in **Appendix D** (summarized in Chapter 3). Additionally, as shown in the range of alternatives, the acreages of the ACECs may change, as determined by the special management attention required for the ACEC resource. The size and management prescriptions for each ACEC may vary by alternative to reflect a balance between the goals and objectives of the alternative and values being protected (BLM Manual 1613.22.B.1- 2).

There were no areas or nominations that did not meet the R&I criteria. However, Swasey Clear Creek Greenway ACEC is not being carried forward for evaluation in the RMP as it was nominated, but all or portions of the nomination may be included in other areas being carried forward for analysis in the RMP.

The table below summarizes the findings for each existing and nominated area.

Table G-37
Summary of ACECs Under Proposed Alternative

Name/Area	Existing or Nominated	Meets Relevance and Importance Criteria?	Existing Size (acres)	Acres Carried Forward in the Final EIS Proposed Alternative
Upper Burney Dry Lake and Baker Cypress ACEC	Existing	Yes	141	209
Butte Creek ACEC	Existing	Yes	2,254	2,254
Deer Creek ACEC	Existing	Yes	567	567
Forks of Butte Creek ACEC	Existing	Yes	2,900	2,900
Gilham Butte ACEC	Existing	Yes	2,621	9,328
Hawes Corner ACEC	Existing	Yes	38	38
Iaqua Butte ACEC	Existing	Yes	1,112	1,111
Lacks Creek ACEC	Existing	Yes	7,479	2,141
Male'l Dunes ACEC (Previously Manila Dunes ACEC)	Existing	Yes	150	180
Sacramento Island	Existing	Yes	91	91
Sacramento River Bend ACEC	Existing	Yes	18,596	20,418
Shasta and Klamath River Canyon ACEC	Existing	Yes	1,207	1,270
Swasey Drive ACEC	Existing	Yes	468	468
Grass Valley Creek ACEC	Nominated	Yes	0	19,560

Name/Area	Existing or Nominated	Meets Relevance and Importance Criteria?	Existing Size (acres)	Acres Carried Forward in the Final EIS Proposed Alternative
Upper and Lower Clear Creek ACEC	Nominated	Yes	0	4,558
Swasey Clear Creek Greenway	Nominated	Yes	0	0
Sheep Rock ACEC	Nominated	Yes	0	1,410
Black Mountain ACEC	Nominated	Yes	0	1,114
Upper Klamath Bench ACEC	Nominated	Yes	0	89
Upper Mattole ACEC	Nominated	Yes	0	459
Eden Valley ACEC	Nominated	Yes	0	10,807
Beegum Creek Gorge ACEC	Nominated	Yes	0	4,337
North Fork Eel ACEC	Nominated	Yes	0	500
Willis Ridge ACEC	Nominated	Yes	0	3,184
South Spit ACEC	Nominated	Yes	0	888
Corning Vernal Pools ACEC	Nominated	Yes	0	173
North Table Mountain ACEC	Nominated	Yes	0	53

G.5 LIST OF PREPARERS

Name	Title	Role
Natasha Braziel	Planning and Environmental Specialist (Redding)	Planning and NEPA
Chad Endicott	Planning and Environmental Specialist (Redding)	Planning and NEPA
Tory Callahan (Victoria Slaughter)	Planning and Environmental Specialist (Arcata)	Planning and NEPA
Alden Neel	Assistant Field Manager (Redding)	Cultural and Natural Resources
Jennifer Wheeler	Assistant Field Manager (Arcata)	Lands & Realty, Recreation, Operations, and GIS
Laura Brodhead	Assistant Field Manager (Redding)	Lands & Realty, Recreation, Operations, and GIS
Dan Wooden	Assistant Field Manager (Arcata)	Resources
Paul Fritze	GIS Specialist (Arcata)	GIS
Andrew Suppiger	GIS Specialist (Redding)	GIS
Brooke Thompson	Ecologist (Redding)	Vegetation (including wetlands and riparian areas; nonnative, invasive species; special status species; and vegetation products)
Crystal Welch	Ecologist (Arcata)	Livestock Grazing; Vegetation (including wetlands and riparian areas; nonnative, invasive species; special status species; and vegetation products)
David Anthon	Wildlife Biologist (Arcata)	Wildlife/Special Status Species

Name	Title	Role
Devonie Plummer	Range Management Specialist (Redding)	Livestock Grazing
Eric Ritter	Archaeologist (Redding)	Cultural Resources; Socioeconomics; National Historic Trails; Cave and Karst Resources; Tribal Interests
Lowell Thomas	Archaeologist (Redding)	Cultural Resources; Socioeconomics; Tribal Interests
Sara Balmuth	Archaeologist (Redding)	Cultural Resources
Heidi Rogers	Forester (Redding)	Forestry
Jess Paoli	Forester (Redding)	Forestry
Kody Shellhouse	Geologist (Redding)	Air Quality/Climate and Greenhouse Gases; Water Resources; Minerals; Paleontology
Sam Flanagan	Geologist (Arcata)	Air Quality/Climate and Greenhouse Gases; Coastal Resource Management; Water Resources; Minerals; Paleontology
Marissa Vossmer	Forester (Arcata)	Forestry
Samantha Gillette	Wildlife Biologist (Redding)	Wildlife/Special Status Species
Tobias Felbeck	Wildlife Biologist (Redding)	Wildlife/Special Status Species
Steve Laymon	Wildlife Biologist (Redding)	Wildlife/Special Status Species
Joseph (Zane) Ruddy	Fish Biologist (Arcata)	Fish and Aquatic Species/Special Status Species
Lauren Alvares	Fish Biologist (Redding)	Fish and Aquatic Species/Special Status Species

G.6 REFERENCES

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Appendix H

Recreation and Visitor Services
Management Framework for Special and Extensive
Recreation Management Areas

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TABLE OF CONTENTS

Chapter

Page

APPENDIX H. RECREATION AND VISITOR SERVICES MANAGEMENT FRAMEWORK FOR SPECIAL AND EXTENSIVE RECREATION MANAGEMENT AREAS H-I

H.1	Introduction	H-1
H.2	Key Recreation Planning Terms and Definitions.....	H-1
H.2.1	Special Recreation Management Area	H-1
H.2.2	Extensive Recreation Management Area	H-2
H.2.3	Other Key Terms and Definitions.....	H-2
H.3	Supporting Management Action and Allowable Use Decisions.....	H-2
H.4	Best Management Practices.....	H-4
H.5	Summary of Existing and Proposed Recreation Management Areas by Alternative	H-4
H.5.1	Special Recreation Management Areas.....	H-4
H.5.2	Extensive Recreation Management Areas.....	H-5
H.6	Special Recreation Management Areas.....	H-6
H.6.1	Chappie-Shasta OHV Area SRMA	H-7
H.6.2	Redding Trails SRMA	H-12
H.6.3	Clear Creek RMZ (2,600 acres)	H-19
H.6.4	Mule Mountain RMZ (2,900 Acres).....	H-23
H.6.5	Community Trails RMZ (4,400 acres).....	H-28
H.6.6	Iron Mountain Target Shooting Area SRMA.....	H-32
H.6.7	Samoa Dunes SRMA (190 acres)	H-37
H.7	Extensive Recreation Management Areas.....	H-42
H.7.1	Redding Trails ERMA	H-42
H.7.2	Swasey ERMA	H-47
H.7.3	Lacks Creek ERMA	H-50
H.7.4	Forks of Butte Creek ERMA.....	H-52
H.7.5	Samoa Dunes ERMA	H-55
H.7.6	Trinity River ERMA	H-57
H.7.7	Ewing Area ERMA	H-59
H.7.8	Ma-le'l Dunes ERMA	H-61
H.7.9	Mike Thompson Wildlife Area ERMA	H-63
H.7.10	Sacramento River Bend ERMA.....	H-66
H.7.11	Weaverville Community Forest ERMA.....	H-69

TABLES	Page
H-1 Chappie-Shasta OHV SRMA, Physical Recreation Setting Characteristics	H-10
H-2 Chappie-Shasta OHV SRMA Social Recreation Setting Characteristics	H-11
H-3 Chappie-Shasta OHV SRMA Operational Recreation Setting Characteristics	H-12
H-4 Sacramento River Rail Trail and Keswick Reservoir RMZ, Physical Recreation Setting Characteristics	H-16
H-5 Sacramento River Rail Trail and Keswick Reservoir RMZ Social Recreation Setting Characteristics	H-17
H-6 Sacramento River Rail Trail and Keswick Reservoir RMZ Operational Recreation Setting Characteristics	H-18
H-7 Clear Creek RMZ, Physical Recreation Setting Characteristics	H-20
H-8 Clear Creek RMZ Social Recreation Setting Characteristics	H-21
H-9 Clear Creek RMZ Operational Recreation Setting Characteristics	H-22
H-10 Mule Mountain RMZ, Physical Recreation Setting Characteristics	H-25
H-11 Mule Mountain RMZ Social Recreation Setting Characteristics	H-26
H-12 Mule Mountain RMZ Operational Recreation Setting Characteristics	H-27
H-13 Community Trails RMZ, Physical Recreation Setting Characteristics	H-29
H-14 Community Trails RMZ Social Recreation Setting Characteristics	H-30
H-15 Community Trails RMZ Operational Recreation Setting Characteristics	H-31
H-16 Iron Mountain SRMA, Physical Recreation Setting Characteristics	H-34
H-17 Iron Mountain SRMA Social Recreation Setting Characteristics	H-35
H-18 Iron Mountain SRMA Operational Recreation Setting Characteristics	H-36
H-19 Samoa Dunes SRMA, Physical Recreation Setting Characteristics	H-39
H-20 Samoa Dunes SRMA Social Recreation Setting Characteristics	H-40
H-21 Samoa Dunes SRMA Operational Recreation Setting Characteristics	H-41

FIGURES	Page
1 Chappie-Shasta OHV Area SRMA	H-9
2 Redding Trails SRMA RMZs	H-15
3 Iron Mountain SRMA	H-33
4 Samoa Dunes SRMA	H-38
5 Redding Trails ERMA and Associated RMZs	H-46
6 Swasey ERMA	H-49
7 Lacks Creek ERMA	H-51
8 Forks of Butte Creek ERMA	H-54
9 Samoa Dunes ERMA	H-56
10 Trinity River ERMA	H-58
11 Ewing Area ERMA	H-60
12 Ma'le'i Dunes ERMA	H-62
13 Mike Thompson Wildlife Area ERMA	H-65
14 Sacramento River Bend ERMA	H-68
15 Weaverville Community Forest ERMA	H-70

ACRONYMS AND ABBREVIATIONS

Full Phrase

ACEC	area of critical environmental concern
BMP	best management practice
ERMA	extensive recreation management area
OHV	off-highway vehicle
RMZ	recreation management zone
ROW	right-of-way
RSC	recreation setting characteristics
RUP	recreation use permit
SRMA	special recreation management area
SRP	special recreation permit
USFS	United States Forest Service
VRM	visual resource management
WCF	Weaverville Community Forest
WSR	wild and scenic river

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Appendix H. Recreation and Visitor Services Management Framework for Special and Extensive Recreation Management Areas

H.1 INTRODUCTION

This appendix provides supporting information to recreation and visitor services decisions in the Northwest California Integrated Resource Management Plan and Environmental Impact Statement. Each special recreation management area (SRMA) and extensive recreation management area (ERMA) are detailed below to include management objectives and associated land-use planning and implementation-level actions.

H.2 KEY RECREATION PLANNING TERMS AND DEFINITIONS

H.2.1 Special Recreation Management Area

Definition. Special recreation management areas are areas identified in land use plans to direct recreation funding and personnel to fulfill commitments made to provide specific recreation opportunities. Also sometimes referred to as Recreation Management Zones (RMZ).

Management Focus. Special recreation management areas are managed to protect and enhance a targeted set of activities, experiences, benefits, and desired recreation setting characteristics (RSC). The SRMAs may be subdivided into RMZs to further delineate specific recreation opportunities. Within SRMAs, recreation and visitor services management are recognized as the predominant land management focus, where specific recreation opportunities and RSCs are managed and protected on a long-term basis.

Requirements. The SRMA/RMZs must have measurable, outcome-focused objectives. Supporting management actions and allowable use decisions are required to 1) sustain or enhance recreation objectives, 2) protect the desired RSCs, and 3) constrain uses, including noncompatible recreational activities that are detrimental to meeting recreation or other critical resource objectives (such as objectives for cultural resources or threatened and endangered species).

Outcome Objective. The outcome objective is a clear, measurable, and agreed upon guide for decision making and evaluation of management effectiveness. Objectives must define the specific recreation opportunities (i.e., the activities, experiences, and benefits derived from those experiences) which become the focus of recreation and visitor services management.

Recreation Setting Characteristics are a description of the physical, social, and operational characteristics that define an SRMAs function and condition in the future. The desired RSCs may currently exist and be maintained, or they may be a target or goal outlined in the SRMA and RMZs that may take years to reach. Three recreation setting components and their RSCs are considered:

- The physical qualities of nature and the landscape are defined by remoteness, naturalness, and facilities.
- The social qualities associated with use are defined by group size, contacts, and evidence of use.

- The operational conditions to manage recreation use defined by type of access, visitor services, and management controls.

The BLM describes the RSCs in the land use plan to guide management action and allowable use decisions, and to guide site-specific implementation. Monitoring and evaluation may indicate a need to adjust the RSCs over the life of the plan to meet recreation objectives.

H.2.2 Extensive Recreation Management Area

Definition. An ERMA is an administrative unit that require specific management consideration to address recreation use and demand.

Management Focus. An ERMA is managed to support and sustain the principal recreation activities and the associated qualities and conditions. Management of ERMA areas is similar to the management of other resources and resource uses.

Requirements. An ERMA must have measurable objectives. Supporting management actions and allowable use decisions must facilitate the visitors' ability to participate in outdoor recreation activities and protect the associated qualities and conditions. Non-compatible uses, including some recreation activities, may be restricted, or constrained to achieve interdisciplinary objectives.

Outcome Objectives. The outcome objective must define the recreation activities and the associated qualities and conditions which become the focus for recreation and visitor services.

H.2.3 Other Key Terms and Definitions

Recreation Activity. Common recreation areas activities in the planning area include hunting, fishing, swimming, canoeing, kayaking, whitewater boating, surfing, floating, off-highway vehicle (OHV) use, relaxing, camping, hiking, mountain biking, equestrian use, wildlife viewing, heritage resource viewing, casual mineral collection, and gold panning.

Recreation Use. Common recreation uses are identified by the type of use and visitation numbers. These will vary over time based on societal trends.

Visitation. Estimated by the number of participants and the visitor days.

Visitor Day. A unit of measurement used by federal agencies and represents an aggregate of 12 visitor hours at a site or area.

Special Recreation Permits (SRP). Type of permit needed for commercial, competitive, vending, and organized group activities and events.

Recreation Use Permits (RUP). Type of permit needed for short-term recreation use of specialized sites, facilities, equipment, or services furnished at federal expense. *For example: Douglas City Campground.*

H.3 SUPPORTING MANAGEMENT ACTION AND ALLOWABLE USE DECISIONS

Management actions and allowable use decisions are generally described as land use planning level decisions needed to achieve program objectives or constrain non-compatible land uses. Supporting management action and allowable use decisions are selected in terms of their ability to help achieve the

recreation objectives (i.e., recreation opportunities), maintain or enhance the recreation settings, or guide recreation implementation.

A complete list of supporting management actions and allowable use decisions that affect recreation and visitor's services can be found in **Appendix B**.

Under 43 CFR 8340 Off-Road Vehicles, Subpart 8342.1, the authorized officer shall designate all public lands as either open, limited, or closed to off-road vehicles. All designations shall be based on the protection of the resources of the public lands, the promotion of the safety of all the users of the public lands, and the minimization of conflicts among various uses of the public lands; and in accordance with the following criteria:

- (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
- (b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.
- (c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
- (d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

The application of designation criteria to OHV areas in the planning area for all alternatives is provided below.

Special Area Name	Field Office Location (Redding, Arcata)	Designation (open, limited, or closed)	Applicable Criterion (bullets a-d above)	Rationale
Ma-le'l Dunes ACEC	Arcata	Closed	A,B	Endangered plants, plovers.
Corning Vernal Pools ACEC	Redding	Closed	B	Endangered animal, fairy shrimp.
Upper Klamath Bench ACEC	Redding	Closed	A	Protect prehistoric, historic and Tribal resources.
North Table Mountain ACEC	Redding	Closed	A	Protect rare Butte County golden clover.
Lacks Creek ACEC	Arcata	Limited	A,B	Spotted Owl, Murrelet, Old Growth

Special Area Name	Field Office Location (Redding, Arcata)	Designation (open, limited, or closed)	Applicable Criterion (bullets a-d above)	Rationale
Upper Burney Dry Lake and Baker Cypress ACEC	Redding	Upper Burney Dry Lake portion (26 acres) – Closed Baker Cypress portion (183 acres - Limited)	A,B	Protect rare baker cypress and mountain vernal pool habitat.
Hawes Corner ACES	Redding	Closed	A,B	Protect slender Orcutt grass.
Sacramento Island ACEC	Redding	Closed	A,B	Protect rare riparian habitat and fisheries
Mike Thompson Wildlife Area	Arcata	Limited	A,B	Plovers
All Remaining ACECs	Arcata and Redding	Limited	A,B	Protect habitat and minimize damage to resources.
All Remaining SRMAs and ERMAs	Arcata and Redding	Limited	A,B,C	Protect habitat, minimize damage to resources and reduce recreation conflicts.

H.4 BEST MANAGEMENT PRACTICES

See the Recreation and Visitor Services section of **Appendix F** for Best Management Practices (BMPs) specific to recreation and SRMA/ERMA management.

H.5 SUMMARY OF EXISTING AND PROPOSED RECREATION MANAGEMENT AREAS BY ALTERNATIVE

H.5.1 Special Recreation Management Areas

The following details the SRMAs designated or proposed by alternative.

Alternative A

The following three areas are currently designated as SRMAs (40,190 acres, **Map 2-31** in **Appendix A**).

- Interlake's SRMA (37,800 acres)
- Samoa Dunes SRMA (190 acres)
- Forks of Butte Creek SRMA (2,200 acres)

Alternative B

The following area would be designated as a SRMA (23,800 acres, **Map 2-32** in **Appendix A**) under Alternative B:

- Chappie-Shasta OHV Area SRMA (23,800 acres)

Alternatives C and D (Proposed Action)

The following four areas would be designated as SRMAs (41,790 acres, **Map 2-33 [Alternative C]** in **Appendix A**, and **Map 2-34 [Alternative D]** in **Appendix A**) under the Proposed Action:

- Chappie-Shasta OHV Area SRMA (31,100 acres)
- Redding Trails SRMA (9,900 acres)
 - Clear Creek RMZ (2,600 acres)
 - Mule Mountain RMZ (2,900 acres)
 - Sacramento River Rail Trail and Keswick Reservoir RMZ (30 acres)
 - Community Trails RMZ (4,400 acres)
- Iron Mountain Target Shooting Area SRMA (600 acres)
- Samoa Dunes SRMA (190 acres)

H.5.2 Extensive Recreation Management Areas

The following details the ERMAs designated or proposed for designated by alternative.

Alternative A

There are currently no designated ERMAs.

Alternative B

The following areas would be designated as ERMAs under Alternative B (21,790 acres, **Map 2-32** in **Appendix A**):

- Redding Trails ERMA (9,900 acres)
 - Clear Creek RMZ (2,580 acres)
 - Mule Mountain RMZ (2,900 acres)
 - Sacramento River Rail Trail and Keswick Reservoir RMZ (30 acres)
 - Community Trails RMZ (4,400 acres)
- Swasey ERMA (500 acres)
- Lacks Creek ERMA (9,000 acres)
- Samoa Dunes ERMA (190 acres)
- Forks of Butte Creek ERMA (2,200 acres)

Alternative C

The following nine areas would be designated as ERMAs under Alternative C (45,980 acres, **Map 2-33** in **Appendix A**):

- Lacks Creek ERMA (9,000 acres)
- Swasey ERMA (500 acres)
- Sacramento River Bend ERMA (20,400 acres)
- Trinity River ERMA (9,500 acres)
- Ewing Area ERMA (1,000 acres)
- Weaverville Community Forest ERMA (3,100 acres).
- Ma-le'l Dunes ERMA (180 acres)

- Forks of Butte Creek ERMA (2,200 acres)
- Mike Thompson Wildlife Area, South Spit, Humboldt Bay ERMA (if the area becomes federally managed) (600 acres)

Alternative D

The following eight areas would be designated as ERMA's under Alternative D (45,380 acres, **Map 2-34** in **Appendix A**):

- Lacks Creek ERMA (9,000 acres)
- Swasey ERMA (500 acres)
- Sacramento River Bend ERMA (20,400) acres)
- Trinity River ERMA (9,500 acres)
- Ewing Area ERMA (1,000 acres)
- Weaverville Community Forest ERMA (3,100 acres).
- Ma-le'i Dunes ERMA (180 acres)
- Forks of Butte Creek ERMA (2,200 acres)

H.6 SPECIAL RECREATION MANAGEMENT AREAS

For each SRMA, the BLM has identified supporting information, established objectives, described RSCs, identified management actions and allowable uses, and as necessary, identified implementation decisions. Land use plan level recreation and visitor services objective decisions define intended activities and specific recreation opportunities to be offered. Objectives describe the intended recreation activities, experiences, and benefits derived from those experiences.

Direct recreation funding and personnel to fulfill commitments made to provide specific “structured” recreation opportunities based on outcome-focused management. Designation of SRMAs helps direct recreation program priorities toward areas with high resource values, elevated public concern, or significant amounts of recreational activity. Within a SRMA, recreation and visitor services management is recognized as the predominant land use planning focus. Investments in recreation facilities and visitor services are aimed at reducing resource damage and mitigating user conflicts. The BLM may develop implementation-level plans for SRMAs to further guide management actions and objectives. Supporting management actions and allowable use decisions common to all SRMAs include:

- Throughout the life of the plan and as funding allows, evaluate visitor satisfaction of SRMAs on a five-year basis using such methods as field visits, staff monitoring, and surveys. The objective would be to manage recreation to provide the identified experiences and benefits 75 percent of the time. When this level of satisfaction is not met, management would be implemented as practicable to address issues that are impeding identified experiences and benefits.
- Forestry: Timber harvest, firewood cutting, and special forest product harvest would be allowed if they can be implemented without affecting the desired recreation setting.
- Lands and Realty: All SRMAs would be right-of-way (ROW) avoidance areas and would be retained for long-term management (subject to valid existing rights).
- Minerals: All SRMAs would be closed to salable minerals development and closed to mineral leasing.

- Visual Resource Management (VRM): All SRMAs would be managed under VRM Class III objectives except specific locations where VRM Class II objectives are proposed for special designation areas located within the SRMAs.
- Comprehensive Travel Management: All SRMAs would be classified as OHV Limited, except for Samoa Dunes SRMA, which would be classified as OHV Open.

For further information on other management actions that apply to all SRMAs and ERMA's regardless of Alternative see **Table B-1** in **Appendix B**.

H.6.1 Chappie-Shasta OHV Area SRMA

The Chappie-Shasta OHV Area SRMA would be designated under all action alternatives, although acreages vary slightly by alternatives (see **Section F.5** above). The Chappie-Shasta OHV Area SRMA is located immediately northwest of the City of Redding (**Figure 1**). The SRMA plays an important role in the community's local economy and residents' quality of life. Chappie-Shasta serves as both a popular recreation destination in the Redding area and a conveniently close daily riding area for local OHV users. This area provides outstanding opportunities for rock crawling, 4x4 driving, OHV riding, and motorcycle riding on more than 200 miles of roads and trails. Located within the rugged southern portions of the Klamath Mountain Range, offering beautiful vistas of the surrounding natural features, such as Mount Shasta, Mount Lassen, the Trinity Alps, and Shasta Lake.

The Chappie-Shasta OHV Area SRMA borders Clear Creek to the west and Shasta Lake and Keswick Reservoir to the east. Elevations range from 1000 to 5000 feet and vegetation ranges from chaparral to mixed conifer. This area serves as a regional asset for managed OHV recreation opportunities. Targeted outcomes include family/group togetherness, skill development, and risk taking and adventure. Community benefits include economic development from outdoor recreation tourism and serving as an attraction for living/re-locating to the area.

Outcome Objective

Participants in visitor assessments report on average 4.0 realization of the targeted experience and benefit outcomes listed below (where 1 = Not at all realized and 5 = totally realized).

Activities	Experiences	Benefits
<ul style="list-style-type: none"> • 4x4 Driving • OHV riding, motorcycle riding • Camping • Permitted competitive or commercial OHV events. 	<ul style="list-style-type: none"> • Developing skills and abilities • Enjoying adventure • Enjoying friends and family togetherness • Enjoying learning and teaching outdoor skills • Enjoying access to natural landscapes. 	<ul style="list-style-type: none"> • Greater sense of adventure • Stronger ties with family and friends • Improved skills for enjoying the outdoors. • Lifestyle improvement or maintenance • Greater community involvement • Maintain local tourism. • Increased desirability as a place to live.

Management Actions and Allowable Use Decisions

- Provide a regional opportunity for motorized recreation.
- Acquire available lands that expand legal public access to adjoining public lands, complete segments of recreational trails, enhance protection of sensitive resources, provide opportunities for public interpretation, enhance reforestation efforts (including habitat improvement for sensitive species), or enhance long-term administration of the area.
- Develop a trail management plan to provide for the maintenance of existing trails and the expansion of the trail network to provide for additional OHV recreational opportunities, decrease user density, increased variety of difficulty levels, and separate different motorized user groups (including loop trails and trails to scenic or unique areas). This would be completed at the implementation level and would be analyzed and disclosed through site-specific NEPA analysis.
- Prioritize development of parking lots at trailheads.
- In the Chappie/Shasta OHV Area SRMA, camping would be limited to 14 days per 4-month period.

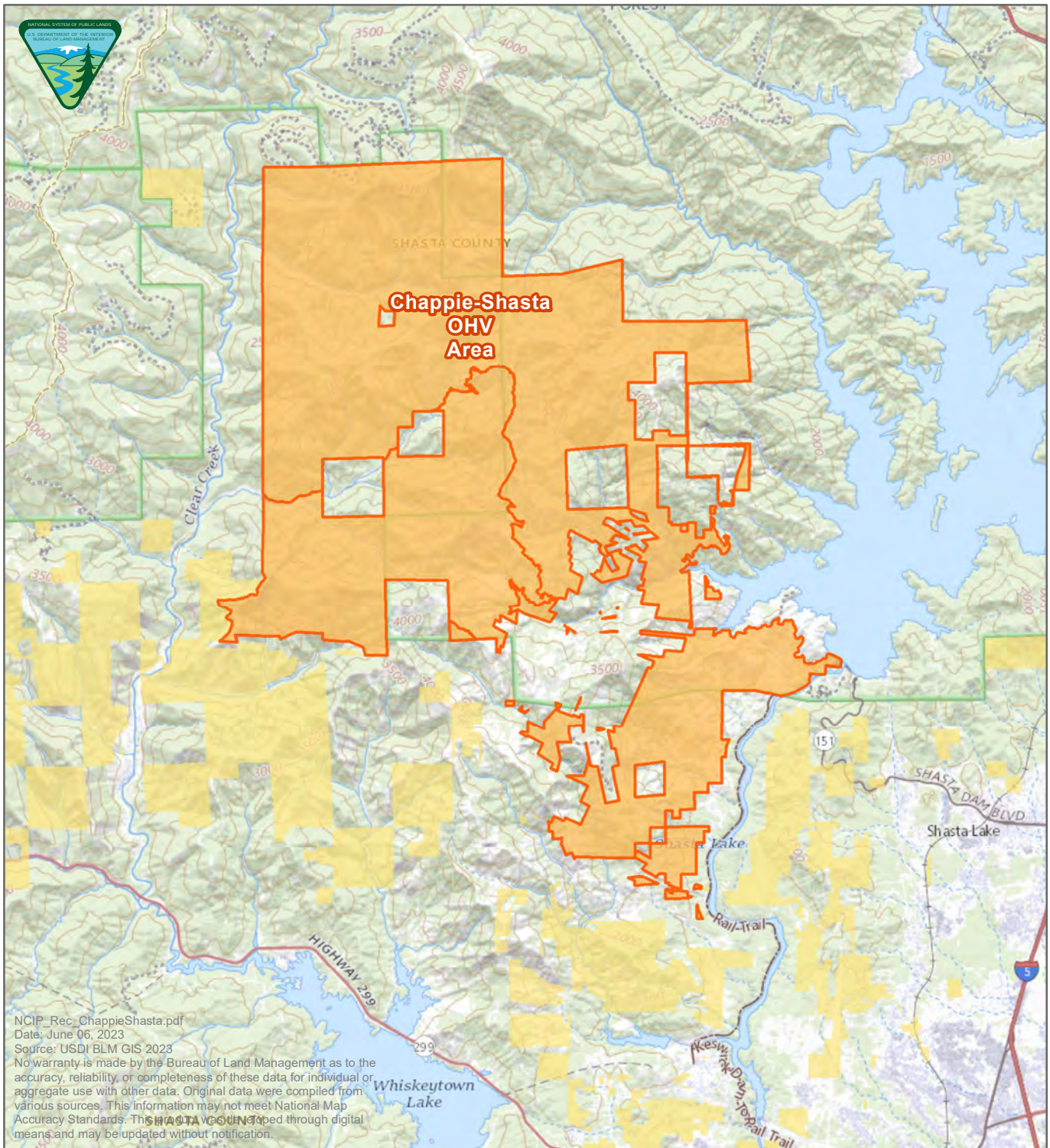


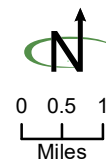


Figure 1: Chappie-Shasta OHV Area SRMA

-  Proposed special recreation management area (SRMA)
-  Bureau of Land Management



Physical, Social, and Operational Recreation Setting Characteristics

**Table H-1
Chappie-Shasta OHV SRMA, Physical Recreation Setting Characteristics**

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Remoteness (H-10 approx.. distance from routes) – Over time, class acreages may change but all classes still exist					
More than 0.5 miles from either mechanized or motorized routes	Within 0.5 miles of mechanized routes	Within 0.5 miles of four-wheel-drive vehicle, all-terrain vehicle, and motorcycle routes.	Within 0.5 miles of low-clearance or passenger vehicle routes (includes unpaved County roads and private land routes)	Within 0.5 miles of paved/primary roads and highways	Within 0.5 miles of streets and roads within municipalities and along highways
Naturalness (landscape texture form, line, color) – No new ROWs or fluid or locatable mineral development. Manage as No Surface Occupancy.					
Undisturbed natural landscape	Natural landscape with any modifications in harmony with surroundings and not visually obvious or evident (for example, stock ponds and trails)	Character of the natural landscape retained; a few modifications contrast with character of the landscape (for example, fences and primitive roads)	Character of the natural landscape partially modified, but none overpower natural landscape (for example, roads, structures, and utilities)	Character of the natural landscape considerably modified (agriculture, residential, or industrial)	Urbanized developments dominate landscape
Visitor Facilities – Maintain rustic facilities. Camping designated to dispersed sites along 2.7 miles of Thirteen Mile Loop.					
No structures; foot/horse trails only	Developed trails made mostly of native materials such as log bridges; structures are rare and isolated	Maintained and marked trails, simple trailhead developments, and basic toilets	Rustic facilities such as campsites, restrooms, trailheads, and interpretive displays	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits.	Elaborate full-service facilities such as laundries, restaurants, and groceries

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions	

Table H-2
Chappie-Shasta OHV SRMA Social Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Contacts (with other groups) – Participants encounter a primary use season (October through May) average of up to 14 encounters/day in areas classified as middle country and encounter an average of up to 29 encounters/day in areas classified as front country.					
Fewer than 3 encounters per day at camp sites and fewer than 6 encounters per day on travel routes	3–6 encounters per day off travel routes (for example, campsites) and 7–15 encounters per day on travel routes	7–14 encounters per day off travel routes (for example, staging areas) and 15–29 encounters per day on travel routes	15–29 encounters per day off travel routes (for example, campgrounds) and 30 or more encounters per day on travel routes.	People seem to be generally everywhere	Busy place with other people constantly in view
Group Size – Away from trailheads, participants encounter a primary use season (Mid-April through October) average of up to 9 people per group in areas classified as back country and up to 12 people per group in areas classified as middle country					
Fewer than or equal to 3 people per group	4–6 people per group	7–12 people per group	13–25 people per group	26–50 people per group	Greater than 50 people per group.
Evidence of Use – Localized areas of vegetation alteration and compacted/bare soils are found along trails and at trailheads. Inappropriate recreation use is rehabilitated					
No alteration of the natural terrain; footprints only observed; sounds of people rare	Areas of alteration uncommon; little surface vegetation wear observed; sounds of people infrequent	Small areas of alteration; surface vegetation showing wear with some bare soils sounds of people occasionally heard	Small areas of alteration prevalent; surface vegetation gone with compacted soils observed; sounds of people regularly heard	A few large areas of alteration; surface vegetation absent with hardened soils; sounds of people frequently heard	Large areas of alteration prevalent; some erosion; constantly hear people

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions	

Table H-3
Chappie-Shasta OHV SRMA Operational Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Public Access (types of public travel allowed) – Off-road vehicle use is predominant in the RMZ and motorized use is limited to designated motorized routes, with a 25-mph speed limit throughout.					
Nonmotorized travel (for example, foot and horse travel)	Nonmotorized travel (for example, mountain bikes)	Four-wheel-drive vehicles, all-terrain vehicles, and dirt bikes, in addition to nonmotorized, mechanized use	Two-wheel-drive vehicles are predominant, but also four-wheel-drive vehicles and nonmotorized, mechanized use	Ordinary highway auto and truck traffic is characteristic	Wide variety of street vehicles and highway traffic is ever-present
Visitor Services and information – Informational materials describe the SRMA and recreation opportunities. BLM staff/volunteers are periodically present at recreation sites but occasionally present away from recreation sites.					
No maps or brochures available on-site; staff rarely present to provide on-site assistance	Basic maps; staff infrequently present (for example, seasonally or during high-use periods) to provide on-site assistance	Area brochures and maps; staff occasionally present (for example, most weekends) to provide on-site assistance	Information materials describe recreation areas and activities; staff periodically present (for example, on weekdays and weekends)	Information materials describe recreation areas and activities, plus experience and benefit descriptions; staff regularly present (for example, almost daily)	Information materials describe recreation areas and activities, plus regularly scheduled on-site outdoor demonstrations and clinics
Management Controls and Regulations- Some regulatory and ethics signing; moderate use restrictions					
No on-site posting or signing of visitor regulations, interpretive information, or ethics; few use restrictions	Basic user regulations at key access points; minimum use restrictions	Some regulatory and ethics signing; moderate use restrictions (for example, camping and human waste)	Rules, regulations, and ethics clearly posted; use restrictions, limitations, and/or closures	Regulations strict and ethics prominent; use may be limited by permit, reservation, or other methods	Enforcement in addition to rules to reduce conflicts, hazards, and resource damage

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions	

H.6.2 Redding Trails SRMA

The Redding Trails SRMA (9,900 acres) would be designated under Proposed Action. The Redding Trails area is comprised of four RMZs to include the Sacramento Rail Trail and Keswick Reservoir, Clear Creek, Mule Mountain Recreation Area, and Community Trails (**Figure 2**). The Redding Trails SRMA is often intermixed with lands under Bureau of Reclamation jurisdiction; where BLM assists with recreation management on Bureau of Reclamation lands, the BLM will use the SEMA guidance to direct management actions. The Redding Trails SRMA is a composite network of approximately 100 miles of non-motorized,

multi-use trail. Hiking, trail running, mountain biking, and horseback riding are all popular activities, as well as swimming and nature viewing. The trail system is continuously evolving with an emphasis on connectivity and diversity in recreational opportunities for residents and visitors to the city of Redding. The trail system works in conjunction with trails maintained by Whiskeytown National Recreation Area, Horsetown Clear Creek Preserve, and City of Redding, further expanding the recreational opportunities. The SRMA's emphasis for connectivity inherently promotes partnerships and stewardship of public lands with neighboring land agencies and owners.

Trails frequently follow alongside creeks and utilize land features that provide for a sense of immersion in the natural environment, allowing one to feel away from roads and urban features within a mile of most trailheads. Trails may be utilized for commutes and have the potential of developing more to this purpose. The area considered for inclusion in the Redding Trails SRMA is expansive, aiming to provide opportunity for trail system enhancement.

Management actions associated with the entire SRMA include:

- Acquire available lands that provide legal public access to adjoining public lands, complete segments of recreational trails, enhance protection of sensitive resources, provide opportunities for public interpretation, enhance reforestation efforts (including habitat improvement for sensitive species), or enhance long-term administration of the area.
- Limitations for SRP within all RMZs would be based on level of use and potential for resource impact. BLM would monitor recreational conflict and resource impacts and would limit permits as necessary to maintain long-term resource sustainability and desired recreational experience and outcomes.
- Promote a volunteer trail stewardship program.

Sacramento River Rail Trail and Keswick Reservoir RMZ (30 acres)

The Sacramento River Rail Trail and Keswick Reservoir RMZ is located to the west of the Keswick reservoir and the Sacramento River. The primary recreation opportunities are the on the paved Sacramento River Rail Trail and water-based recreation opportunities from the Keswick boat ramp and trailhead. The area connects with and complements the Community Trails RMZ.

Outcome Objective

Objective: Continue to provide paved trail experiences and water-based recreation opportunities along the Sacramento River to encourage quality of life for visitors and socioeconomic opportunities for the community.

Recreation development may be constrained to meet greater stewardship goals for natural and cultural resources.

Participants in visitor assessments report on average 4.0 realization of the targeted experience and benefit outcomes listed below (where 1 = Not at all realized and 5 = totally realized).

Activities	Experiences	Benefits
<ul style="list-style-type: none">• Cycling and biking, hiking and trail running• Motorized and non-motorized water-based activity	<ul style="list-style-type: none">• Developing skills and abilities• Perseverance, exercise, and stress reduction• Enjoying easy access to natural landscapes.	<ul style="list-style-type: none">• Increase self-reliance• Improved mental and physical health• Greater sense of connection to nature and expanded cultural awareness

Management Actions and Allowable Use Decisions

- Commercial fishing SRPs would be evaluated for resource capacity and sustainability.
- Recreational use would be encouraged to promote socioeconomic development and reach social outcomes of greater sense of connection and cultural awareness within the area.
- Work with adjoining landowners to acquire administrative rights to lands as applicable to optimize management for desired recreational outcomes.

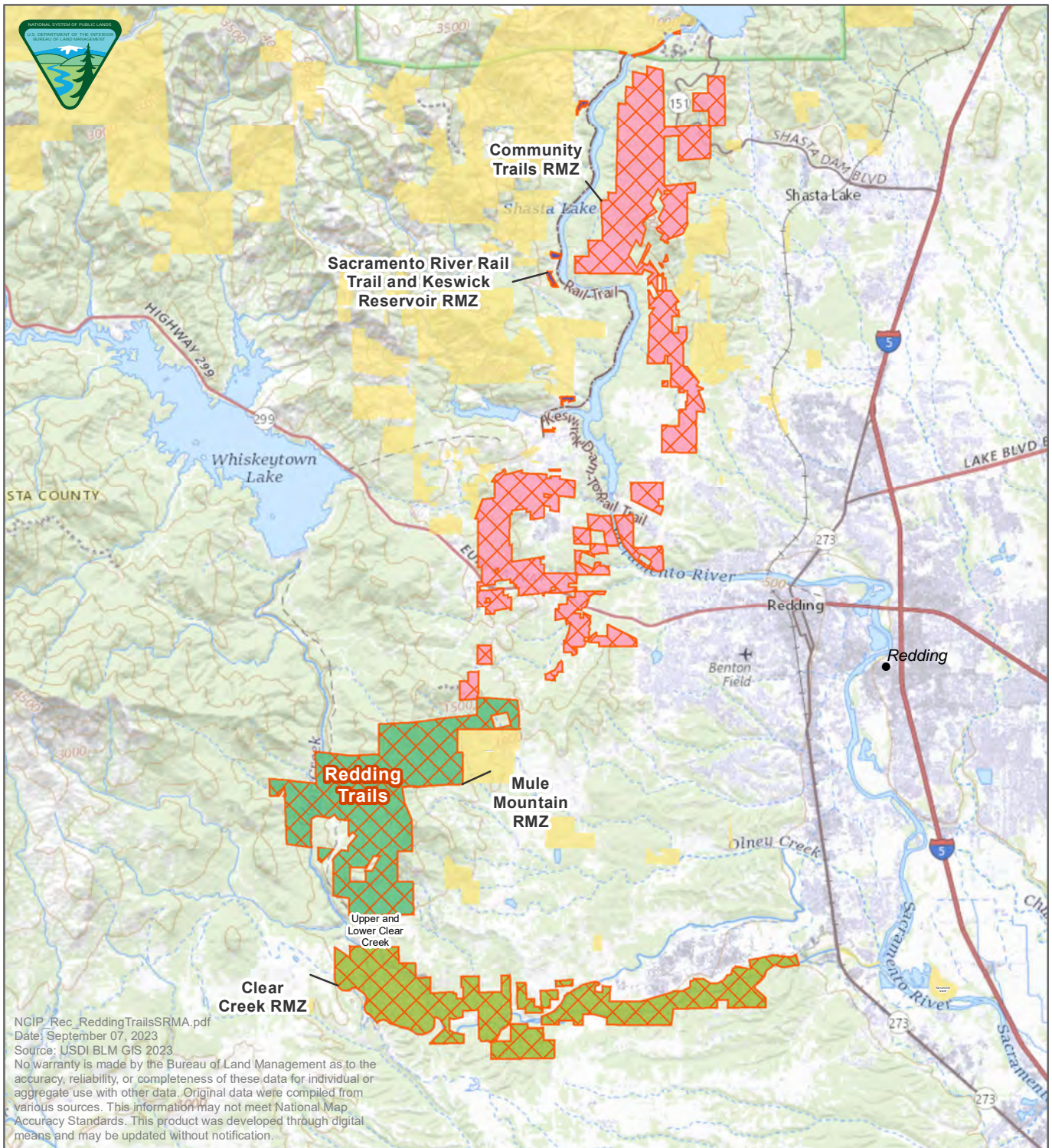


Figure 2: Redding Trails SRMA and Associated RMZs

- Recreation Management Zone (RMZ)
- Clear Creek
 - Community Trails
 - Mule Mountain
 - Sacramento River Rail Trail and Keswick Reservoir
- Proposed special recreation management area (SRMA)
- Bureau of Land Management



Physical, Social, and Operational Recreation Setting Characteristics

**Table H-4
Sacramento River Rail Trail and Keswick Reservoir RMZ, Physical Recreation Setting Characteristics**

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Remoteness (approx.. distance from routes) – Over time, class acreages may change but all classes still exist					
More than 0.5 miles from either mechanized or motorized routes	Within 0.5 miles of mechanized routes	Within 0.5 miles of four-wheel-drive vehicle, all-terrain vehicle, and motorcycle routes.	Within 0.5 miles of low-clearance or passenger vehicle routes (includes unpaved County roads and private land routes)	Within 0.5 miles of paved/primary roads and highways	Within 0.5 miles of streets and roads within municipalities and along highways
Naturalness (landscape texture form, line, color) – No new ROWs or fluid or locatable mineral development. Manage as No Surface Occupancy.					
Undisturbed natural landscape	Natural landscape with any modifications in harmony with surroundings and not visually obvious or evident (for example, stock ponds and trails)	Character of the natural landscape retained; a few modifications contrast with character of the landscape (for example, fences and primitive roads)	Character of the natural landscape partially modified, but none overpower natural landscape (for example, roads, structures, and utilities)	Character of the natural landscape considerably modified (agriculture, residential, or industrial)	Urbanized developments dominate landscape
Visitor Facilities – Maintain rustic facilities. Camping designated to dispersed sites along 2.7 miles of Thirteen Mile Loop.					
No structures; foot/horse trails only	Developed trails made mostly of native materials such as log bridges; structures are rare and isolated	Maintained and marked trails, simple trailhead developments, and basic toilets	Rustic facilities such as campsites, restrooms, trailheads, and interpretive displays	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits.	Elaborate full-service facilities such as laundries, restaurants, and groceries

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions	

**Table H-5
Sacramento River Rail Trail and Keswick Reservoir RMZ Social Recreation Setting Characteristics**

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Contacts (with other groups) – Participants encounter a primary use season (October through May) average of up to 14 encounters/day in areas classified as middle country and encounter an average of up to 29 encounters/day in areas classified as front country.					
Fewer than 3 encounters per day at camp sites and fewer than 6 encounters per day on travel routes	3–6 encounters per day off travel routes (for example, campsites) and 7–15 encounters per day on travel routes	7–14 encounters per day off travel routes (for example, staging areas) and 15–29 encounters per day on travel routes	15–29 encounters per day off travel routes (for example, campgrounds) and 30 or more encounters per day on travel routes	People seem to be generally everywhere	Busy place with other people constantly in view
Group Size – Away from trailheads, participants encounter a primary use season (Mid-April through October) average of up to 9 people per group in areas classified as back country and up to 12 people per group in areas classified as middle country					
Fewer than or equal to 3 people per group	4–6 people per group	7–12 people per group	13–25 people per group	26–50 people per group	Greater than 50 people per group.
Evidence of Use – Localized areas of vegetation alteration and compacted/bare soils are found along trails and at trailheads. Inappropriate recreation use is rehabilitated					
No alteration of the natural terrain; footprints only observed; sounds of people rare	Areas of alteration uncommon; little surface vegetation wear observed; sounds of people infrequent	Small areas of alteration; surface vegetation showing wear with some bare soils sounds of people occasionally heard	Small areas of alteration prevalent; surface vegetation gone with compacted soils observed; sounds of people regularly heard	A few large areas of alteration; surface vegetation absent with hardened soils; sounds of people frequently heard	Large areas of alteration prevalent; some erosion; constantly hear people

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions	

Table H-6
Sacramento River Rail Trail and Keswick Reservoir RMZ Operational Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Public Access (types of public travel allowed) – Off-road vehicle use is predominant in the RMZ and motorized use is limited to designated motorized routes, with a 25-mph speed limit throughout.					
Nonmotorized travel (for example, foot and horse travel)	Nonmotorized travel (for example, mountain bikes)	Four-wheel-drive vehicles, all-terrain vehicles, and dirt bikes, in addition to nonmotorized, mechanized use	Two-wheel-drive vehicles are predominant, but also four-wheel-drive vehicles and nonmotorized, mechanized use	Ordinary highway auto and truck traffic is characteristic	Wide variety of street vehicles and highway traffic is ever-present
Visitor Services and information – Informational materials describe the SRMA and recreation opportunities. BLM staff/volunteers are periodically present at recreation sites but occasionally present away from recreation sites.					
No maps or brochures available on-site; staff rarely present to provide on-site assistance	Basic maps: staff infrequently present (for example, during high-use periods) to provide on-site assistance	Area brochures and maps; staff occasionally present (for example, most weekends) to provide on-site assistance	Information materials describe recreation areas and activities; staff periodically present (for example, on weekdays and weekends)	Information materials describe recreation areas and activities, plus experience and benefit descriptions; staff regularly present (for example, almost daily)	Information materials describe recreation areas and activities, plus regularly scheduled on-site outdoor demonstrations and clinics
Management Controls and Regulations- Some regulatory and ethics signing; moderate use restrictions					
No on-site posting or signing of visitor regulations, interpretive information, or ethics; few use restrictions	Basic user regulations at key access points; minimum use restrictions	Some regulatory and ethics signing; moderate use restrictions (for example, camping and human waste)	Rules, regulations, and ethics clearly posted; use restrictions, limitations, and/or closures	Regulations strict and ethics prominent; use may be limited by permit, reservation, or other methods	Enforcement in addition to rules to reduce conflicts, hazards, and resource damage

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions	

H.6.3 Clear Creek RMZ (2,600 acres)

The Clear Creek RMZ primarily centers around Clear Creek, a suitable creek in the Wild and Scenic River (WSR) system and tributary of the Sacramento River. Clear Creek RMZ offers the Cloverdale trail area in the west of the RMZ with scenic, expansive deep canyon views and multi-use trails. In the eastern portion of the RMZ, the trail accesses the creek and meanders through restored riparian ecosystems, providing outstanding swimming, nature viewing, and trail-based recreation opportunities. The RMZ provides a buffer between the creek corridor and industrial development along Clear Creek Road.

Outcome Objective

Objective: Provide safe, diverse, and sustainable non-motorized trail and water-based recreation opportunities within the riparian corridor of Clear Creek while conserving cultural and natural resources.

Participants in visitor assessments report on average 4.0 realization of the targeted experience and benefit outcomes listed below (where 1 = Not at all realized and 5 = totally realized).

Activities	Experiences	Benefits
<ul style="list-style-type: none">• Day-use access to beaches• Non-motorized trail use emphasizing hiking and trail running• Wildlife viewing	<ul style="list-style-type: none">• Stress reduction, relaxation, and enjoyment• Enjoying easy access to natural landscapes• Exercise options close to home.	<ul style="list-style-type: none">• Improved mental and physical health• Greater sense of connection to others and the natural world

Management Actions and Allowable Use Decisions

- Minimize impacts to wildlife and riparian vegetation when providing and improving access to the creek.
- Improve health and safety in the area through an abundance of education, interpretation, and signage, as well as increased recreation staff, volunteer, and community partner presence.
- Due to the sensitive resource area, optimized mountain bike trail (trails with mountain bike-specific trail features such as berms and jumps) and equestrian only trails would not be allowed.
- SRPs for commercial guided fishing would not be issued.
- Special Recreation Permits (except commercial fishing) and organized groups not requiring a permit would be allowed and encouraged to promote socioeconomic development and reach social outcomes of greater sense of connection and cultural awareness within the area.

Physical, Social, and Operational Recreation Setting Characteristics

Table H-7
Clear Creek RMZ, Physical Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Remoteness (approx.. distance from routes) – Over time, class acreages may change but all classes still exist					
More than 0.5 miles from either mechanized or motorized routes	Within 0.5 miles of mechanized routes	Within 0.5 miles of four-wheel-drive vehicle, all-terrain vehicle, and motorcycle routes.	Within 0.5 miles of low-clearance or passenger vehicle routes (includes unpaved County roads and private land routes)	Within 0.5 miles of paved/primary roads and highways	Within 0.5 miles of streets and roads within municipalities and along highways
Naturalness (landscape texture form, line, color) – No new ROWs or fluid or locatable mineral development. Manage as No Surface Occupancy.					
Undisturbed natural landscape	Natural landscape with any modifications in harmony with surroundings and not visually obvious or evident (for example, stock ponds and trails)	Character of the natural landscape retained; a few modifications contrast with character of the landscape (for example, fences and primitive roads)	Character of the natural landscape partially modified, but none overpower natural landscape (for example, roads, structures, and utilities)	Character of the natural landscape considerably modified (agriculture, residential, or industrial)	Urbanized developments dominate landscape
Visitor Facilities – Maintain rustic facilities. Camping designated to dispersed sites along 2.7 miles of Thirteen Mile Loop.					
No structures; foot/horse trails only	Developed trails made mostly of native materials such as log bridges; structures are rare and isolated	Maintained and marked trails, simple trailhead developments, and basic toilets	Rustic facilities such as campsites, restrooms, trailheads, and interpretive displays	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits.	Elaborate full-service facilities such as laundries, restaurants, and groceries

Existing RSCs	
Existing and Desired RSCs	
Anticipated Potential Conditions	

**Table H-8
Clear Creek RMZ Social Recreation Setting Characteristics**

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Contacts (with other groups) – Participants encounter a primary use season (October through May) average of up to 14 encounters/day in areas classified as middle country and encounter an average of up to 29 encounters/day in areas classified as front country.					
Fewer than 3 encounters per day at camp sites and fewer than 6 encounters per day on travel routes	3–6 encounters per day off travel routes (for example, campsites) and 7–15 encounters per day on travel routes	7–14 encounters per day off travel routes (for example, staging areas) and 15–29 encounters per day on travel routes	15–29 encounters per day off travel routes (for example, campgrounds) and 30 or more encounters per day on travel routes	People seem to be generally everywhere	Busy place with other people constantly in view
Group Size – Away from trailheads, participants encounter a primary use season (Mid-April through October) average of up to 9 people per group in areas classified as back country and up to 12 people per group in areas classified as middle country					
Fewer than or equal to 3 people per group	4–6 people per group	7–12 people per group	13–25 people per group	26–50 people per group	Greater than 50 people per group.
Evidence of Use – Localized areas of vegetation alteration and compacted/bare soils are found along trails and at trailheads. Inappropriate recreation use is rehabilitated					
No alteration of the natural terrain; footprints only observed; sounds of people rare	Areas of alteration uncommon; little surface vegetation wear observed; sounds of people infrequent	Small areas of alteration; surface vegetation showing wear with some bare soils sounds of people occasionally heard	Small areas of alteration prevalent; surface vegetation gone with compacted soils observed; sounds of people regularly heard	A few large areas of alteration; surface vegetation absent with hardened soils; sounds of people frequently heard	Large areas of alteration prevalent; some erosion; constantly hear people

Existing RSCs	
Existing and Desired RSCs	
Anticipated Potential Conditions	

Table H-9
Clear Creek RMZ Operational Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Public Access (types of public travel allowed) – Off-road vehicle use is predominant in the RMZ and motorized use is limited to designated motorized routes, with a 25-mph speed limit throughout.					
Nonmotorized travel (for example, foot and horse travel)	Nonmotorized travel (for example, mountain bikes)	Four-wheel-drive vehicles, all-terrain vehicles, and dirt bikes, in addition to nonmotorized, mechanized use	Two-wheel-drive vehicles are predominant, but also four-wheel-drive vehicles and nonmotorized, mechanized use	Ordinary highway auto and truck traffic is characteristic	Wide variety of street vehicles and highway traffic is ever-present
Visitor Services and information – Informational materials describe the SRMA and recreation opportunities. BLM staff/volunteers are periodically present at recreation sites but occasionally present away from recreation sites.					
No maps or brochures available on-site; staff rarely present to provide on-site assistance	Basic maps; staff infrequently present (for example, seasonally or during high-use periods) to provide on-site assistance	Area brochures and maps; staff occasionally present (for example, most weekends) to provide on-site assistance	Information materials describe recreation areas and activities; staff periodically present (for example, on weekdays and weekends)	Information materials describe recreation areas and activities, plus experience and benefit descriptions; staff regularly present (for example, almost daily)	Information materials describe recreation areas and activities, plus regularly scheduled on-site outdoor demonstrations and clinics
Management Controls and Regulations- Some regulatory and ethics signing; moderate use restrictions					
No on-site posting or signing of visitor regulations, interpretive information, or ethics; few use restrictions	Basic user regulations at key access points; minimum use restrictions	Some regulatory and ethics signing; moderate use restrictions (for example, camping and human waste)	Rules, regulations, and ethics clearly posted; use restrictions, limitations, and/or closures	Regulations strict and ethics prominent; use may be limited by permit, reservation, or other methods	Enforcement in addition to rules to reduce conflicts, hazards, and resource damage

Existing RSCs	
Existing and Desired RSCs	
Anticipated Potential Conditions	

H.6.4 Mule Mountain RMZ (2,900 Acres)

The Mule Mountain RMZ is characterized by steeper, typically longer trails with multiple loop options that connect to trails in the Swasey ERMA. Mountain biking is popular in the RMZ, though hiking, trail running, horseback riding, and casual use metal detection are also common.

Participants in visitor assessments report on average 4.0 realization of the targeted experience and benefit outcomes listed below (where 1 = Not at all realized and 5 = totally realized).

Activities	Experiences	Benefits
<ul style="list-style-type: none"> Primarily mountain biking as well as hiking, trail running, and equestrian use 	<ul style="list-style-type: none"> Mountain bike skill development, endurance and physical fitness Stress reduction Sense of community Expansion of cultural awareness 	<ul style="list-style-type: none"> Improved sense of self-reliance Improved skills for outdoor enjoyment Improved physical and mental health, social cultural enrichment and connection Socioeconomic benefit to the surrounding area through tourism and local engagement

Management Actions and Allowable Use Decisions

- Develop a diverse sustainable trail system serving multiple use needs with a focus on mountain biking.
- Optimized mountain bike trails (trails with mountain bike-specific trail features such as berms and jumps) would be allowed.
- To provide safe trail options for equestrian uses, hiker and equestrian use only trails would be allowable where not in conflict with optimized mountain bike trails.
- Forethought would be given to facilitating multi-use trails, however, mountain biking would be the priority and dominant recreational use.
- Mitigate cumulative impacts of a high demand SRMA near the Swasey ERMA through limitations within the Swasey ERMA, as described above.
- Develop a trail monitoring program to gauge impact to sedimentation and cultural resources.
- Pursue expanding overflow and event parking.
- In the SRMA, pursue trailhead, road, and parking area improvements and expansions as necessary to meet user needs and with consideration of the management of the adjoining area of critical environmental concern (ACEC).
- Provide recreational opportunities to encourage socioeconomic development and reach social outcomes of greater sense of connection and cultural awareness within the area.
- Limitations to SRPs and otherwise authorized uses would be implemented if monitoring indicates adverse impacts to cultural or natural resources in the area. These potential future limitations could include:
 - Limitations on group size.
 - Limitations of number of groups annually.
 - Closure of impacted areas to organized events
- Capacity levels would be considered in subsequent implementation level planning if needed.

- There would be no limitations on spectating during competitive SRP events, unless future site-specific implementation planning determines a need for it.
- To maintain an accessible environment, the number of events would be balanced with public demand during peak season.
- Provide visitor services to orient users to the mountain bike specific area, promote responsible recreation, educate about cultural resource values, address specific user group needs, and reduce user conflicts.
- Provide information on mountain bike difficulty level, ratings, skill requirements and safety through all platforms.
- Maintain trails and close user-made trails. Provide trail map that is clear to facilitate ease of use and awareness of trail location and type.
- Visitor Services would include extensive development of etiquette, guidance, and policy signage. Such information would focus on cultural heritage and recreational uses within the and Mule Mountain RMZ.
- Promote the area in coordination with the City of Redding and other partners.
- Plan for providing cultural and natural resource information throughout the SRMA, ensuring adequate coverage of resource topics and points of cultural interests to be covered.
- Provide developed camping opportunities in the area. The recreation area would be day use only.
- Recreation area would be day use only.
- Explore expanded amenity fee camping in the area, for example along Mule Mountain Road. Consider developing a small campground along Mule Mountain Road with fee amenities.

Physical, Social, and Operational Recreation Setting Characteristics

**Table H-10
Mule Mountain RMZ, Physical Recreation Setting Characteristics**

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Remoteness (approx. distance from routes) – Over time, class acreages may change but all classes still exist					
More than 0.5 miles from either mechanized or motorized routes	Within 0.5 miles of mechanized routes	Within 0.5 miles of four-wheel-drive vehicle, all-terrain vehicle, and motorcycle routes.	Within 0.5 miles of low-clearance or passenger vehicle routes (includes unpaved County roads and private land routes)	Within 0.5 miles of paved/primary roads and highways	Within 0.5 miles of streets and roads within municipalities and along highways
Naturalness (landscape texture form, line, color) – No new ROWs or fluid or locatable mineral development. Manage as No Surface Occupancy.					
Undisturbed natural landscape	Natural landscape with any modifications in harmony with surroundings and not visually obvious or evident (for example, stock ponds and trails)	Character of the natural landscape retained; a few modifications contrast with character of the landscape (for example, fences and primitive roads)	Character of the natural landscape partially modified, but none overpower natural landscape (for example, roads, structures, and utilities)	Character of the natural landscape considerably modified (agriculture, residential, or industrial)	Urbanized developments dominate landscape
Visitor Facilities – Maintain rustic facilities. Camping designated to dispersed sites along 2.7 miles of Thirteen Mile Loop.					
No structures; foot/horse trails only	Developed trails made mostly of native materials such as log bridges; structures are rare and isolated	Maintained and marked trails, simple trailhead developments, and basic toilets	Rustic facilities such as campsites, restrooms, trailheads, and interpretive displays	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits.	Elaborate full-service facilities such as laundries, restaurants, and groceries

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions	

Table H-11
Mule Mountain RMZ Social Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Contacts (with other groups) - Participants encounter a primary use season (October through May) average of up to 14 encounters/day in areas classified as middle country and encounter an average of up to 29 encounters/day in areas classified as front country.					
Fewer than 3 encounters per day at camp sites and fewer than 6 encounters per day on travel routes	3–6 encounters per day off travel routes (for example, campsites) and 7–15 encounters per day on travel routes	7–14 encounters per day off travel routes (for example, staging areas) and 15–29 encounters per day on travel routes	15–29 encounters per day off travel routes (for example, campgrounds) and 30 or more encounters per day on travel routes	People seem to be generally everywhere	Busy place with other people constantly in view
Group Size - Away from trailheads, participants encounter a primary use season (Mid-April through October) average of up to 9 people per group in areas classified as back country and up to 12 people per group in areas classified as middle country					
Fewer than or equal to 3 people per group	4–6 people per group	7–12 people per group	13–25 people per group	26–50 people per group	Greater than 50 people per group.
Evidence of Use - Localized areas of vegetation alteration and compacted/bare soils are found along trails and at trailheads. Inappropriate recreation use is rehabilitated					
No alteration of the natural terrain; footprints only observed; sounds of people rare	Areas of alteration uncommon; little surface vegetation wear observed; sounds of people infrequent	Small areas of alteration; surface vegetation showing wear with some bare soils sounds of people occasionally heard	Small areas of alteration prevalent; surface vegetation gone with compacted soils observed; sounds of people regularly heard	A few large areas of alteration; surface vegetation absent with hardened soils; sounds of people frequently heard	Large areas of alteration prevalent; some erosion; constantly hear people

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions	

Table H-12
Mule Mountain RMZ Operational Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Public Access (types of public travel allowed) – Off-road vehicle use is predominant in the RMZ and motorized use is limited to designated motorized routes, with a 25-mph speed limit throughout.					
Nonmotorized travel (for example, foot and horse travel)	Nonmotorized travel (for example, mountain bikes)	Four-wheel-drive vehicles, all-terrain vehicles, and dirt bikes, in addition to nonmotorized, mechanized use	Two-wheel-drive vehicles are predominant, but also four-wheel-drive vehicles and nonmotorized, mechanized use	Ordinary highway auto and truck traffic is characteristic	Wide variety of street vehicles and highway traffic is ever-present
Visitor Services and information - Informational materials describe the SRMA and recreation opportunities. BLM staff/volunteers are periodically present at recreation sites but occasionally present away from recreation sites.					
No maps or brochures available on-site; staff rarely present to provide on-site assistance	Basic maps; staff infrequently present (for example, seasonally or during high-use periods) to provide on-site assistance	Area brochures and maps; staff occasionally present (for example, most weekends) to provide on-site assistance	Information materials describe recreation areas and activities; staff periodically present (for example, on weekdays and weekends)	Information materials describe recreation areas and activities, plus experience and benefit descriptions; staff regularly present (for example, almost daily)	Information materials describe recreation areas and activities, plus regularly scheduled on-site outdoor demonstrations and clinics
Management Controls and Regulations- Some regulatory and ethics signing; moderate use restrictions					
No on-site posting or signing of visitor regulations, interpretive information, or ethics; few use restrictions	Basic user regulations at key access points; minimum use restrictions	Some regulatory and ethics signing; moderate use restrictions (for example, camping and human waste)	Rules, regulations, and ethics clearly posted; use restrictions, limitations, and/or closures	Regulations strict and ethics prominent; use may be limited by permit, reservation, or other methods	Enforcement in addition to rules to reduce conflicts, hazards, and resource damage

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions	

H.6.5 Community Trails RMZ (4,400 acres)

The Community Trails RMZ is nested within the greater Redding area. Non-motorized, multi-use trails frequently interface with rural and urban areas, providing critical connectivity between recreation focus areas and the community. Community Trails offer nature experiences by leaving roaded areas, following along creeks, utilizing natural features such as hillsides to provide a sense of remoteness from the rural and urban environment.

Participants in visitor assessments report on average 4.0 realization of the targeted experience and benefit outcomes listed below (where 1 = Not at all realized and 5 = totally realized).

Activities	Experiences	Benefits
<ul style="list-style-type: none">Mountain biking, hiking, trail running, and equestrian use	<ul style="list-style-type: none">Developing skills and abilities,Perseverance, exercise, and stress reductionEnjoying easy access to natural landscapesExpansion of cultural awareness	<ul style="list-style-type: none">Increase self-reliance, improved mental and physical health.Greater sense of connection to nature and communityCommunity connectivity

Management Actions and Allowable Use Decisions

- Develop a complete, diverse, and sustainable multi-use trail system to increase individual well-being, sense of community, and to promote connectivity and socioeconomic opportunities. Provide connectivity to other trails and features in the Redding area.
- Provide a diversity of trail and nature experiences, including wildlife viewing, and swimming hole access. Trail planning would emphasize multi-use trail and equity among user groups.
- Optimized mountain bike trail and equestrian and hiker only trails would be permissible where uses would not be in conflict and would not prohibit free flowing use of connected multi-use trail.
- Promote community participation in stewardship of trails and in cultural and natural resources conservation through volunteer and partner engagement.
- Sign planning for cultural resource information throughout the RMZ would ensure adequate coverage of resource topics and points of cultural interests.
- Special recreation permits and organized groups not requiring a permit would be allowed and encouraged to promote socioeconomic development and reach social outcomes of greater sense of connection and cultural awareness within the area.

Physical, Social, and Operational Recreation Setting Characteristics Tables

Table H-13
Community Trails RMZ, Physical Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Remoteness (approx. distance from routes) – Over time, class acreages may change but all classes still exist					
More than 0.5 miles from either mechanized or motorized routes	Within 0.5 miles of mechanized routes	Within 0.5 miles of four-wheel-drive vehicle, all-terrain vehicle, and motorcycle routes.	Within 0.5 miles of low-clearance or passenger vehicle routes (includes unpaved County roads and private land routes)	Within 0.5 miles of paved/primary roads and highways	Within 0.5 miles of streets and roads within municipalities and along highways
Naturalness (landscape texture form, line, color) - No new ROWs or fluid or locatable mineral development. Manage as No Surface Occupancy.					
Undisturbed natural landscape	Natural landscape with any modifications in harmony with surroundings and not visually obvious or evident (for example, stock ponds and trails)	Character of the natural landscape retained; a few modifications contrast with character of the landscape (for example, fences and primitive roads)	Character of the natural landscape partially modified, but none overpower natural landscape (for example, roads, structures, and utilities)	Character of the natural landscape considerably modified (agriculture, residential, or industrial)	Urbanized developments dominate landscape
Visitor Facilities – Maintain rustic facilities. Camping designated to dispersed sites along 2.7 miles of Thirteen Mile Loop.					
No structures; foot/horse trails only	Developed trails made mostly of native materials such as log bridges; structures are rare and isolated	Maintained and marked trails, simple trailhead developments, and basic toilets	Rustic facilities such as campsites, restrooms, trailheads, and interpretive displays	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits.	Elaborate full-service facilities such as laundries, restaurants, and groceries

Existing RSCs	
Existing and Desired RSCs	
Anticipated Potential Conditions	

Table H-14
Community Trails RMZ Social Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Contacts (with other groups) - Participants encounter a primary use season (October through May) average of up to 14 encounters/day in areas classified as middle country and encounter an average of up to 29 encounters/day in areas classified as front country.					
Fewer than 3 encounters per day at camp sites and fewer than 6 encounters per day on travel routes	3–6 encounters per day off travel routes (for example, campsites) and 7–15 encounters per day on travel routes	7–14 encounters per day off travel routes (for example, staging areas) and 15–29 encounters per day on travel routes	15–29 encounters per day off travel routes (for example, campgrounds) and 30 or more encounters per day on travel routes	People seem to be generally everywhere	Busy place with other people constantly in view
Group Size - Away from trailheads, participants encounter a primary use season (Mid-April through October) average of up to 9 people per group in areas classified as back country and up to 12 people per group in areas classified as middle country					
Fewer than or equal to 3 people per group	4–6 people per group	7–12 people per group	13–25 people per group	26–50 people per group	Greater than 50 people per group.
Evidence of Use - Localized areas of vegetation alteration and compacted/bare soils are found along trails and at trailheads. Inappropriate recreation use is rehabilitated					
No alteration of the natural terrain; footprints only observed; sounds of people rare	Areas of alteration uncommon; little surface vegetation wear observed; sounds of people infrequent	Small areas of alteration; surface vegetation showing wear with some bare soils sounds of people occasionally heard	Small areas of alteration prevalent; surface vegetation gone with compacted soils observed; sounds of people regularly heard	A few large areas of alteration; surface vegetation absent with hardened soils; sounds of people frequently heard	Large areas of alteration prevalent; some erosion; constantly hear people

Existing RSCs	
Existing and Desired RSCs	
Anticipated Potential Conditions	

Table H-15
Community Trails RMZ Operational Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Public Access (types of public travel allowed) – Off-road vehicle use is predominant in the RMZ and motorized use is limited to designated motorized routes, with a 25-mph speed limit throughout.					
Nonmotorized travel (for example, foot and horse travel)	Nonmotorized travel (for example, mountain bikes)	Four-wheel-drive vehicles, all-terrain vehicles, and dirt bikes, in addition to nonmotorized, mechanized use	Two-wheel-drive vehicles are predominant, but also four-wheel-drive vehicles and nonmotorized, mechanized use	Ordinary highway auto and truck traffic is characteristic	Wide variety of street vehicles and highway traffic is ever-present
Visitor Services and information - Informational materials describe the SRMA and recreation opportunities. BLM staff/volunteers are periodically present at recreation sites but occasionally present away from recreation sites.					
No maps or brochures available on-site; staff rarely present to provide on-site assistance	Basic maps: staff infrequently present (for example, seasonally or during high-use periods) to provide on-site assistance	Area brochures and maps; staff occasionally present (for example, most weekends) to provide on-site assistance	Information materials describe recreation areas and activities; staff periodically present (for example, on weekdays and weekends)	Information materials describe recreation areas and activities, plus experience and benefit descriptions; staff regularly present (for example, almost daily)	Information materials describe recreation areas and activities, plus regularly scheduled on-site outdoor demonstrations and clinics
Management Controls and Regulations- Some regulatory and ethics signing; moderate use restrictions					
No on-site posting or signing of visitor regulations, interpretive information, or ethics; few use restrictions	Basic user regulations at key access points; minimum use restrictions	Some regulatory and ethics signing; moderate use restrictions (for example, camping and human waste)	Rules, regulations, and ethics clearly posted; use restrictions, limitations, and/or closures	Regulations strict and ethics prominent; use may be limited by permit, reservation, or other methods	Enforcement in addition to rules to reduce conflicts, hazards, and resource damage

Existing RSCs	
Existing and Desired RSCs	
Anticipated Potential Conditions	

H.6.6 Iron Mountain Target Shooting Area SRMA

The Iron Mountain SRMA (600 acres) would be designated under Proposed Action. The Iron Mountain SRMA is located on Iron Mountain Road, 5 miles north of Highway 299, west of the City of Redding (**Figure 3**). This area has historically been used for target shooting and sighting in hunting rifles. It provides 4 separate roadside turnout shooting areas and is popular for its proximity to population centers and year-round paved county road access. The Iron Mountain Target Shooting SRMA has been used as a target shooting area for over 30 years. The use has grown significantly over the last 15 years due to public and private lands elsewhere being closed to target shooting. Although BLM rarely designates target shooting areas, BLM has historically managed for this use along with assistance from Shasta County by improving parking and lead capture. The SRMA would be managed to improve user safety and reduce impacts to surrounding areas, potentially with more developed shooting ranges, backstops, or other infrastructure.

Outcome Objective

Participants in visitor assessments report on average 4.0 realization of the targeted experience and benefit outcomes listed below (where 1 = Not at all realized and 5 = totally realized).

Activities	Experiences	Benefits
<ul style="list-style-type: none"> Target shooting 	<ul style="list-style-type: none"> Improving skills and abilities Increasing awareness for firearm safety Sharing outdoor activity with friends and family Easy access to outdoors. 	<ul style="list-style-type: none"> Increase self-reliance, improved skills for outdoor enjoyment Stronger ties with family and friends Enlarged understanding of personal responsibility to help care for community and keep it clean Economic benefits to local retailers and small businesses.

Management Actions and Allowable Use Decisions

- Develop an implementation level plan for managing the shooting range. This plan would include facilities and shooting range operating practices to provide for a safe recreational experience while protecting natural and cultural resources.
- Improve target shooting opportunities and allow for greater development of gun safety capacity and awareness, gun skills and abilities, and awareness of wildfire safety while shooting.
- Develop shooting range facilities (for example, backstops) to provide for a safe shooting environment and in accordance with resource protection and stewardship goals.
- As applicable, pursue partnerships and/or stewardship opportunities with governmental or non-governmental organizations to assist in developing and managing the shooting range.
- Continue to provide Shooting Range SRPs, balancing easy public access with commercial, organized group and event interests.
- Prioritize hazardous fuel reductions at the Shooting Range, maintaining hazardous fuel reductions on a 1 to 3-year cycle at the shooting range.
- Require the use of non-toxic ammunition for all shooting and/or develop backstop containment and require non-toxic skeet and trap shooting.

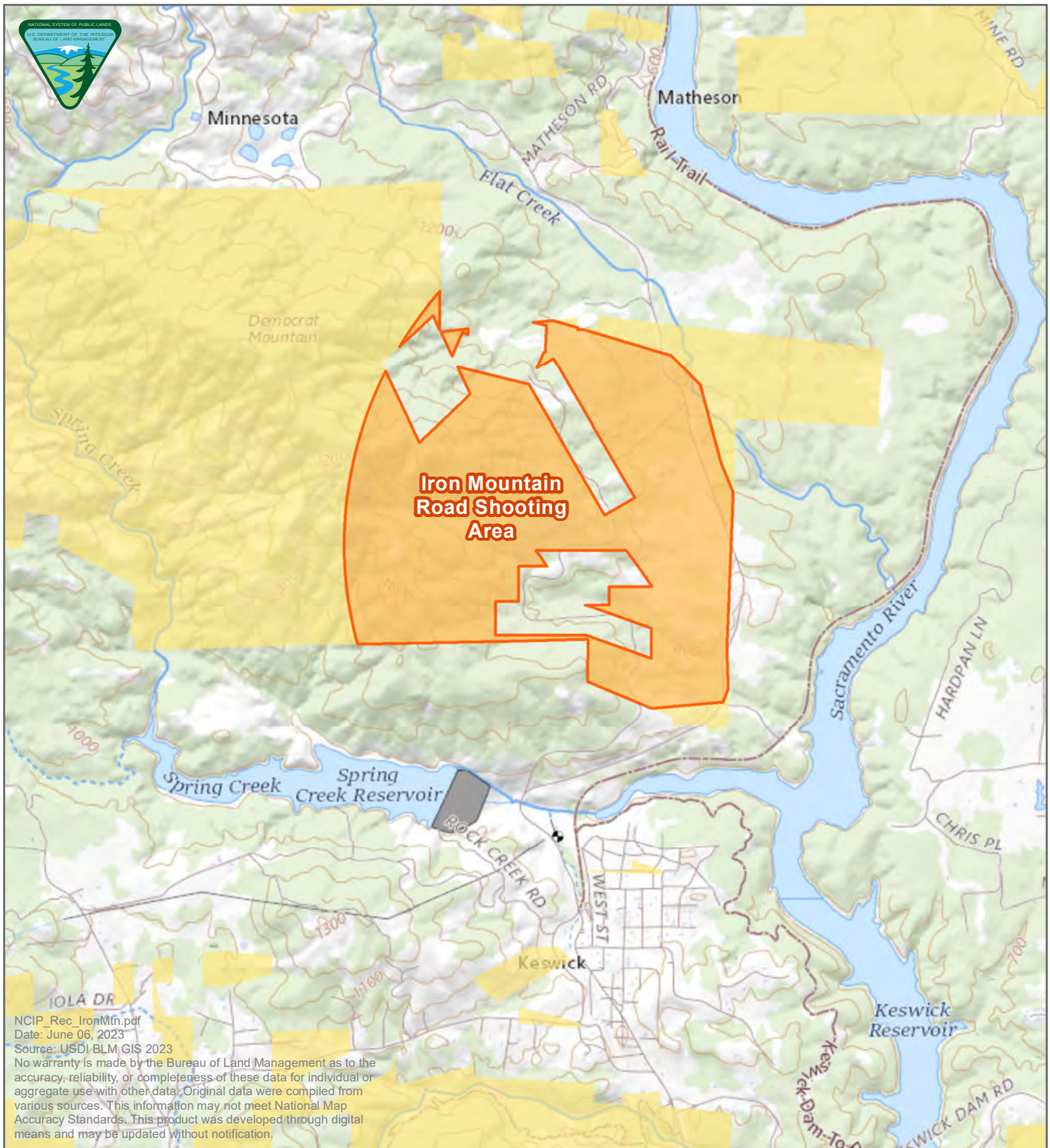


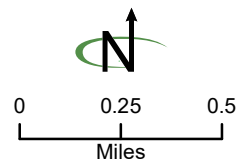


Figure 3: Iron Mountain SRMA

-  Proposed special recreation management area (SRMA)
-  Bureau of Land Management



Physical, Social, and Operational Recreation Setting Characteristics

**Table H-16
Iron Mountain SRMA, Physical Recreation Setting Characteristics**

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Remoteness (approx. distance from routes) – Over time, class acreages may change but all classes still exist					
More than 0.5 miles from either mechanized or motorized routes	Within 0.5 miles of mechanized routes	Within 0.5 miles of four-wheel-drive vehicle, all-terrain vehicle, and motorcycle routes.	Within 0.5 miles of low-clearance or passenger vehicle routes (includes unpaved County roads and private land routes)	Within 0.5 miles of paved/primary roads and highways	Within 0.5 miles of streets and roads within municipalities and along highways
Naturalness (landscape texture form, line, color) - No new ROWs or fluid or locatable mineral development. Manage as No Surface Occupancy.					
Undisturbed natural landscape	Natural landscape with any modifications in harmony with surroundings and not visually obvious or evident (for example, stock ponds and trails)	Character of the natural landscape retained; a few modifications contrast with character of the landscape (for example, fences and primitive roads)	Character of the natural landscape partially modified, but none overpower natural landscape (for example, roads, structures, and utilities)	Character of the natural landscape considerably modified (agriculture, residential, or industrial)	Urbanized developments dominate landscape
Visitor Facilities – Maintain rustic facilities. Camping designated to dispersed sites along 2.7 miles of Thirteen Mile Loop.					
No structures; foot/horse trails only	Developed trails made mostly of native materials such as log bridges; structures are rare and isolated	Maintained and marked trails, simple trailhead developments, and basic toilets	Rustic facilities such as campsites, restrooms, trailheads, and interpretive displays	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits.	Elaborate full-service facilities such as laundries, restaurants, and groceries

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions (APC)	

Table H-17
Iron Mountain SRMA Social Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Contacts (with other groups) - Participants encounter a primary use season (October through May) average of up to 14 encounters/day in areas classified as middle country and encounter an average of up to 29 encounters/day in areas classified as front country.					
Fewer than 3 encounters per day at camp sites and fewer than 6 encounters per day on travel routes	3–6 encounters per day off travel routes (for example, campsites) and 7–15 encounters per day on travel routes	7–14 encounters per day off travel routes (for example, staging areas) and 15–29 encounters per day on travel routes	15–29 encounters per day off travel routes (for example, campgrounds) and 30 or more encounters per day on travel routes	People seem to be generally everywhere	Busy place with other people constantly in view
Group Size - Away from trailheads, participants encounter a primary use season (Mid-April through October) average of up to 9 people per group in areas classified as back country and up to 12 people per group in areas classified as middle country					
Fewer than or equal to 3 people per group	4–6 people per group	7–12 people per group	13–25 people per group	26–50 people per group	Greater than 50 people per group.
Evidence of Use - Localized areas of vegetation alteration and compacted/bare soils are found along trails and at trailheads. Inappropriate recreation use is rehabilitated					
No alteration of the natural terrain; footprints only observed; sounds of people rare	Areas of alteration uncommon; little surface vegetation wear observed; sounds of people infrequent	Small areas of alteration; surface vegetation showing wear with some bare soils sounds of people occasionally heard	Small areas of alteration prevalent; surface vegetation gone with compacted soils observed; sounds of people regularly heard	A few large areas of alteration; surface vegetation absent with hardened soils; sounds of people frequently heard	Large areas of alteration prevalent; some erosion; constantly hear people

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions	

Table H-18
Iron Mountain SRMA Operational Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Public Access (types of public travel allowed) – Off-road vehicle use is predominant in the RMZ and motorized use is limited to designated motorized routes, with a 25-mph speed limit throughout.					
Nonmotorized travel (for example, foot and horse travel)	Nonmotorized travel (for example, mountain bikes)	Four-wheel-drive vehicles, all-terrain vehicles, and dirt bikes, in addition to nonmotorized, mechanized use	Two-wheel-drive vehicles are predominant, but also four-wheel-drive vehicles and nonmotorized, mechanized use	Ordinary highway auto and truck traffic is characteristic	Wide variety of street vehicles and highway traffic is ever-present
Visitor Services and information - Informational materials describe the SRMA and recreation opportunities. BLM staff/volunteers are periodically present at recreation sites but occasionally present away from recreation sites.					
No maps or brochures available on-site; staff rarely present to provide on-site assistance	Basic maps; staff infrequently present (for example, seasonally or during high-use periods) to provide on-site assistance	Area brochures and maps; staff occasionally present (for example, most weekends) to provide on-site assistance	Information materials describe recreation areas and activities; staff periodically present (for example, on weekdays and weekends)	Information materials describe recreation areas and activities, plus experience and benefit descriptions; staff regularly present (for example, almost daily)	Information materials describe recreation areas and activities, plus regularly scheduled on-site outdoor demonstrations and clinics
Management Controls and Regulations- Some regulatory and ethics signing; moderate use restrictions					
No on-site posting or signing of visitor regulations, interpretive information, or ethics; few use restrictions	Basic user regulations at key access points; minimum use restrictions	Some regulatory and ethics signing; moderate use restrictions (for example, camping and human waste)	Rules, regulations, and ethics clearly posted; use restrictions, limitations, and/or closures	Regulations strict and ethics prominent; use may be limited by permit, reservation, or other methods	Enforcement in addition to rules to reduce conflicts, hazards, and resource damage

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions	

H.6.7 Samoa Dunes SRMA (190 acres)

The Samoa Dunes SRMA would be designated a SRMA under Proposed Action. The Samoa Dunes SRMA is a multi-use area located near the City of Eureka and Arcata with wide variety of recreational activities, including hiking, surfing, fishing, sightseeing, beachcombing, OHV use, picnicking, and birdwatching.

Outcome Objective

- The SRMA would be managed the same as Alternative A.

Participants in visitor assessments report on average 4.0 realization of the targeted experience and benefit outcomes listed below (where 1 = Not at all realized and 5 = totally realized).

Activities	Experiences	Benefits
<ul style="list-style-type: none"> • 4x4 driving, ATV/UTV riding, motorcycle riding. • Surfing • Fishing • Hiking • Picnicking • Wildlife viewing 	<ul style="list-style-type: none"> • Escape everyday responsibilities. • Developing skills and abilities • Enjoying risk taking and adventure • Enjoy frequent access to physical activity. • Enjoying friends and family togetherness • Enjoying learning and teaching outdoor skills, • Enjoying access to natural landscapes 	<ul style="list-style-type: none"> • Greater sense of adventure • Stronger ties with family and friends • Improved skills for enjoying the outdoors. • Lifestyle improvement or maintenance • Greater community involvement • Maintain local tourism. • Increased desirability as a place to live

Management Actions and Allowable Use Decisions

- Entire management area is closed to firearm and crossbow/bow shooting.
- Vehicles limited to daytime access, with nighttime gate closure one hour after sunset, and reopened daily one hour before sunrise.
- Continue to work with local governments in the management of the entire peninsula.
- Provide opportunities for off-road vehicle recreation.
- Provide opportunities for hiking, sightseeing, bird watching, picnicking, surfing, fishing that do not directly conflict with OHV use.
- Provide opportunities for OHV recreation by maintaining and improving OHV facilities and trails.
- Continue to apply for “Green Sticker” funding.
- Maintain and improve OHV park (for example, staging area, riding trails) at Samoa Dunes
- Interpretation and education of natural and cultural resources unique to Samoa Dunes would be prioritized.
- Prepare a Samoa Dunes Recreation Area Management Plan (completed)

Best Management Practices

See **Appendix F** for a list of recreation and visitor services BMPs.

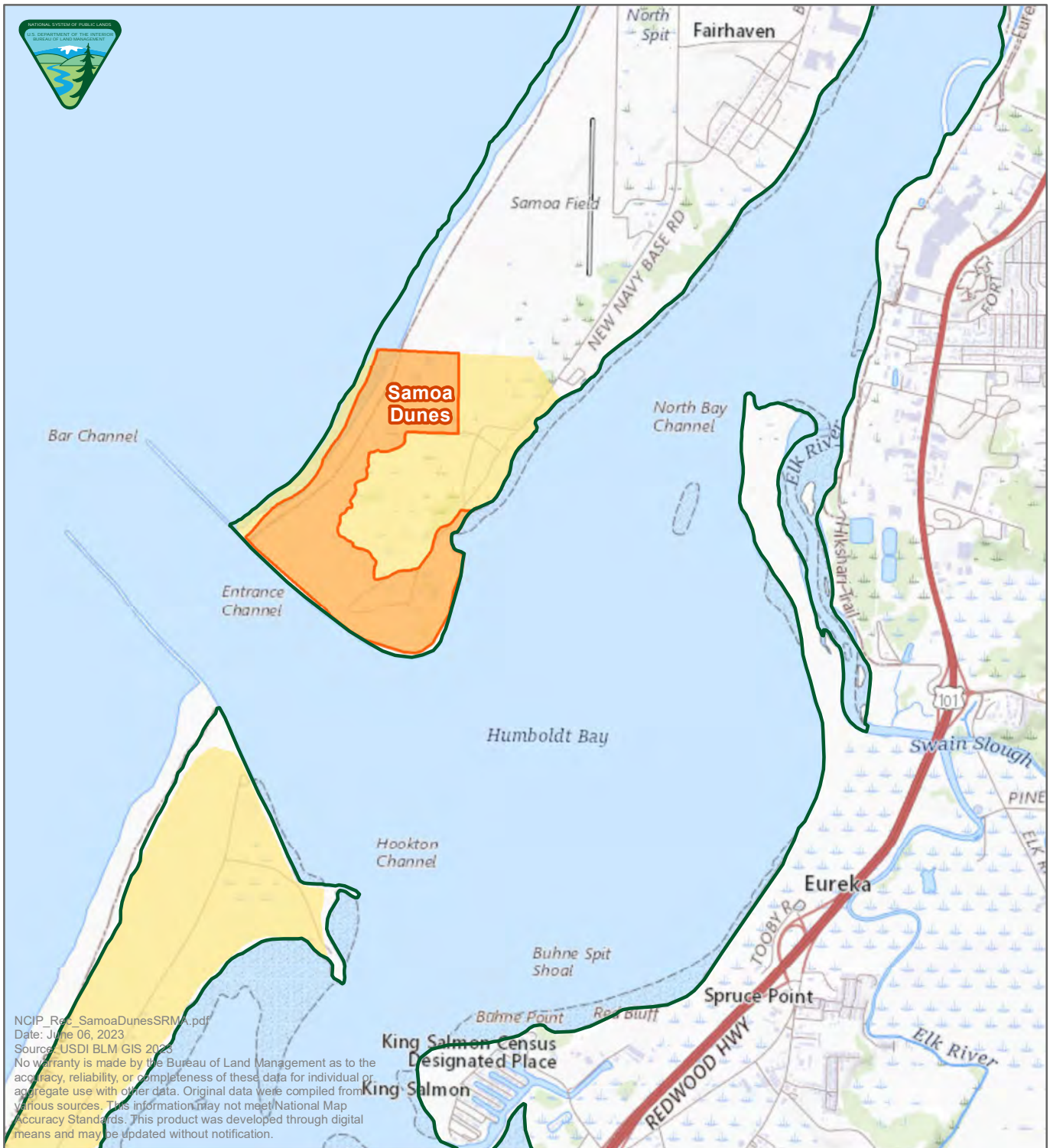



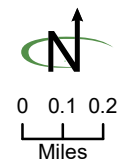


Figure 4: Samoa Dunes SRMA

-  Proposed special recreation management area (SRMA)
-  Bureau of Land Management
-  NCIP planning area



Physical, Social, and Operational Recreation Setting Characteristics

**Table H-19
Samoa Dunes SRMA, Physical Recreation Setting Characteristics**

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Remoteness (approx. distance from routes) – Over time, class acreages may change but all classes still exist					
More than 0.5 miles from either mechanized or motorized routes	Within 0.5 miles of mechanized routes	Within 0.5 miles of four-wheel-drive vehicle, all-terrain vehicle, and motorcycle routes.	Within 0.5 miles of low-clearance or passenger vehicle routes (includes unpaved County roads and private land routes)	Within 0.5 miles of paved/primary roads and highways	Within 0.5 miles of streets and roads within municipalities and along highways
Naturalness (landscape texture form, line, color) - No new ROWs or fluid or locatable mineral development. Manage as No Surface Occupancy.					
Undisturbed natural landscape	Natural landscape with any modifications in harmony with surroundings and not visually obvious or evident (for example, stock ponds and trails)	Character of the natural landscape retained; a few modifications contrast with character of the landscape (for example, fences and primitive roads)	Character of the natural landscape partially modified, but none overpower natural landscape (for example, roads, structures, and utilities)	Character of the natural landscape considerably modified (agriculture, residential, or industrial)	Urbanized developments dominate landscape
Visitor Facilities – Maintain rustic facilities. Camping designated to dispersed sites along 2.7 miles of Thirteen Mile Loop.					
No structures; foot/horse trails only	Developed trails made mostly of native materials such as log bridges; structures are rare and isolated	Maintained and marked trails, simple trailhead developments, and basic toilets	Rustic facilities such as campsites, restrooms, trailheads, and interpretive displays	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits.	Elaborate full-service facilities such as laundries, restaurants, and groceries
Existing RSCs		*All three denotes existing, desired, and anticipated.			
Desired RSCs					
Anticipated Potential Conditions					

Table H-20
Samoa Dunes SRMA Social Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Contacts (with other groups) - Participants encounter a primary use season (October through May) average of up to 14 encounters/day in areas classified as middle country and encounter an average of up to 29 encounters/day in areas classified as front country.					
Fewer than 3 encounters per day at camp sites and fewer than 6 encounters per day on travel routes	3–6 encounters per day off travel routes (for example, campsites) and 7–15 encounters per day on travel routes	7–14 encounters per day off travel routes (for example, staging areas) and 15–29 encounters per day on travel routes	15–29 encounters per day off travel routes (for example, campgrounds) and 30 or more encounters per day on travel routes	People seem to be generally everywhere	Busy place with other people constantly in view
Group Size - Away from trailheads, participants encounter a primary use season (Mid-April through October) average of up to 9 people per group in areas classified as back country and up to 12 people per group in areas classified as middle country					
Fewer than or equal to 3 people per group	4–6 people per group	7–12 people per group	13–25 people per group	26–50 people per group	Greater than 50 people per group.
Evidence of Use - Localized areas of vegetation alteration and compacted/bare soils are found along trails and at trailheads. Inappropriate recreation use is rehabilitated					
No alteration of the natural terrain; footprints only observed; sounds of people rare	Areas of alteration uncommon; little surface vegetation wear observed; sounds of people infrequent	Small areas of alteration; surface vegetation showing wear with some bare soils sounds of people occasionally heard	Small areas of alteration prevalent; surface vegetation gone with compacted soils observed; sounds of people regularly heard	A few large areas of alteration; surface vegetation absent with hardened soils; sounds of people frequently heard	Large areas of alteration prevalent; some erosion; constantly hear people
Existing RSCs		<i>*All three denotes existing, desired, and anticipated.</i>			
Desired RSCs					
Anticipated Potential Conditions					

Table H-21
Samoa Dunes SRMA Operational Recreation Setting Characteristics

Primitive Classification	Backcountry Classification	Middle Country Classification	Front Country Classification	Rural Classification	Urban Classification
Public Access (types of public travel allowed) – Off-road vehicle use is predominant in the RMZ and motorized use is limited to designated motorized routes, with a 25-mph speed limit throughout.					
Nonmotorized travel (for example, foot and horse travel)	Nonmotorized travel (for example, mountain bikes)	Four-wheel-drive vehicles, all-terrain vehicles, and dirt bikes, in addition to nonmotorized, mechanized use	Two-wheel-drive vehicles are predominant, but also four-wheel-drive vehicles and nonmotorized, mechanized use	Ordinary highway auto and truck traffic is characteristic	Wide variety of street vehicles and highway traffic is ever-present
Visitor Services and information - Informational materials describe the SRMA and recreation opportunities. BLM staff/volunteers are periodically present at recreation sites but occasionally present away from recreation sites.					
No maps or brochures available on-site; staff rarely present to provide on-site assistance	Basic maps; staff infrequently present (for example, seasonally or during high-use periods) to provide on-site assistance	Area brochures and maps; staff occasionally present (for example, most weekends) to provide on-site assistance	Information materials describe recreation areas and activities; staff periodically present (for example, on weekdays and weekends)	Information materials describe recreation areas and activities, plus experience and benefit descriptions; staff regularly present (for example, almost daily)	Information materials describe recreation areas and activities, plus regularly scheduled on-site outdoor demonstrations and clinics
Management Controls and Regulations- Some regulatory and ethics signing; moderate use restrictions					
No on-site posting or signing of visitor regulations, interpretive information, or ethics; few use restrictions	Basic user regulations at key access points; minimum use restrictions	Some regulatory and ethics signing; moderate use restrictions (for example, camping and human waste)	Rules, regulations, and ethics clearly posted; use restrictions, limitations, and/or closures	Regulations strict and ethics prominent; use may be limited by permit, reservation, or other methods	Enforcement in addition to rules to reduce conflicts, hazards, and resource damage

Existing RSCs	
Desired RSCs	
Anticipated Potential Conditions	

H.7 EXTENSIVE RECREATION MANAGEMENT AREAS

For each ERMA, the BLM has identified supporting information to include established objectives, identified management actions and allowable uses.

Supporting management actions and allowable use decisions common to all ERMAs include:

- Forestry: All ERMAs except Mule Mountain RMZ. Timber harvest, firewood cutting, and special forest product harvest would be allowed if they can be implemented without negatively affecting the desired recreation setting.
- Lands and Realty: All ERMAs would be retained for long-term management (subject to valid existing rights).
- Minerals: All ERMAs would be closed to salable mineral development (with exception of development of salable minerals for restoration), and closed to mineral leasing
- Visual Resource Management: All ERMAs would be managed under VRM Class III objectives except specific locations where VRM Class II objectives are proposed for special designation areas located within the ERMAs.
- Comprehensive Travel Management: All ERMAs would be classified as OHV Limited.
- Collaborate with community partners, agencies, and tribes to promote awareness of area sensitivity and cumulative impacts to be avoided.

H.7.1 Redding Trails ERMA

The Redding Trails ERMA (with four associated RMZs) would be designated under Alternative B. The Redding Trails ERMA (9,900 acres) is a composite network of approximately 100 miles of non-motorized, multi-use trail (**Figure 5**). Hiking, trail running, mountain biking, and horseback riding are all popular activities, as well as swimming and nature viewing. The area will be maintained and enhanced to provide continued recreational opportunities for residents and visitors to the city of Redding. One of the key features of the ERMA is its proximity to and accessibility from the great Redding population center. In the Redding Trails ERMA area, the Bureau of Reclamation manages 100 acres that are associated with the construction and operation of Shasta and Keswick dams. Ultimately, much of this land may return to the BLM for long term management, though the exact timing and areas for this is unknown. In the meantime, BLM has agreed to manage the recreational opportunities on this land to provide a cohesive, high-quality experience for the public. The BLM will manage the recreational opportunities on BOR land in accordance with the descriptions in the ERMA.

Sacramento River Rail Trail and Keswick Reservoir RMZ (30 acres)

The Sacramento River Rail Trail and Keswick Reservoir RMZ is located to the west of the Keswick reservoir and the Sacramento River. The primary recreation opportunities are the on the paved Sacramento River Rail Trail and water-based recreation opportunities from the Keswick boat ramp and trailhead. The area connects with and complements the Community Trails RMZ.

Outcome Objective

Continue to provide paved trail experiences and water-based recreation opportunities along the Sacramento River to encourage quality of life for visitors and socioeconomic opportunities for the community.

Management Actions and Allowable Use Decisions

- Commercial fishing SRPs would be evaluated for resource capacity and sustainability.
- Work with adjoining landowners to acquire full administrative rights to lands as applicable to optimize management for desired recreational outcomes.
- Recreation development may be constrained to meet greater stewardship goals for natural and cultural resources.

Clear Creek RMZ (2,600 acres)

The Clear Creek RMZ primarily centers around Clear Creek, a suitable creek in the WSR system and tributary of the Sacramento River. Clear Creek RMZ offers the Cloverdale trail area in the west of the RMZ with scenic, expansive deep canyon views and multi-use trails. In the eastern portion of the RMZ, the trail accesses the creek and meanders through restored riparian ecosystems, providing outstanding swimming, nature viewing, and trail-based recreation opportunities. The RMZ provides a buffer between the creek corridor and industrial development along Clear Creek Road.

Outcome Objective

Provide safe, diverse, and sustainable non-motorized trail and water-based recreation opportunities within the riparian corridor of Clear Creek while conserving cultural and natural resources.

Management Actions and Allowable Use Decisions

- Minimize impacts to wildlife and riparian vegetation when providing and improving access to the creek.
- Develop interpretive educational materials and signage to provide safe recreational access and use of the area. This would include information regarding the difficulty of rapids on the creek.
- Encourage a developed trail system and promote specific locations for creek access. Promote trail connectivity within the RMZ and to the surrounding area.
- Promote collaboration with surrounding landowners to develop trail connectivity.
- Improve health and safety in the area through an abundance of education, interpretation, and signage, as well as increased recreation staff, volunteer, and community partner presence.
- Due to the sensitive resource area, mountain bike-only trail and equestrian-only trails would not be allowed.
- SRPs for commercial guided fishing would not be issued. Public fishing access would continue.
- Recreation development may be constrained to meet greater stewardship goals for natural and cultural resources.

Mule Mountain RMZ (2,900 acres)

The Mule Mountain RMZ is characterized by steeper, typically longer trails with multiple loop options that connect to trails in the Swasey ERMA. Mountain biking is popular in the RMZ, though hiking, trail running, horseback riding, and casual use metal detection are also common.

Outcome Objective

Develop a complete, diverse, sustainable trail system serving multiple use needs with a focus on mountain biking.

Management Actions and Allowable Use Decisions

- Optimized mountain bike trails (trails with mountain bike-specific trail features such as berms and jumps) would be allowed.
- To provide safe trail options for equestrian uses. Hiker, and equestrian use only trails would be allowable where not in conflict with optimized mountain bike trails (i.e., trails with mountain bike-specific trail features such as berms and jumps).
- Forethought would be given to diverse user groups in the planning of the overall trail system, and mountain biking would be the priority/dominant recreational use.
- Recreation development and management may be constrained by other resources within the Mule Mountain area at any time. Recreation services would be put forward to meet high recreational demand and may continue in a high-profile manner.
- Consider trail re-routes and closures throughout the Swasey ACEC where needed to protect relevance and importance values. Trail re-routes and closures would be proposed and analyzed at the site-specific implementation level.
- Maintenance of parking areas, trailheads, and roads would continue in the existing footprints.
- Develop a trail and road monitoring program to gauge impact to sedimentation and cultural resources.
- Promote a volunteer trail stewardship program.
- Special recreation permits and organized group uses not requiring a permit would be allowed.
- Limitations to SRPs and organized groups would be implemented if monitoring indicates adverse impacts to cultural or natural resources in the area. These limitations could include:
 - Limitations on group size
 - Limitations of number of groups annually
 - Closure of impacted areas to organized events.
- Capacity levels for SRPs would be considered in subsequent implementation level planning if needed.
- During competitive SRP events, spectating would not be allowed within the ACEC outside of parking lots, and roadside areas. Spectating would be allowed outside the ACEC.
- To maintain an accessible environment, the number of large SRP events would be balanced with public demand during peak season.
- Provide visitor services to orient users to the mountain bike specific area, promote responsible recreation, educate about cultural resource values, address specific user group needs, and reduce user conflicts.
- Provide information on mountain bike difficulty level, ratings, skill requirements, and safety through all platforms.
- Maintain trails and close user-made trails as soon as practicable. Provide trail map that is clear to facilitate ease of use and awareness of what is allowed.
- Visitor Services would include extensive development of etiquette, guidance, and policy signage. Such information would focus on cultural heritage and recreational uses within the Swasey ACEC and Mule Mountain RMZ.
- Plan for providing cultural and natural resource information throughout the ERMA, ensuring adequate coverage of resource topics and points of cultural interests to be covered.

- Establish an interpretive or educational center to assist the public in understanding the relevance and importance of the ACEC. BLM would collaborate with the Tribes on development and presentation of materials at this center.
- The recreation area would be day use only. Mule Mountain Road area would be closed to camping.

Community Trails RMZ (4,400 acres)

The Community Trails RMZ is nested within the greater Redding area. Non-motorized, multi-use trails frequently interface with rural and urban areas, providing critical connectivity between recreation focus areas and the community. Community Trails offer nature experiences by leaving roadbed areas, following along creeks, utilizing natural features such as hillsides to provide a sense of remoteness from the rural and urban environment.

Outcome Objective

Develop high quality trails with connectivity between points of interest and recreation areas for complete, diverse, and sustainable multi-use trail system to increase individual well-being, sense of community, and to promote socioeconomic opportunities.

Management Actions and Allowable Use Decisions

- Provide connectivity to other trails and features in the Redding area.
- Provide a diversity of trail and nature experiences, including wildlife viewing and swimming hole access.
- Trail planning would emphasize multi-use trail and equity among user groups.
- Optimized mountain bike trails (i.e., trails with mountain bike-specific trail features such as berms and jumps) and equestrian and hiker-only trails would be permissible where uses are not in conflict and do not prohibit free flowing use of connected multi-use trail.
- Promotion of community engagement in stewardship of trails and cultural and natural resources conservation through volunteer and partner engagement.
- Recreation development may be constrained to meet greater stewardship goals for natural and cultural resources.

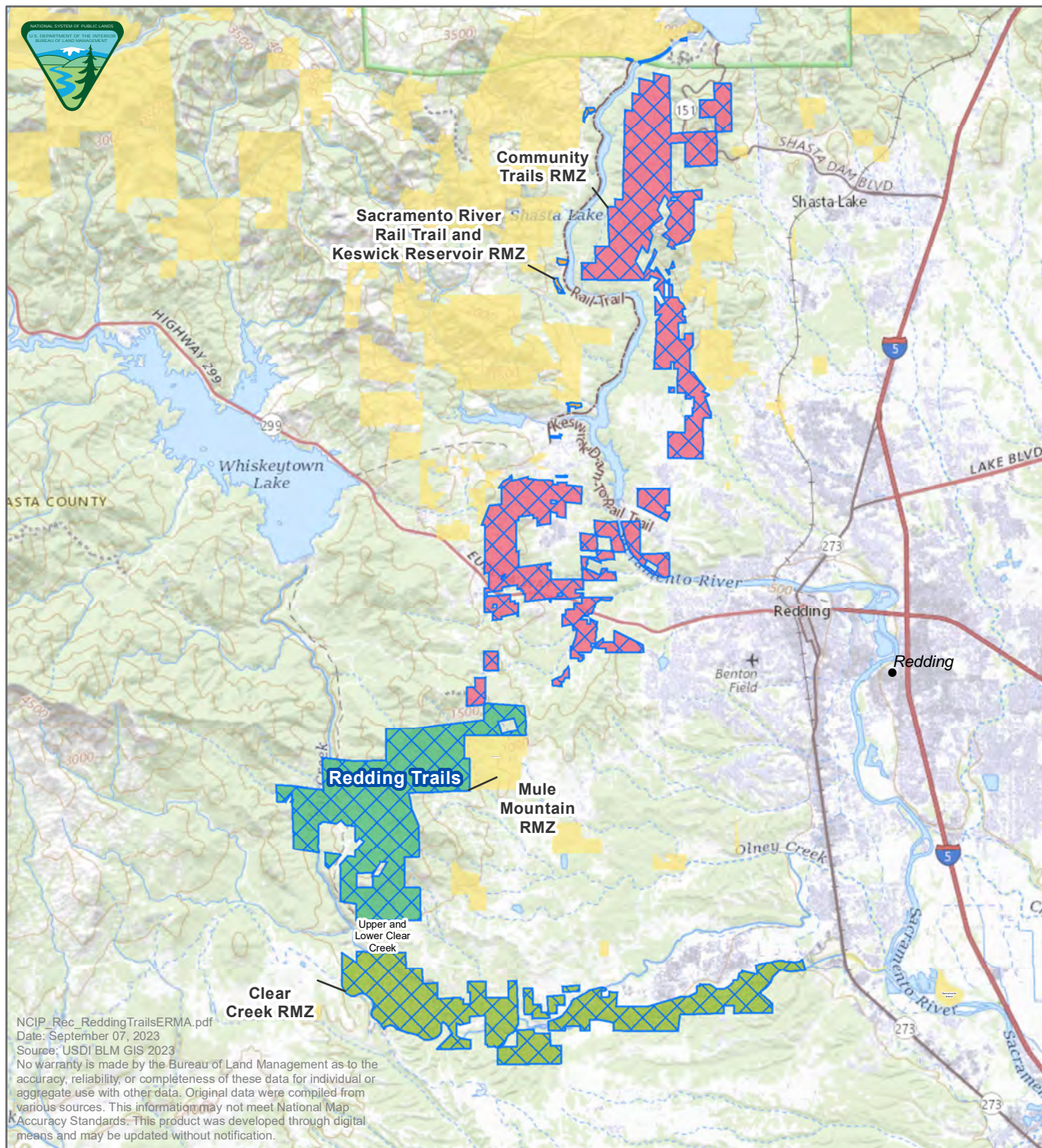


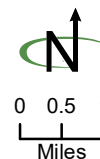
Figure 5: Redding Trails ERMA and Associated RMZs

Recreation Management Zone (RMZ)

- Clear Creek
- Community Trails
- Mule Mountain
- Sacramento River Rail Trail and Keswick Reservoir

Proposed extensive recreation management area (ERMA)

Bureau of Land Management



H.7.2 Swasey ERMA

The Swasey ERMA (500 acres) is characterized by lowlands and foothills with shorter trail segments, many of which connect to longer, steeper trails in the adjacent Mule Mountain RMZ (**Figure 6**). The Swasey ERMA is a cultural ACEC. The area is popular for mountain biking, though hiking, trail running, horseback riding, and casual use metal detection are also common.

Outcome Objective

Maintain a diverse, sustainable trail system serving multiple non-motorized uses with a focus on mountain biking, while protecting and interpreting heritage resources.

Management Actions and Allowable Use Decisions – Alternative B

- Signage would use a new name for the area: “Swasey Recreation and Heritage Area”
- Recreation development and management may be constrained by other resources within the Swasey ERMA, particularly cultural and heritage resources.
- Recreation services would not be emphasized in the same way in the Swasey ERMA as they would be within the Mule Mountain ERMA/SRMA; however, high demand recreation would be allowed to continue within the Swasey ERMA.
- No new trail development would occur in the ERMA.
- Existing trails in the ERMA would be maintained to promote sustainable, high-quality recreation, subject to natural and cultural resource constraints.
- Close user-made trails as soon as practicable.
- Consider re-routes or closures of existing trails as needed to protect cultural and heritage resources.
- Optimized mountain bike trails (trails with mountain bike- specific trail features such as berms and jumps) would be allowed.
- To provide safe trail options for equestrian uses, hiker and equestrian use only trails would be allowable where not in conflict with optimized mountain bike trails (i.e., trails with mountain bike-specific trail features such as berms and jumps).
- Forethought would be given to facilitating multi-use trails, however, and mountain biking would be the priority and dominant recreational use.
- Develop a trail and road monitoring program to gauge impact to sedimentation and cultural resources.
- Promote a volunteer trail stewardship program.
- SRPs or otherwise authorized uses not requiring a permit would be allowed.
- Limitations to SRPs or otherwise authorized uses would be implemented if monitoring indicates adverse impacts to cultural or natural resources in the area. These limitations could include:
 - Limitations on group size
 - Limitations of number of groups annually
 - Closure of impacted areas to organized events
- SRP capacity levels would be considered in subsequent implementation level planning if needed.
- During competitive SRP events, spectating would not be allowed within the ERMA outside of parking lots and roadside areas.

- To maintain an accessible environment, the number of large SRP events would be balanced with public demand during peak season
- Maintain trailhead, road, and parking areas in existing footprints.
- Provide visitor services to orient users to the mountain bike specific area, promote responsible recreation, educate about cultural resource values, address specific user group needs, and reduce user conflicts.
- Provide information on mountain bike difficulty level, ratings, skill requirements, and safety through all platforms.
- Provide trail map that is clear to facilitate ease of use and awareness of what is allowed.
- Visitor services would include extensive development of etiquette, guidance, and policy signage. Such information would focus on cultural heritage and recreational uses within the ERMA.
- Plan for providing cultural and natural resource information throughout the ERMA, ensuring adequate coverage of resource topics and points of cultural interests to be covered.
- Establish an interpretive or educational center to assist the public in understanding the relevance and importance of the area. BLM would collaborate with the Tribes on development and presentation of materials at this center.
- Recreation area would be day use only.

Management Actions and Allowable Use Decisions – Proposed Action

Management would be the same as in Alternative B, except for the following:

- Minimal trail development may occur in areas of low potential for conflict or impacts to natural or cultural resources. No trail development would be allowed in areas of high potential for conflict or impacts to natural or cultural resources.
- There would be no limitations on spectating during competitive SRP events, unless future site-specific implementation level planning determines a need for it.
- Trailhead, road, and parking area improvements and expansions would be consistent with relevance and importance values of the Swasey ACEC, including expanding the overflow parking and event area.

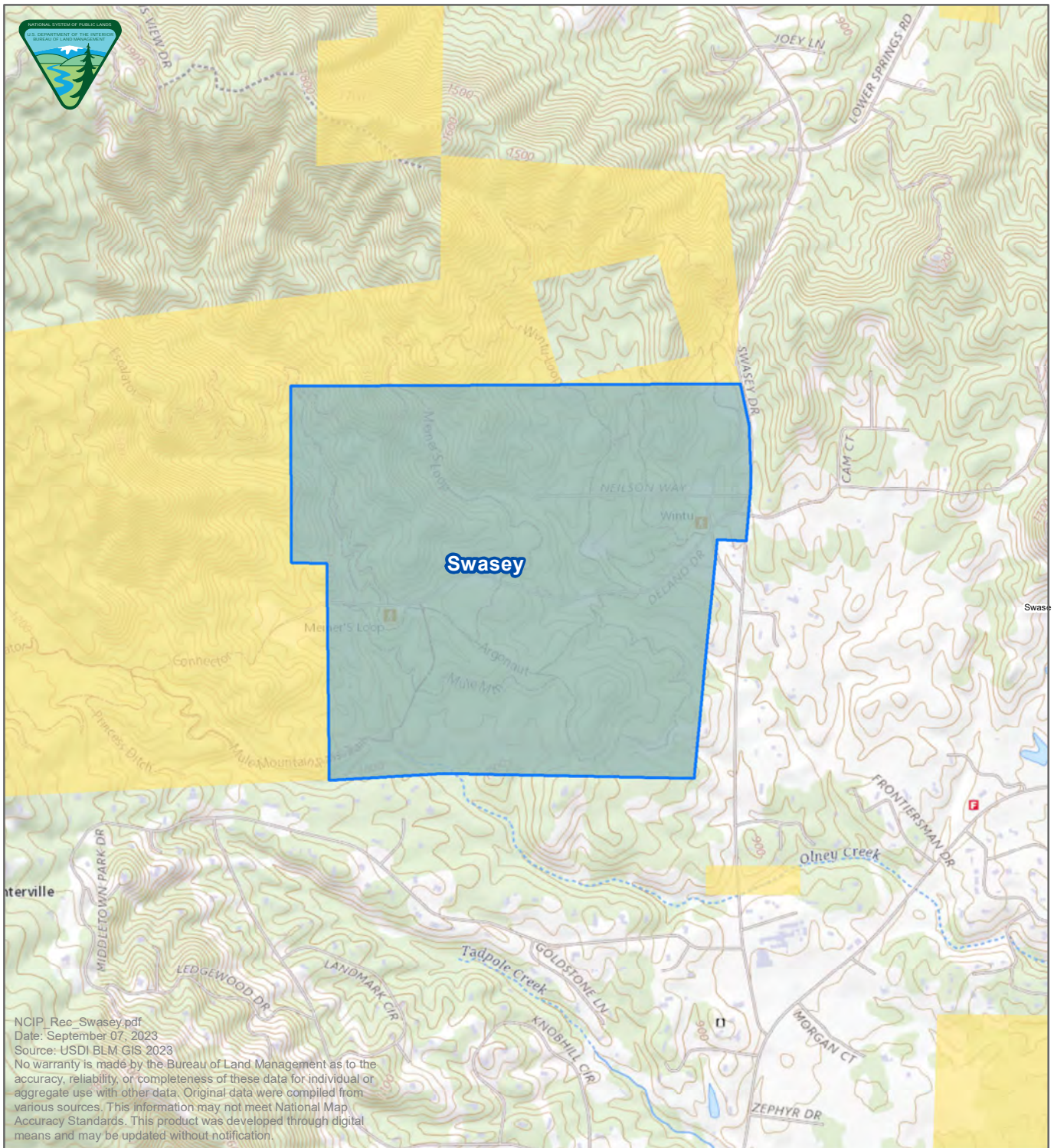


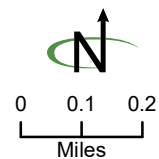


Figure 6: Swasey ERMA

-  Proposed extensive recreation management area (ERMA)
-  Bureau of Land Management



H.7.3 Lacks Creek ERMA

The Lacks Creek ERMA (9,000 acres) would be designated under all action alternatives. Lacks Creek ERMA is in California's northern Coast Range, approximately 15 miles inland from the Pacific Ocean (**Figure 7**). The area is in Humboldt County, approximately 20 miles northeast of Eureka. Hiking, trail running, mountain biking, horseback riding, and seasonal hunting are all popular activities, as well as camping and nature viewing.

Outcome Objective

Through recreation program management and stakeholder involvement, provide outstanding opportunities for nonmotorized trail-based recreation, dispersed camping and continue to contribute to the local community's quality of life commensurate with wildlife habitat, prairie restoration, hunting, forest health, and aesthetic values.

Management Actions and Allowable Use Decisions

- Dispersed camping would be allowed.
- Acquire lands to provide public vehicle access on the west side of Lacks Creek.
- Coordinate with landowners to extend the trail network to Redwood National Park and to Forest Service-administered lands.
- Cooperative management with local non-motorized trail groups supports non-motorized recreation trail activities (e.g., mountain biking, hiking, equestrian) commensurate with prairie restoration and hunting.
- Allow Class I E-bikes on designated routes.
- Continuously improve and maintain existing trails while considering opportunities to develop new trails.
- Designate or restrict specific areas from target shooting as necessary to reduce conflict, preserve public health and safety and natural resource values.
- Consider connecting the east side trail system with west side trail system.
- In order to avoid conflicts between mountain biking and hunting, ensure interpretive materials (signage, kiosks, brochures) educate recreationalists regarding hunting as a use of the ERMA.
- Sign entrance to public lands regarding OHV designations.
- Post boundaries

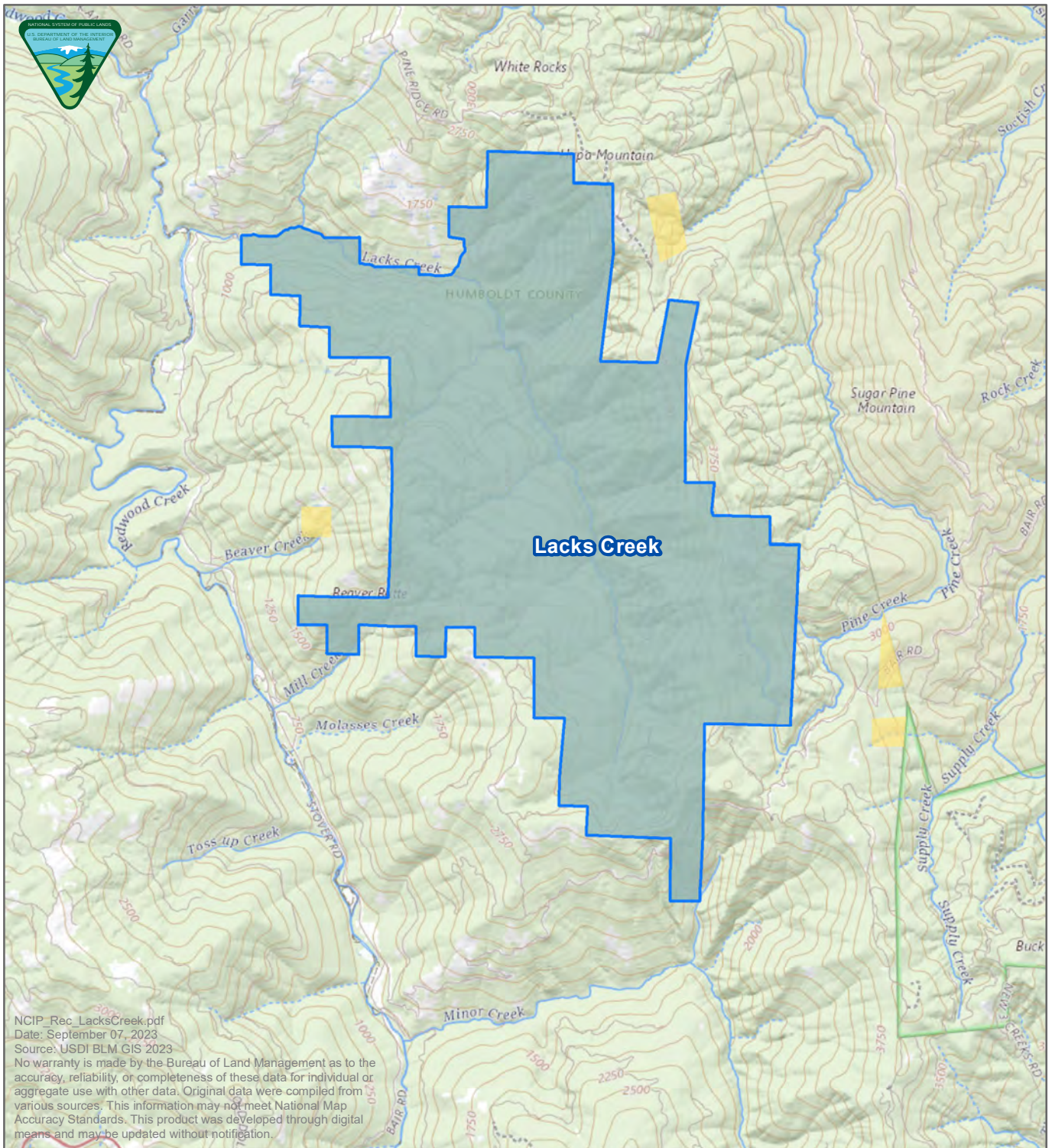




Figure 7: Lacks Creek ERMA

-  Proposed extensive recreation management area (ERMA)
-  Bureau of Land Management

H.7.4 Forks of Butte Creek ERMA

The Forks of Butte Creek ERMA (2,200 acres) would be designated under all alternatives, although the objectives and associated management actions vary by alternative (see below). The Forks of Butte Creek ERMA is located between the communities of Paradise and Forest Ranch; Butte Creek Canyon offers exceptional nature experiences in Butte County (**Figure 8**). The Forks of Butte Creek site was home to the 1849 gold mining operations and this area is still known for its placer gold deposits.

Since being designated by the BLM in 1993 as a recreational mineral collection area, this area has become a popular destination for recreational level gold prospecting. Recreation focuses on hiking, swimming, creek side relaxation, and gold panning, occurring in a dispersed way through the canyon.

Forks of Butte Creek ERMA – Alternatives B and D

Outcome Objective

Recreation opportunities will be provided for sustainable casual use (recreational) mining, creek access, and multiple-use trails, maintaining a predominantly undisturbed natural landscape.

Management Actions and Allowable Use Decisions

- The ERMA would be day use only.
- Facilities for a day-use area would be developed.
- Motor vehicle access to the day use area would be seasonally closed.
- A gate and/or barriers would be installed and maintained. All trail development and barriers would be analyzed and disclosed through site-specific implementation- level NEPA.
- Develop sustainable opportunities for casual use (recreational) level gold prospecting through non-motorized trail access.
- Motorized trail development is not allowed. Equestrian and mountain bike trail options may be limited to avoid resource impacts.
- Develop signage to indicate specific areas where casual use (recreational) mining is not allowed due to conflicts with other resources. These could include (but may not be limited to) areas with significant and/or sensitive cultural and natural resources or recreational facilities.
- Promote recreational opportunity in balance with cultural resources, winter wildlife habitat, riparian areas, and the fishery along Butte Creek.
- Prioritize trail maintenance and development to allow for non-motorized access and recreational use within the ACEC. Unauthorized trail construction, motorized or non-motorized including any user made mountain bike feature, is not allowed, and would be remediated.
- Equitable access to casual use mining will be provided. This includes development of 45” wide low-gradient pathways into popular casual use mining areas where feasible.
- Issuance of SRPs or authorization of group use that does not require a permit within Forks of Butte ERMA is allowed but may be constrained by other resources to promote sustainability and prevent resource damage. This would be determined on a case-by-case basis
- Prioritize obtaining easements from landowners to obtain administrative and public access.

Forks of Butte Creek ERMA – Alternative C

Outcome Objective

Same as Alternatives B and D

Management Actions and Allowable Use Decisions

- The ERMA would be day use only.
- Explore developing a designated, expanded amenity fee campground and restricting motorized access beyond the designated campground. Details of this campground would be considered and analyzed with site-specific implementation level NEPA.
- Explore developing cooperative management of the campground with other agencies or organizations where possible.
- Motor vehicle access to the campground would be seasonally closed.
- A gate and/or barriers would be installed and maintained.
- The campground, trail development and barriers would be analyzed and disclosed through site-specific implementation- level NEPA.
- Develop sustainable opportunities for casual use (recreational) level gold prospecting through non-motorized trail access. Motorized trail development is not allowed.
- Equestrian and mountain bike trail options may be limited to avoid resource impacts.
- Develop signage to indicate specific areas where casual use (recreational) mining is not allowed due to conflicts with other resources. These could include (but may not be limited to) areas with significant and/or sensitive cultural and natural resources or recreational facilities.
- Promote recreational opportunity in balance with cultural resources, winter wildlife habitat, riparian areas, and the fishery along Butte Creek.
- Prioritize trail maintenance and development to allow for non-motorized access and recreational use within the ACEC. Unauthorized trail construction motorized or non-motorized including any user made mountain bike feature, is not allowed, and would be remediated.
- Equitable access to casual use mining will be provided. This includes development of 45” wide low-gradient pathways into popular casual use mining areas where feasible.
- Issuance of SRPs or authorization of group use that does not require a permit within Forks of Butte ERMA is allowed but may be constrained by other resources to promote sustainability and prevent resource damage. This would be determined on a case-by-case basis.
- Prioritize obtaining easements from landowners to obtain administrative and public access.

H.7.5 Samoa Dunes ERMA

The Samoa Dunes ERMA (190 acres) is a park located near the City of Eureka and Arcata with wide variety of recreational activities, including hiking, surfing, fishing, sightseeing, beachcombing, OHV use, picnicking, and birdwatching (**Figure 9**).

Outcome Objective

Alternative B

Provide coastal recreation for both motorized and non-motorized recreational use.

Management Actions and Allowable Use Decisions

- Entire management area is closed to firearm and crossbow/bow shooting.
- Vehicles limited to daytime access, with nighttime gate closure one hour after sunset, and reopened daily one hour before sunrise.
- Continue to work with local governments in the management of the entire peninsula.
- Provide opportunities for off-road vehicle recreation.
- Provide opportunities for hiking, sightseeing, bird watching, picnicking, surfing, fishing that do not directly conflict with OHV use.
- Provide opportunities for OHV recreation by maintaining and improving OHV facilities and trails.
- Continue to apply for “Green Sticker” funding.
- Maintain and improve OHV park (staging area, riding trails, etc.) at Samoa Dunes
- Areas would be designated for both OHV use and non-motorized uses such as hiking, sightseeing, bird watching, picnicking, surfing, fishing.
- Identify areas closed to OHVs to prioritize non-motorized access for bird watching, surfing, picnicking, and other coastal recreational activities.
- Interpretation and education of natural and cultural resources unique to Samoa Dunes would be prioritized.
- Prepare a Samoa Dunes Recreation Area Management Plan (completed)

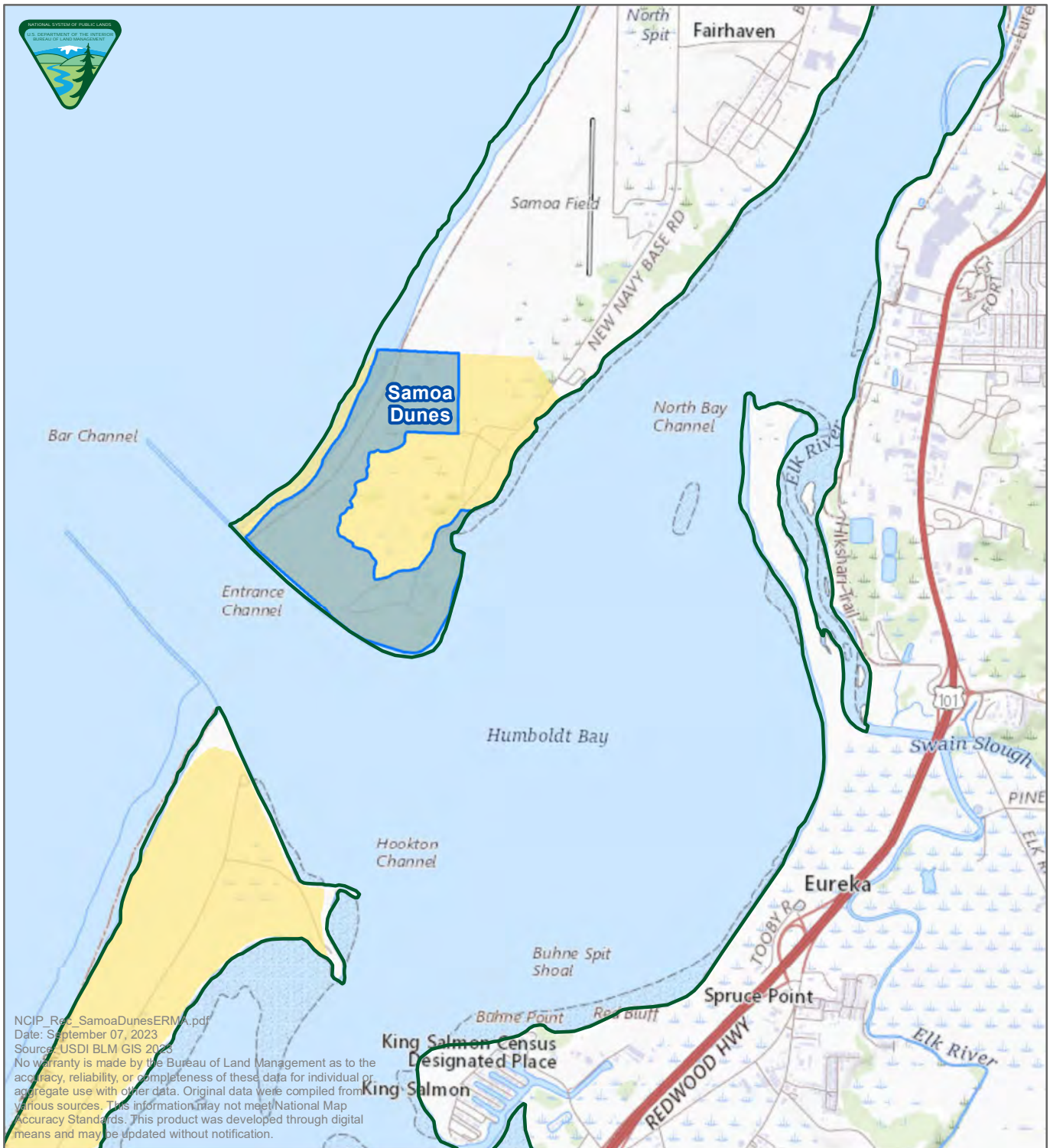




Figure 9: Samoa Dunes ERMA

-  Proposed extensive recreation management area (ERMA)
-  Bureau of Land Management



H.7.6 Trinity River ERMA

The Trinity River ERMA (9,500 acres) would be designated under Proposed Action. The Trinity River ERMA provides recreational opportunity from just below Lewiston, through Douglas City and Junction City before meeting the United States Forest Service (USFS) boundary just past the confluence of the North Fork of the Trinity with the mainstem of the Trinity River (**Figure 10**). The Trinity River is a “recreational” WSR and supports robust recreational and permitted commercial fishing. The river offers opportunities for non-motorized water-based recreation on calm class 1-2 waters in low flows, and more challenging class 2+ rapids at higher flows. Trailheads, campgrounds, and river access sites provide opportunities for camping and swimming. Non-motorized trail segments exist along the river providing recreational access and diversity of recreational activities.

Outcome Objective

Alternative B

Trinity River would not be designated as an ERMA.

Proposed Action

Under the Proposed Action, Trinity River would be designated as an ERMA. The Trinity River ERMA will provide a diverse and sustainable water-based recreation, non-motorized trail opportunities and camping where impacts to cultural and natural resources, river health, and fish populations can be sufficiently mitigated.

Management Actions and Allowable Use Decisions

- Optimized mountain bike trail (trails with mountain bike-specific trail features such as berms and jumps) and equestrian only trails are not allowed in riparian areas. Impacts from bikes and horses will be monitored in the riparian area.
- Maintain a predominantly natural landscape while promoting fishing access, non-motorized trails, expanded amenity fee campgrounds, dispersed camping, and additional water-based recreation opportunities.
- Expanded amenity fee campgrounds will be utilized to meet camping demand to minimize impacts to river health.
- Monitor day use areas and river segments for impacts to river health from commercial and non-commercial use. If adverse impacts are seen, carrying capacity could be established through site specific implementation level planning.
- SRPs and organized groups not requiring a permit will be allowed. Authorized uses, such as commercial fishing, will be monitored and managed to reduce impacts specific to the WSR outstandingly remarkable value of fish and fish habitat.
- Recreational development and restoration projects in the ERMA will be evaluated for recreational impacts, including impacts to SRP holders.
- Sign planning for natural and cultural resource information throughout the ERMA will ensure adequate coverage of all resource topics and points of cultural interests.

Overlapping Designations

Trinity River ERMA has also been designated as a WSR for recreation. See **Appendix I** for further details on WSRs.

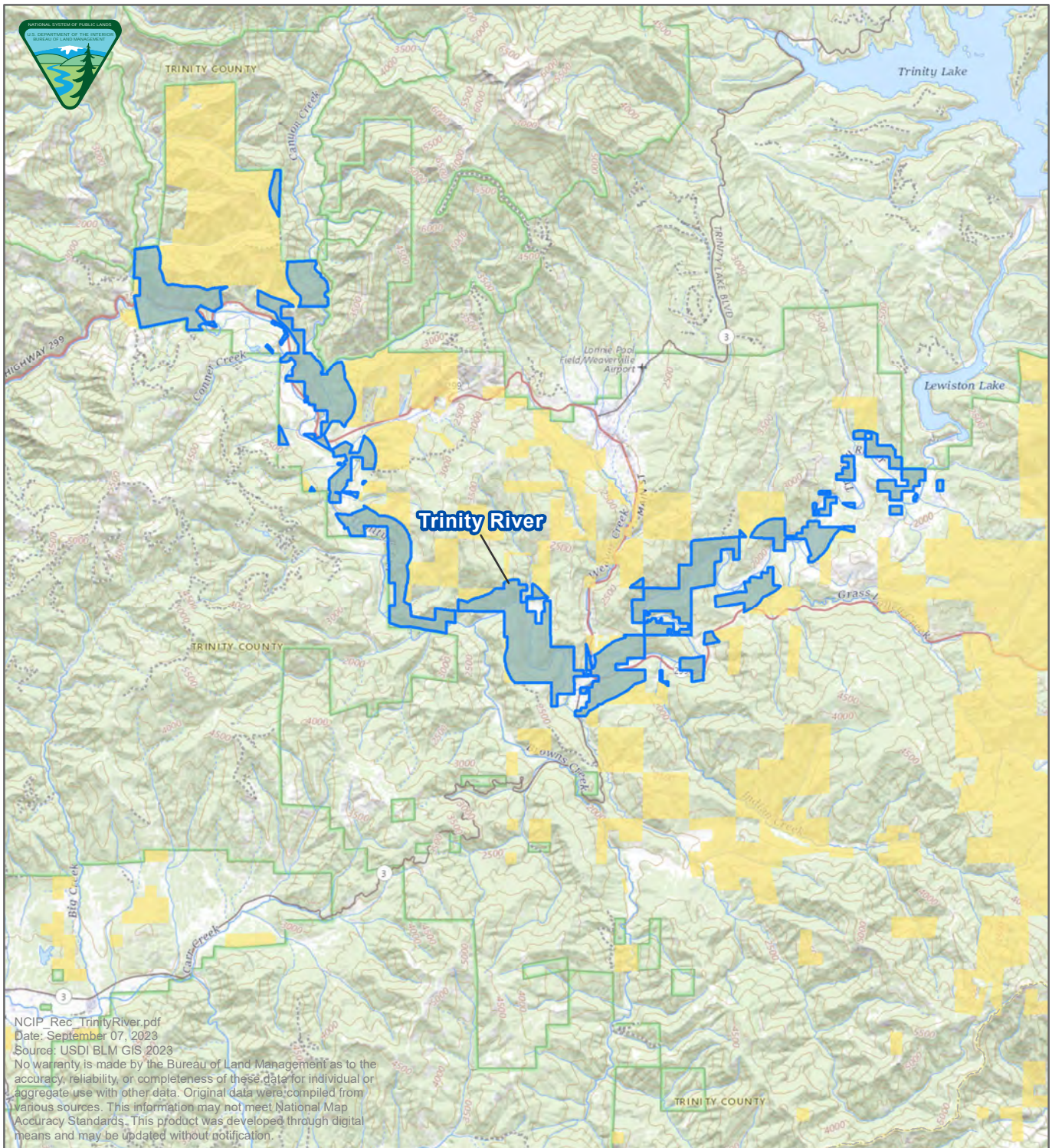




Figure 10: Trinity River ERMA

-  Proposed extensive recreation management area (ERMA)
-  Bureau of Land Management



H.7.7 Ewing Area ERMA

The Ewing Area ERMA would be designated under Alternatives C (1,000 acres) and D (1,000 acres). The Ewing Trail System is in Hayfork, California, off Highway 3 in Trinity County (**Figure 11**). The immediate area around Ewing Reservoir has seen some recent non-motorized multi-use trail development on Waterworks District land and there is a desire from members of the local community to improve and expand the trail system on BLM and USFS land in the area. Currently about 2 miles of trail exist, but an additional 10 miles of trails are planned to be built. Continued development of the trail system is conceptualized by community partners, and primarily envisioned to continue north.

Outcome Objective

The Ewing Trails ERMA provides a sustainable and diverse multi-use trail system, where multi-use trails are emphasized, and specialized trails may be allowed. Recreation and visitor services promote natural and cultural resource understanding, resource conservation and stewardship goals, while allowing for socioeconomic development and a high quality of life for the Hayfork community.

Management Actions and Allowable Use Decisions

- Implement a complete, sustainable multi-use trail system for hiking, bicycling, and equestrian use beginning from the Ewing Reservoir area.
- Consider connectivity beyond the scope of BLM parcels in trail development.
- Optimized mountain bike trails (trails with mountain bike-specific trail features such as berms and jumps), equestrian and hiker only trails are allowed where uses do not conflict.
- Forethought would be given to a complete trail system, where equity among user groups is prioritized.
- Maintain long term commitments and relationships with trails partners, Tribes, and adjacent landowners for cooperative planning of trails and recreation area developments and building and maintenance of the trail system.
- Promote volunteer engagement in coordination with partners.

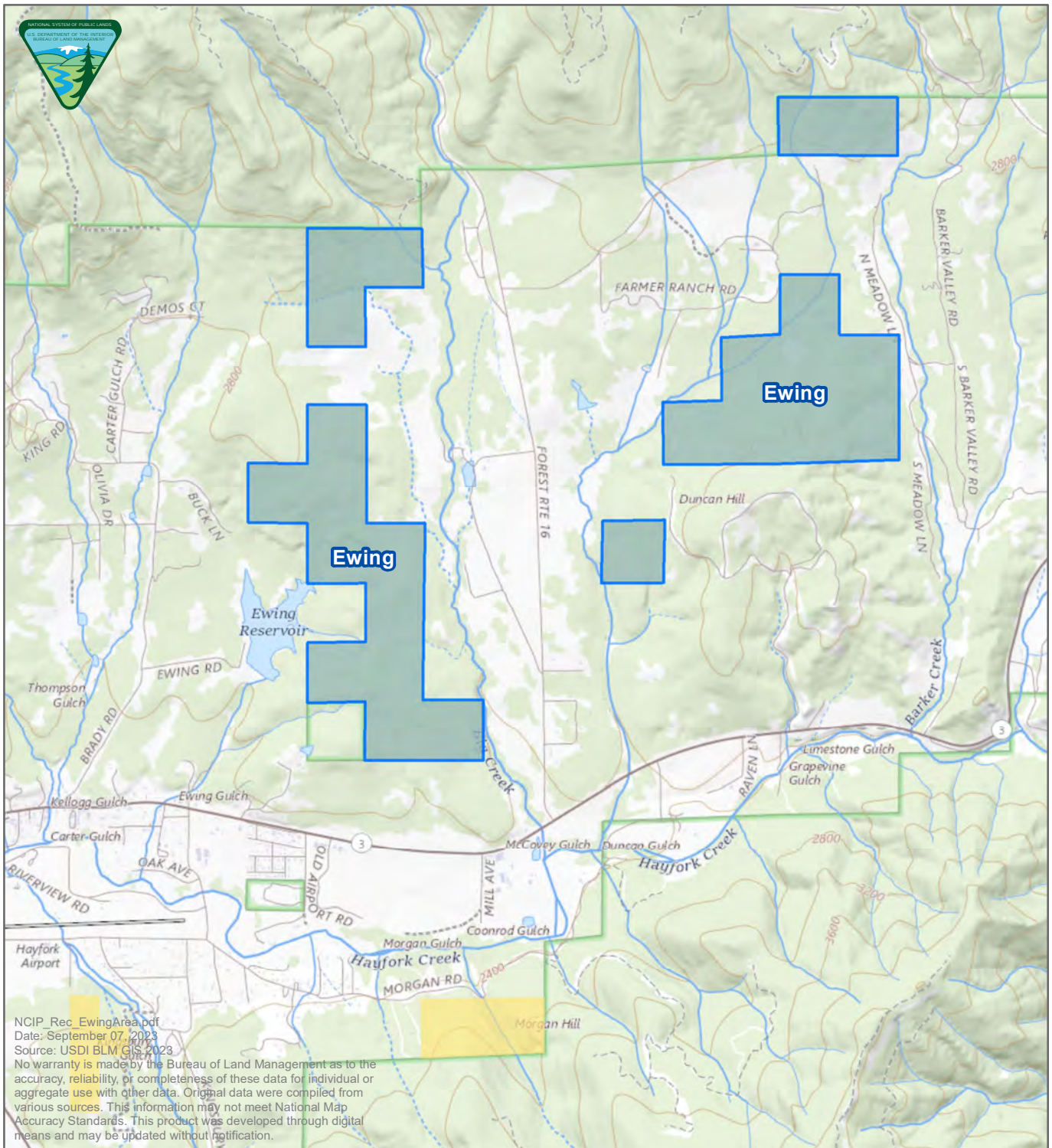


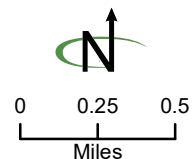


Figure 11: Ewing Area ERMA

-  Proposed extensive recreation management area (ERMA)
-  Bureau of Land Management



H.7.8 Ma-le'I Dunes ERMA

The Ma-le'I Dunes ERMA (180 acres) would be designated under Proposed Action. The Ma-le'I Dunes ERMA is located south of US Fish and Wildlife Service managed Lanphere Dunes at the upper end of the North Spit of Humboldt Bay, west of the Mad River Slough (**Figure 12**). Considered refuge for those looking for a different kind of hiking experience, Ma-le'I Dunes offers a diverse and dynamic coastal landscape of forests, salt marshes, sand dunes, and beaches. BLM managed Ma-le'I South is part of the greater Ma-le'I Dunes Cooperative Management Area. Ma-le'I North is managed by US Fish and Wildlife Service and is part of the Humboldt Bay National Wildlife Refuge. Trails are limited to pedestrian and equestrian access only.

Outcome Objective

Provide recreation opportunities and coastal access in a unique dune environment that is close to the population centers of Arcata and Eureka, while also prioritizing dune habitat restoration and protection of endangered plant species and aesthetic values.

Management Actions and Allowable Use Decisions

- Closed to mechanized and motorized vehicles.
- Closed to dispersed camping.
- Pedestrian and equestrian use is limited to designated trails to protect sensitive plant and animal habitat.
- Dogs under voice control are allowed at Ma-le'I South.
- Enhance natural values and dune ecosystem.
- Facilitate research and educational uses of unique dune ecosystems.
- Provide opportunities for other non-consumptive recreational uses (hiking, sightseeing, bird watching, picnicking).
- Patrol for OHV trespass in Manila Dunes area.
- Provide opportunities for hiking, sightseeing, bird watching, picnicking.
- Samoa Dunes Land Use Plan Amendment 1995 and Supplementary Rules
- Closed to all off-road vehicle use.
- Vehicles limited to daytime access, with nighttime gate closure on hour after sunset, and reopened daily on hour before sunrise.
- Vegetative gathering is prohibited between November 1 and May 1
- Use of firearms and archery equipment prohibited.
- Monitor botanical and cultural resources; protect sensitive species according to the BLM Sensitive Species Policies (BLM Manual Section 6840). Threatened and endangered species management will follow Section 7 consultation procedures in accordance with the Endangered Species Act.
- Conduct dune restoration and exotic plant removal.
- Parking areas may need to be modified in the future to accommodate increased use and shifting sand dunes.

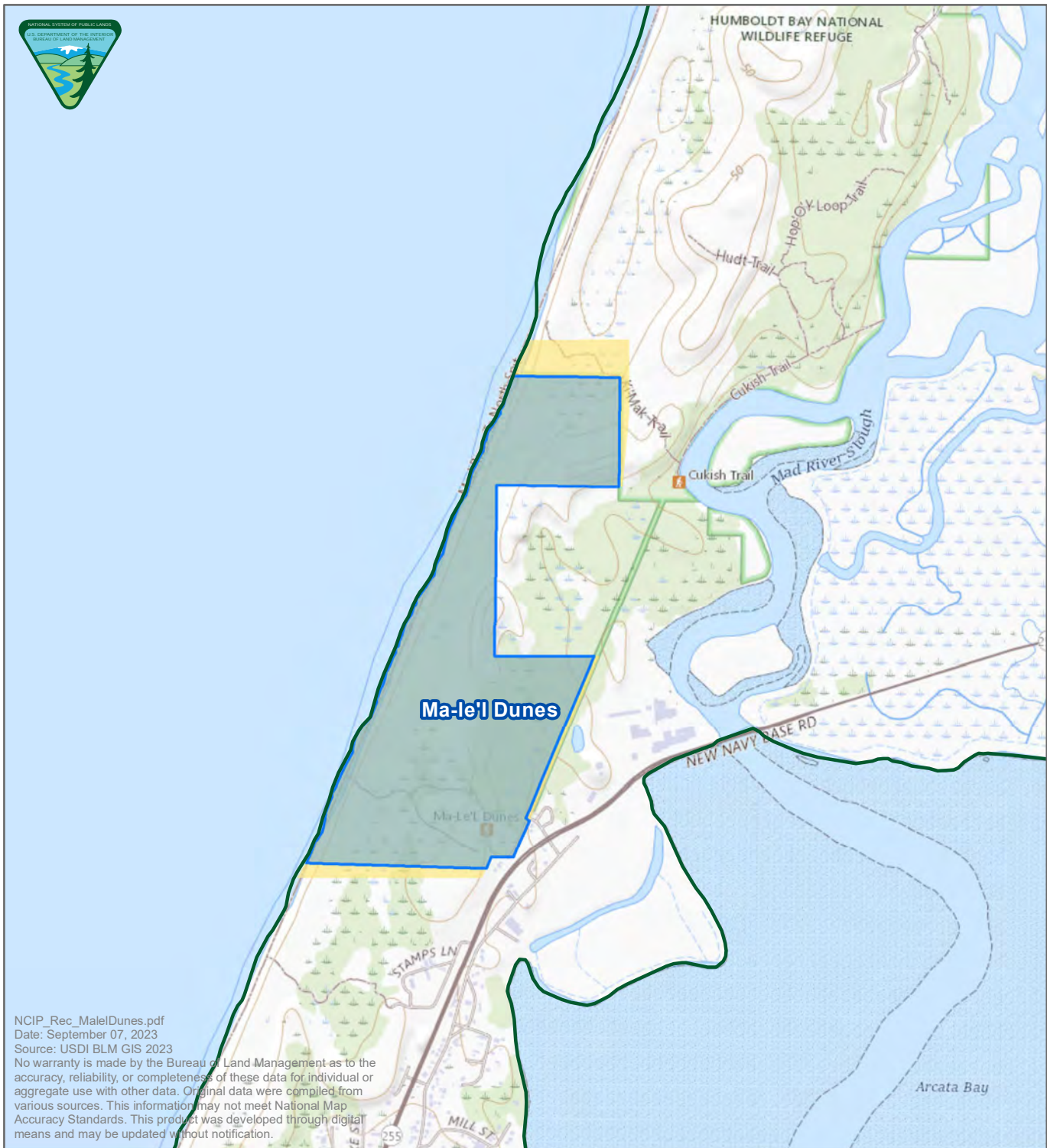



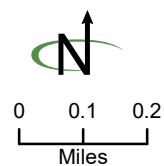


Figure 12: Ma-le'i Dunes ERMA

-  Proposed extensive recreation management area (ERMA)
-  Bureau of Land Management
-  NCIP planning area



H.7.9 Mike Thompson Wildlife Area ERMA

The Mike Thompson Wildlife Area ERMA (600 acres) would be designated under Alternative C. The Mike Thompson Wildlife Area ERMA is a long beach on a sandy spit south of the entrance to Humboldt Bay near Eureka, California (**Figure 13**). Common recreational uses are coastal access (fishing, beach combing, family play, and surfing), wildlife viewing, hiking, hunting, and limited OHV use.

ERMA Objective

Through collaboration with stakeholders and partners, provide outstanding recreation opportunities and continue to contribute to the local community's quality of life and is commensurate with protecting wildlife habitat, hunting, dune restoration, endangered species protection and aesthetic values.

Management Actions and Allowable Use Decisions

- No unmanned aerial vehicles would be allowed within 300 feet of temporary or permanent plover protection areas.
- OHV wave slope access may be restricted on a case-by-case basis as necessary to protect nesting plovers and/or plover habitat.
- Public lands are available for dispersed recreation.
- The area is open for day use only 1 hour before sunrise to 1 hour after sunset. During brant season, gate opens at 4:00 am.
- Day use only
- No OHVs allowed except on vehicle access corridors and wave slope. No vehicles on wave slope within plover restoration area during plover season.
- Dogs must be leashed on the west side of Jetty Road during plover season.
- No public use in plover restoration area during plover season.
- Kites, model airplanes, and campfires are not allowed within 300 feet of temporary or permanent plover protection areas.
- Lands on west side of Jetty Road open to equestrian use; all other lands closed to equestrian use.
- Firewood cutting or collecting is allowed by permit from September 16 – February 28. Casual collecting is allowed year-round.
- Firearm use is allowed only for hunting of waterfowl during State season. Target shooting is not allowed.
- Fireworks are not allowed.

Alternative B

- No UAVs would be allowed within 300 feet of temporary or permanent plover protection areas.
- OHV wave slope access may be restricted on a case-by-case basis as necessary to protect nesting plovers and/or plover habitat.

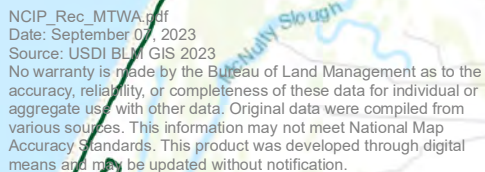
Alternative C




- No UAVs would be allowed within 300 feet of temporary or permanent plover protection areas.
- OHV wave slope access may be restricted on a case-by-case basis as necessary to protect nesting plovers and/or plover habitat.
- Vehicles limited to daytime access, 1 hour before sunrise to 1 hour after sunset.

Alternative D

- Continue to allow access for dispersed recreation opportunities such as fishing, hunting, and clamming while protecting sensitive wildlife, vegetation, natural dune processes, and cultural values.
- Aircraft and UAVs are prohibited without a Special Use Permit per CDFW regulations.
- Vehicle wave slope access may be restricted on a case-by- case basis as necessary to protect nesting plovers and/or plover habitat
- Plover nesting season is from March 1- Sept 15.

See ACEC section for additional management decisions.



-  Proposed extensive recreation management area (ERMA)
-  Bureau of Land Management
-  NCIP planning area



H.7.10 Sacramento River Bend ERMA

The Sacramento River Bend ERMA (20,400 acres) would be designated under the Proposed Action.

The Sacramento River Bend ERMA is characterized by rolling oak Savannah with Tuscan Butte formation rock throughout. The Sacramento River forms a primary boundary to the west, and a network of tributaries cross the recreation area. A multi-use, non-motorized trail system with an equestrian emphasis extends through the landscape, offering diverse and expansive views. Payne's Creek provides water for the prominent Payne's Creek Wetlands area. Trail development is limited in wetland areas to preserve the wetland ecosystem, a vital habitat for migratory birds and native species.

Outcome Objective

The Sacramento River Bend ERMA will offer a diversity of sustainable, multi-use non-motorized trails (for example, hiking and equestrian use trails). Additionally, hunting, camping, and wildlife viewing opportunities will be provided in tandem with natural and cultural resource conservation.

Management Actions and Allowable Use Decisions

- Trail development will only occur where resource impacts may be sufficiently mitigated or avoided and where development is consistent with natural and cultural resource management and provides enhanced recreational experience.
- Eliminate redundant trails and provide a planned trail system with well-designed connections.
- Use equestrian design standards as well as standard multi-use guidance to promote trail sustainability.
- Identify and authorize as part of trail system high-use water access points for watering horses. Ensure these access points can be maintained long-term, are safe for users, and consistent with natural and cultural resource management.
- Mountain bike only and optimized mountain bike trails (trails with mountain bike-specific trail features such as berms and jumps) are not allowed.
- Trail closures would occur when needed to protect public health and safety and natural and cultural resources.
- As needed, identify areas within the ERMA where no trails would be developed to retain the relevance and importance values of the ACEC.
- Additional trail development opportunities would be considered only when consistent with the lands with wilderness characteristics management, VRM class II designation, and relevance and importance values of the ACEC where each standard is applicable.
- Prioritize a safe and sustainable environment for day-users.
- Camping is prohibited within 0.25 miles of roads in the Sacramento Bend ERMA.
- Backpackers must camp only within the area open to camping and at least 50 feet from the trail.
- Continue to allow designated dispersed camping in the Massacre Flat area.
- Provide safe and sustainable opportunities for hunting and fishing.
- Maintain recreational fishing and hunting access, while promoting wetlands conservation.
- Limit target shooting to designated areas. Engage with community to determine designated shooting areas. Identification of those areas would be analyzed and disclosed through subsequent implementation-level NEPA.

- Provide extensive visitor services to promote stewardship goals and minimize impacts.
- Sign planning for cultural resource information throughout the ERMA will ensure adequate coverage of resource topics and points of cultural interests.
- Provide signage and education regarding resource stewardship rules and ethics to provide visitors with a clear understanding of rules and how they relate to resource management.
- Special recreation permits and organized groups not requiring a permit are allowed when compatible with natural and cultural resource management.
- Limit SRP and organized group uses to minimize resource impacts to the relevant and important values of the ACEC in spring and fall. These potential future limitations could include:
 - Limitations on group size
 - Limitations of number of groups annually
 - Closure of impacted areas to organized events.
 - Explore fee-based camping opportunities based on public demand and to meet diverse user group needs, including general recreation and equestrian uses, while also protecting relevance and importance values of the ACEC.

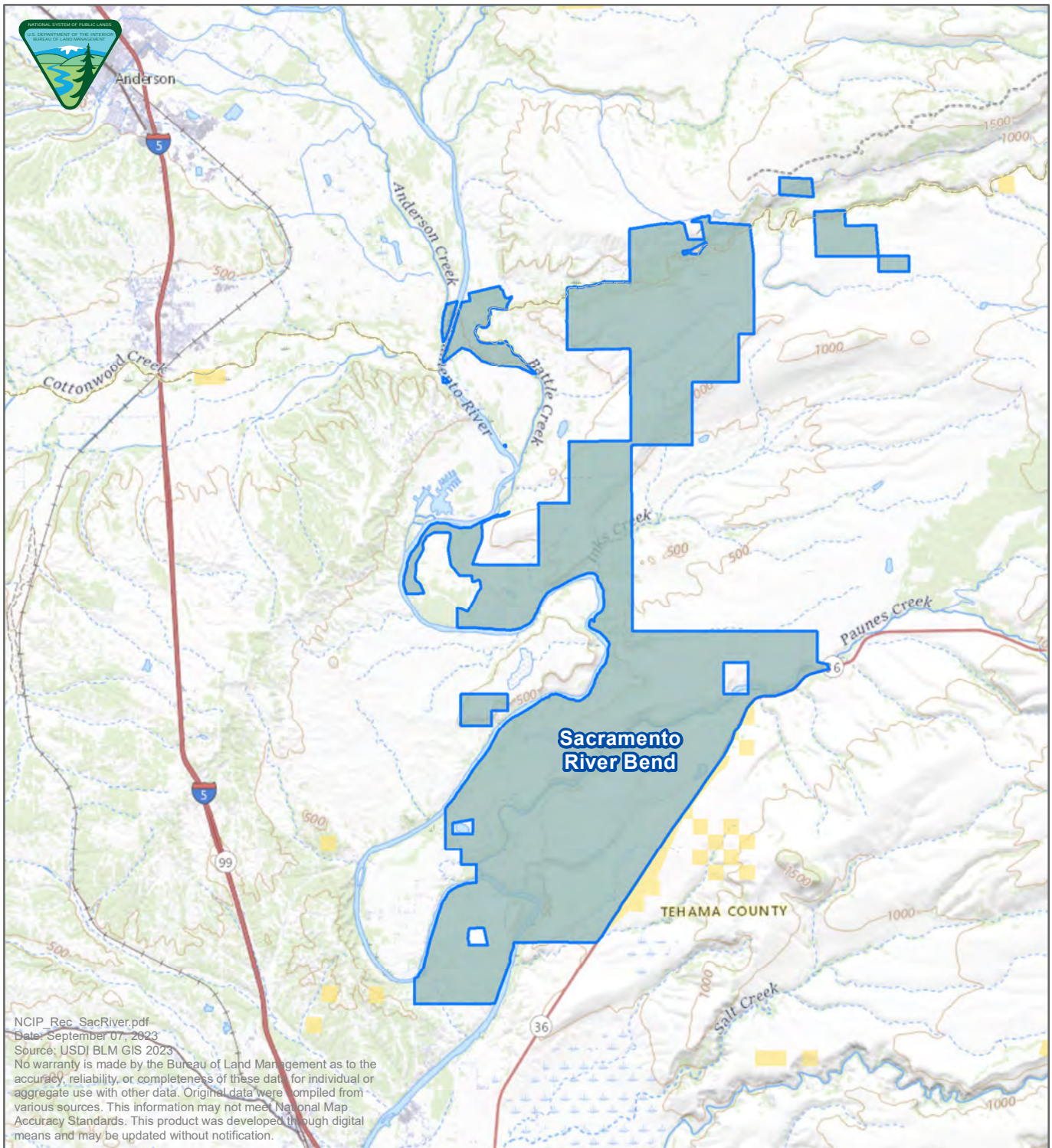




Figure 14: Sacramento River Bend ERMA

-  Proposed extensive recreation management area (ERMA)
-  Bureau of Land Management



H.7.11 Weaverville Community Forest ERMA

The Weaverville Community Forest (WCF) ERMA (3,100 acres) would be designated under the Proposed Action. The WCF is a cooperatively managed area of BLM and USFS lands that surround the community of Weaverville in Trinity County (**Figure 15**). There is a trail system within WCF that is popular with local communities, and there is interest in enhancing the trail system to further encourage economic growth in the area through tourism. Enhancement of the trail area is also aimed at improving quality of life for locals through connection to nature, and improved health and wellness. Over the last two decades, the community has shown great interest in cooperatively managing the area to ensure community needs are met and voices are heard.

Outcome Objective

Support recreational opportunity enhancement within the WCF as appropriate with respect to natural and cultural resources to increase quality of life and promote socioeconomic development within the area.

Management Actions and Allowable Use Decisions

- Close the WCF to dispersed camping in accordance with the existing County ordinance.
- Work collaboratively with the WCF Steering Committee, partners, and Tribes to facilitate recreational development.

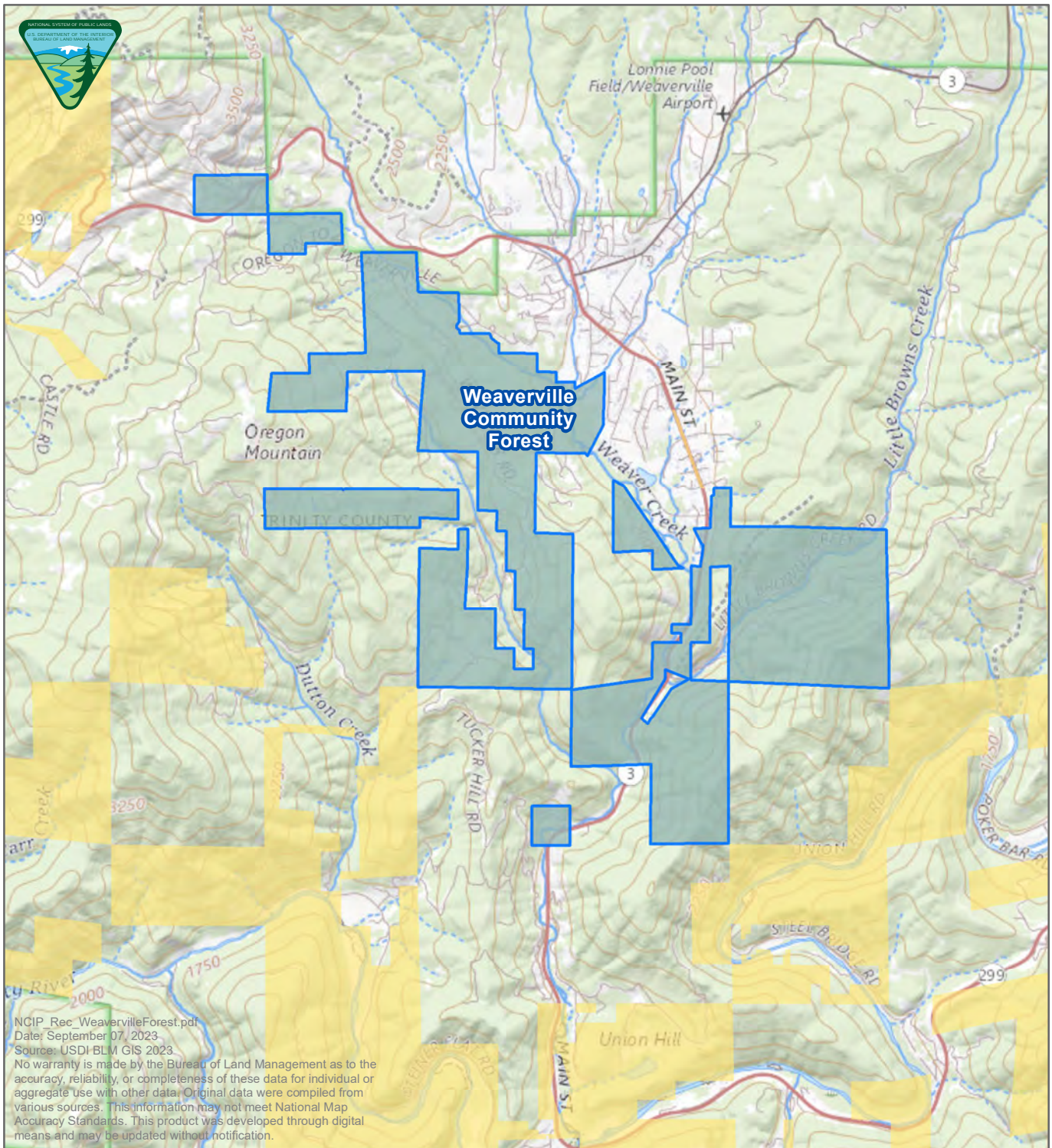


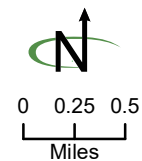


Figure 15: Weaverville Community Forest ERMA

-  Proposed extensive recreation management area (ERMA)
-  Bureau of Land Management



Appendix I

Wild and Scenic River Suitability Report

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**US Department of the Interior
Bureau of Land Management
Redding and Arcata Field Offices**

Northwest California Integrated Resource Management Plan



WILD AND SCENIC RIVER SUITABILITY REPORT

March 2024

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TABLE OF CONTENTS

Chapter	Page
CHAPTER 1. INTRODUCTION	1-1
1.1 Study Area	1-5
1.2 Steps in the Wild and Scenic River Study Process	1-5
1.3 Summary of Suitability Findings	1-7
CHAPTER 2. SUITABILITY DETERMINATIONS: SUITABLE SEGMENTS	2-1
2.1 Battle Creek Complex (Battle Creek, North Fork Battle Creek and South Fork Battle Creek)	2-1
2.1.1 Suitability Factors	2-2
2.1.2 Land Use Plan Alternatives	2-6
2.1.3 Suitability Determination	2-7
2.2 Beegum Creek	2-7
2.2.1 Suitability Factors	2-7
2.2.2 Land Use Plan Alternatives	2-10
2.2.3 Suitability Determination	2-10
2.3 Butte Creek (Sacramento River) Complex (Butte Creek I Segment B, and West Branch Butte Creek I)	2-11
2.3.1 Suitability Factors	2-11
2.3.2 Land Use Plan Alternatives	2-16
2.3.3 Suitability Determination	2-16
2.4 Canyon Creek	2-16
2.4.1 Suitability Factors	2-17
2.4.2 Land Use Plan Alternatives	2-20
2.4.3 Suitability Determination	2-20
2.5 Cedar Creek Complex (Cedar Creek Segment A, Cedar Creek Segment B, Cedar Creek Tributary 1, Cedar Creek Tributary 2, North Fork Cedar Creek)	2-20
2.5.1 Suitability Factor	2-21
2.5.2 Land Use Plan Alternatives	2-24
2.5.3 Suitability Determination	2-24
2.6 Clear Creek Complex (Clear Creek Segment A, Clear Creek Segment B, and Clear Creek Segment C)	2-25
2.6.1 Suitability Factors	2-25
2.6.2 Land Use Plan Alternatives	2-30
2.6.3 Suitability Determination	2-30
2.7 Cottonwood Creek Complex (Middle Fork Cottonwood Creek, North Fork Cottonwood Creek, South Fork Cottonwood Creek)	2-31
2.7.1 Suitability Factors	2-32
2.7.2 Land Use Plan Alternatives	2-35
2.7.3 Suitability Determination	2-36
2.8 Elder Creek Complex (Elder Creek, Elder Creek Tributaries, Paralyze Canyon and Tributaries, and Misery Creek)	2-36
2.8.1 Suitability Factors	2-37
2.8.2 Land Use Plan Alternatives	2-40
2.8.3 Suitability Determination	2-40

2.9	Elk Creek Complex (Eden Creek, Eden Creek Tributary 1, Eden Creek Tributary 2, Elk Creek, Deep Hole Creek).....	2-41
2.9.1	Suitability Factors.....	2-42
2.9.2	Land Use Plan Alternatives.....	2-45
2.9.3	Suitability Determination	2-45
2.10	Hayshed Creek.....	2-45
2.10.1	Suitability Factors.....	2-46
2.10.2	Land Use Plan Alternatives.....	2-48
2.10.3	Suitability Determination	2-49
2.11	Hulls Creek Complex (Brin Canyon Creek, Casoose Creek, Horse Canyon Creek, Hulls Creek Segment A and Hulls Creek Segment B).....	2-49
2.11.1	Suitability Factors.....	2-50
2.11.2	Land Use Plan Alternatives.....	2-53
2.11.3	Suitability Determination	2-53
2.12	Indian Creek (Trinity River) Complex (Indian Creek I Segment A, Indian Creek I Segment B, and Indian Creek I Segment C).....	2-54
2.12.1	Suitability Factor.....	2-54
2.12.2	Land Use Plan Alternatives.....	2-58
2.12.3	Suitability Determination	2-58
2.13	Lacks Creek Complex (Lacks Creek and Lacks Creek Tributaries).....	2-58
2.13.1	Suitability Factors.....	2-59
2.13.2	Land Use Plan Alternatives.....	2-62
2.13.3	Suitability Determination	2-62
2.14	Sacramento River Complex (Inks Creek, Inks Creek tributary, Massacre Creek, Paynes Creek, Sacramento River Segments A-F, Sacramento River Bend Tributary 1, Sacramento River Bend Tributary 2, Sevenmile Creek, Sevenmile Creek Tributaries, and Turtle Creek)	2-63
2.14.1	Suitability Factors.....	2-65
2.14.2	Land Use Plan Alternatives.....	2-71
2.14.3	Suitability Determination	2-72
2.15	Shasta River Complex (Shasta River Segment A and Shasta River Segment B).....	2-72
2.15.1	Suitability Factors.....	2-72
2.15.2	Land Use Plan Alternatives.....	2-76
2.15.3	Suitability Determination	2-76
2.16	Thatcher Creek.....	2-76
2.16.1	Suitability Factors.....	2-76
2.16.2	Land Use Plan Alternatives.....	2-79
2.16.3	Suitability Determination	2-80
2.17	West Weaver Creek Complex (West Weaver Creek, West Weaver Creek Tributary, and Grub Gulch)	2-80
2.17.1	Suitability Factors.....	2-80
2.17.2	Land Use Plan Alternatives.....	2-84
2.17.3	Suitability Determination	2-84
CHAPTER 3. SUITABILITY DETERMINATION: NOT SUITABLE SEGMENTS		3-1
3.1	Ancestor Creek	3-1
3.1.1	Suitability Factors.....	3-1
3.1.2	Land Use Plan Alternatives.....	3-4
3.1.3	Suitability Determination	3-4

3.2	Baker Creek.....	3-4
3.2.1	Suitability Factors.....	3-5
3.2.2	Land Use Plan Alternatives.....	3-8
3.2.3	Suitability Determination	3-8
3.3	Bear Creek Complex (Bear Creek Segment A and Bear Creek Segment B)	3-8
3.3.1	Suitability Factors.....	3-8
3.3.2	Land Use Plan Alternatives.....	3-12
3.3.3	Suitability Determination	3-12
3.4	Bell Springs Creek Complex (Bell Springs Creek and Bell Springs Creek Tributary).....	3-12
3.4.1	Suitability Factors.....	3-13
3.4.2	Land Use Plan Alternatives.....	3-16
3.4.3	Suitability Determination	3-16
3.5	Big Chico Creek Complex (Big Chico Creek Segment A, Big Chico Creek Segment B)	3-16
3.5.1	Suitability Factors.....	3-17
3.5.2	Land Use Plan Alternatives.....	3-20
3.5.3	Suitability Determination	3-20
3.6	Board Tree Canyon	3-20
3.6.1	Suitability Factors.....	3-21
3.6.2	Land Use Plan Alternatives.....	3-23
3.6.3	Suitability Determination	3-24
3.7	Butler Creek	3-24
3.7.1	Suitability Factors.....	3-24
3.7.2	Land Use Plan Alternatives.....	3-27
3.7.3	Suitability Determination	3-27
3.8	Butte Creek 1 Segment A (Sacramento River)	3-27
3.8.1	Suitability Factors.....	3-28
3.8.2	Land Use Plan Alternatives.....	3-30
3.8.3	Suitability Determination	3-30
3.9	Butte Creek 2 (Van Duzen River) Complex (Butte Creek 2, Butte Creek 2 Tributary 1, Butte Creek Tributary 2)	3-31
3.9.1	Suitability Factors.....	3-31
3.9.2	Land Use Plan Alternatives.....	3-34
3.9.3	Suitability Determination	3-35
3.10	Cedar Gulch.....	3-35
3.10.1	Suitability Factors.....	3-35
3.10.2	Land Use Plan Alternatives.....	3-38
3.10.3	Suitability Determination	3-38
3.11	Chamise Creek Complex (Chamise Creek and Chamise Creek Tributaries)	3-38
3.11.1	Suitability Factors.....	3-39
3.11.2	Land Use Plan Alternatives.....	3-42
3.11.3	Suitability Determination	3-42
3.12	Charlton Creek Complex (Charlton Creek and Charlton Creek Tributaries)	3-42
3.12.1	Suitability Factors.....	3-43
3.12.2	Land Use Plan Alternatives.....	3-46
3.12.3	Suitability Determination	3-46
3.13	Coleman Creek.....	3-46
3.13.1	Suitability Factors.....	3-46
3.13.2	Land Use Plan Alternatives.....	3-49

3.13.3	Suitability Determination	3-49
3.14	Cruso Cabin Creek.....	3-50
3.14.1	Suitability Factors.....	3-50
3.14.2	Land Use Plan Alternatives.....	3-53
3.14.3	Suitability Determination	3-53
3.15	Deer Creek.....	3-53
3.15.1	Suitability Factors.....	3-54
3.15.2	Land Use Plan Alternatives.....	3-57
3.15.3	Suitability Determination	3-57
3.16	East Branch South Fork Eel River	3-57
3.16.1	Suitability Factors.....	3-57
3.16.2	Land Use Plan Alternatives.....	3-60
3.16.3	Suitability Determination	3-60
3.17	Elkhorn Creek	3-61
3.17.1	Suitability Factors.....	3-61
3.17.2	Land Use Plan Alternatives.....	3-64
3.17.3	Suitability Determination	3-64
3.18	Eubank Creek	3-64
3.18.1	Suitability Factors.....	3-65
3.18.2	Land Use Plan Alternatives.....	3-68
3.18.3	Suitability Determination	3-68
3.19	Fish Creek	3-68
3.19.1	Suitability Factors.....	3-68
3.19.2	Land Use Plan Alternatives.....	3-71
3.19.3	Suitability Determination	3-71
3.20	Fourmile Creek	3-72
3.20.1	Suitability Factors.....	3-72
3.20.2	Land Use Plan Alternatives.....	3-75
3.20.3	Suitability Determination	3-75
3.21	Grindstone Creek	3-75
3.21.1	Suitability Factors.....	3-76
3.21.2	Land Use Plan Alternatives.....	3-79
3.21.3	Suitability Determination	3-79
3.22	Indian Creek 2 (Eel River Tributary)	3-79
3.22.1	Suitability Factors.....	3-79
3.22.2	Land Use Plan Alternatives.....	3-82
3.22.3	Suitability Determination	3-82
3.23	Mad River.....	3-83
3.23.1	Suitability Factors.....	3-83
3.23.2	Land Use Plan Alternatives.....	3-86
3.23.3	Suitability Determination	3-86
3.24	Mattole River Complex (Mattole River Segment A, Mattole River Segment B, Mattole River Segment C)	3-86
3.24.1	Suitability Factor.....	3-87
3.24.2	Land Use Plan Alternatives.....	3-90
3.24.3	Suitability Determination	3-90
3.25	McAdam Creek Complex (McAdam Creek and McAdam Creek Tributary).....	3-90
3.25.1	Suitability Factors.....	3-91
3.25.2	Land Use Plan Alternatives.....	3-94
3.25.3	Suitability Determination	3-94

3.26	Mill Creek	3-94
3.26.1	Suitability Factors	3-94
3.26.2	Land Use Plan Alternatives	3-98
3.26.3	Suitability Determination	3-98
3.27	Pipe Creek	3-98
3.27.1	Suitability Factors	3-98
3.27.2	Land Use Plan Alternatives	3-101
3.27.3	Suitability Determination	3-101
3.28	Rattlesnake Creek	3-102
3.28.1	Suitability Factors	3-102
3.28.2	Land Use Plan Alternatives	3-105
3.28.3	Suitability Determination	3-105
3.29	Sacramento River Segment G	3-106
3.29.1	Suitability Factors	3-106
3.29.2	Land Use Plan Alternatives	3-109
3.29.3	Suitability Determination	3-109
3.30	School Section Creek Complex (School Section Creek, School Section Creek Tributary 1, and School Section Creek Tributary 2)	3-109
3.30.1	Suitability Factors	3-110
3.30.2	Land Use Plan Alternatives	3-113
3.30.3	Suitability Determination	3-113
3.31	Scorpion Gulch	3-114
3.31.1	Suitability Factors	3-114
3.31.2	Land Use Plan Alternatives	3-117
3.31.3	Suitability Determination	3-117
3.32	Shell Rock Creek	3-117
3.32.1	Suitability Factors	3-117
3.32.2	Land Use Plan Alternatives	3-120
3.32.3	Suitability Determination	3-120
3.33	Sholes Creek	3-121
3.33.1	Suitability Factors	3-121
3.33.2	Land Use Plan Alternatives	3-124
3.33.3	Suitability Determination	3-124
3.34	Tenmile Creek	3-124
3.34.1	Suitability Factors	3-125
3.34.2	Land Use Plan Alternatives	3-127
3.34.3	Suitability Determination	3-128
3.35	Tom Long Creek Complex (Tom Long Creek, Tom Long Creek Tributaries)	3-128
3.35.1	Suitability Factors	3-128
3.35.2	Land Use Plan Alternatives	3-131
3.35.3	Suitability Determination	3-131
3.36	Tomki Creek	3-132
3.36.1	Suitability Factors	3-132
3.36.2	Land Use Plan Alternatives	3-135
3.36.3	Suitability Determination	3-135
3.37	White Rock Creek Complex (White Rock Creek, White Rock Creek Tributary 1, White Rock Creek Tributary 2, White Rock Creek Tributary 3, and White Rock Creek Tributary 4)	3-135
3.37.1	Suitability Factors	3-136
3.37.2	Land Use Plan Alternatives	3-139

	3.37.3 Suitability Determination	3-139
3.38	Woodman Creek.....	3-140
	3.38.1 Suitability Factors.....	3-140
	3.38.2 Land Use Plan Alternatives.....	3-143
	3.38.3 Suitability Determination	3-143
CHAPTER 4. REFERENCES		4-1

TABLES		Page
I-1	Eligible Rivers in 2023	I-2
I-2	River or Stream Segments Determined Suitable in 2023	I-7

FIGURES		Page
I-1	Designated and Eligible Rivers	I-3
I-2	Suitable Rivers	I-4
I-3	Wild and Scenic Rivers Study Process.....	I-6

APPENDIX

A	Maps of Suitable Rivers or Streams
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ACRONYMS AND ABBREVIATIONS

Acronym or Abbreviation	Full Phrase
Act	Porter-Cologne Water Quality Control Act
AFRP	Anadromous Fish Restoration Program
BLM	US Department of the Interior, Bureau of Land Management
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CWA	Clean Water Act
ERP	Ecosystem Restoration Program
ESA	Endangered Species Act of 1973
FERC	Federal Energy Regulatory Commission
Forest Service	US Department of Agriculture, Forest Service
National System	National Wild and Scenic Rivers System
NCIP	Northwest California Integrated Resource Management Plan
NMFS	National Marine Fisheries Service
NOAA Fisheries	National Oceanic and Atmospheric Administration
ORV	outstandingly remarkable value
regional Basin Plan	Regional Water Quality Control Plan
Regional Water Board	Regional Water Quality Control Board
STNF	Shasta-Trinity National Forest
TRRP	Trinity River Restoration Program
US	United States
USFWS	US Fish and Wildlife Service
WSR	wild and scenic river
WSRA	Wild and Scenic Rivers Act of 1968
WSRCD	Western Shasta Resource Conservation District

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Chapter I. Introduction

The United States (US) Department of the Interior, Bureau of Land Management (BLM), Arcata and Redding Field Offices are jointly preparing the Northwest California Integrated Resource Management Plan (NCIP) to replace and update the current management direction for these field offices. Section 5(d)(1) of the Wild and Scenic Rivers Act of 1968 (WSRA; Public Law 90-542; 16 United States Code 1271–1287) directs federal agencies to consider potential wild and scenic rivers (WSRs) in their land and water planning processes (“In all planning for the use and development of water and related land resources, consideration shall be given by all federal agencies involved to potential national wild, scenic, and recreational river areas”).

To fulfill this requirement, whenever the BLM undertakes land use planning, such as the NCIP, it analyzes river and stream segments that might be eligible and suitable for inclusion in the National Wild and Scenic Rivers System (National System). The BLM’s policy, direction, and guidance for identifying, evaluating, planning, and managing eligible and suitable WSRs and managing designated components of the National System is contained in Manual 6400, Wild and Scenic Rivers—Policy and Program Direction for Identification, Evaluation, Planning, and Management (BLM 2012).

This report describes the determinations made during the suitability phase of the WSR evaluation for the NCIP (see **Section 1.2**, Steps in the Wild and Scenic River Process). A separate report, the NCIP Wild and Scenic River Eligibility Report, presents the findings of the eligibility study conducted for the NCIP (BLM 2022), which is available at <https://eplanning.blm.gov/eplanning-ui/project/2012803/510>. As a result of the eligibility study, 117 river or stream segments on BLM-administered land within the NCIP were determined to be eligible for inclusion in the National System (see **Table I-1**, Eligible Rivers in 2023, and **Figure I-1**, Designated and Eligible Rivers). Background information pertaining to the WSR inventory process and eligibility study methodology is presented in the eligibility report. This report documents the suitability of those 117 eligible river or stream segments for inclusion in the National System. **Figure I-2**, Suitable Rivers, displays the rivers determined to be suitable.

Table I-1
Eligible Rivers in 2023

Ancestor Creek	Eden Creek Tributary 2	Rattlesnake Creek
Baker Creek	Elder Creek	Sacramento River Bend tributary 1 Segment A
Battle Creek	Elder Creek tributaries	Sacramento River Bend tributary 1 Segment B
Bear Creek Segment A	Elk Creek	Sacramento River Bend tributary 2
Bear Creek Segment B	Elkhorn Creek	Sacramento River Segment A
Beegum Creek	Eubank Creek	Sacramento River Segment B
Bell Springs Creek	Fish Creek	Sacramento River Segment C
Bell Springs Creek tributary	Fourmile Creek	Sacramento River Segment D
Big Chico Creek Segment A	Grindstone Creek	Sacramento River Segment E
Big Chico Creek Segment B	Grub Gulch	Sacramento River Segment F
Board Tree Canyon	Hayshed Creek	Sacramento River Segment G
Brin Canyon Creek	Horse Canyon Creek	School Section Creek
Butler Creek	Hulls Creek Segment A	School Section Creek tributary 1
Butte Creek 1 Segment A	Hulls Creek Segment B	School Section Creek tributary 2
Butte Creek 1 Segment B	Indian Creek 1 (Trinity River Tributary) Segment A	Scorpion Gulch
Butte Creek 2 (Van Duzen River Tributary)	Indian Creek 1 (Trinity River Tributary) Segment B	Sevenmile Creek
Butte Creek 2 tributary 1	Indian Creek 1 (Trinity River Tributary) Segment C	Sevenmile Creek tributaries
Butte Creek 2 tributary 2	Indian Creek 2 (Eel River Tributary)	Shasta River Segment A
Canyon Creek	Inks Creek	Shasta River Segment B
Casoose Creek	Inks Creek tributary	Shell Rock Creek
Cedar Creek Segment A	Lacks Creek	Sholes Creek
Cedar Creek Segment B	Lacks Creek tributaries	South Fork Battle Creek
Cedar Creek tributary 1	Mad River	South Fork Cottonwood Creek Segment A
Cedar Creek tributary 2	Massacre Creek	South Fork Cottonwood Creek Segment B
Cedar Gulch	Mattole River Segment A	Tenmile Creek
Chamise Creek	Mattole River Segment B	Thatcher Creek
Chamise Creek tributaries	Mattole River Segment C	Tom Long Creek
Charlton Creek	McAdam Creek	Tom Long Creek tributaries
Charlton Creek tributaries	McAdam Creek tributary	Tomki Creek
Clear Creek Segment A	Middle Fork Cottonwood Creek Segment A	Turtle Creek
Clear Creek Segment B	Middle Fork Cottonwood Creek Segment B	West Branch Butte Creek 1
Clear Creek Segment C	Mill Creek	West Weaver Creek
Coleman Creek	Misery Creek	West Weaver Creek tributary
Cruso Cabin Creek	North Fork Battle Creek	White Rock Creek
Deep Hole Creek	North Fork Cedar Creek	White Rock Creek tributary 1
Deer Creek	North Fork Cottonwood Creek	White Rock Creek tributary 2
East Branch South Fork Eel River	Paralyze Canyon and tributaries	White Rock Creek tributary 3
Eden Creek	Paynes Creek	White Rock Creek tributary 4
Eden Creek tributary 1	Pipe Creek	Woodman Creek

Source: BLM GIS 2023

Figure 1-1
Designated and Eligible Rivers

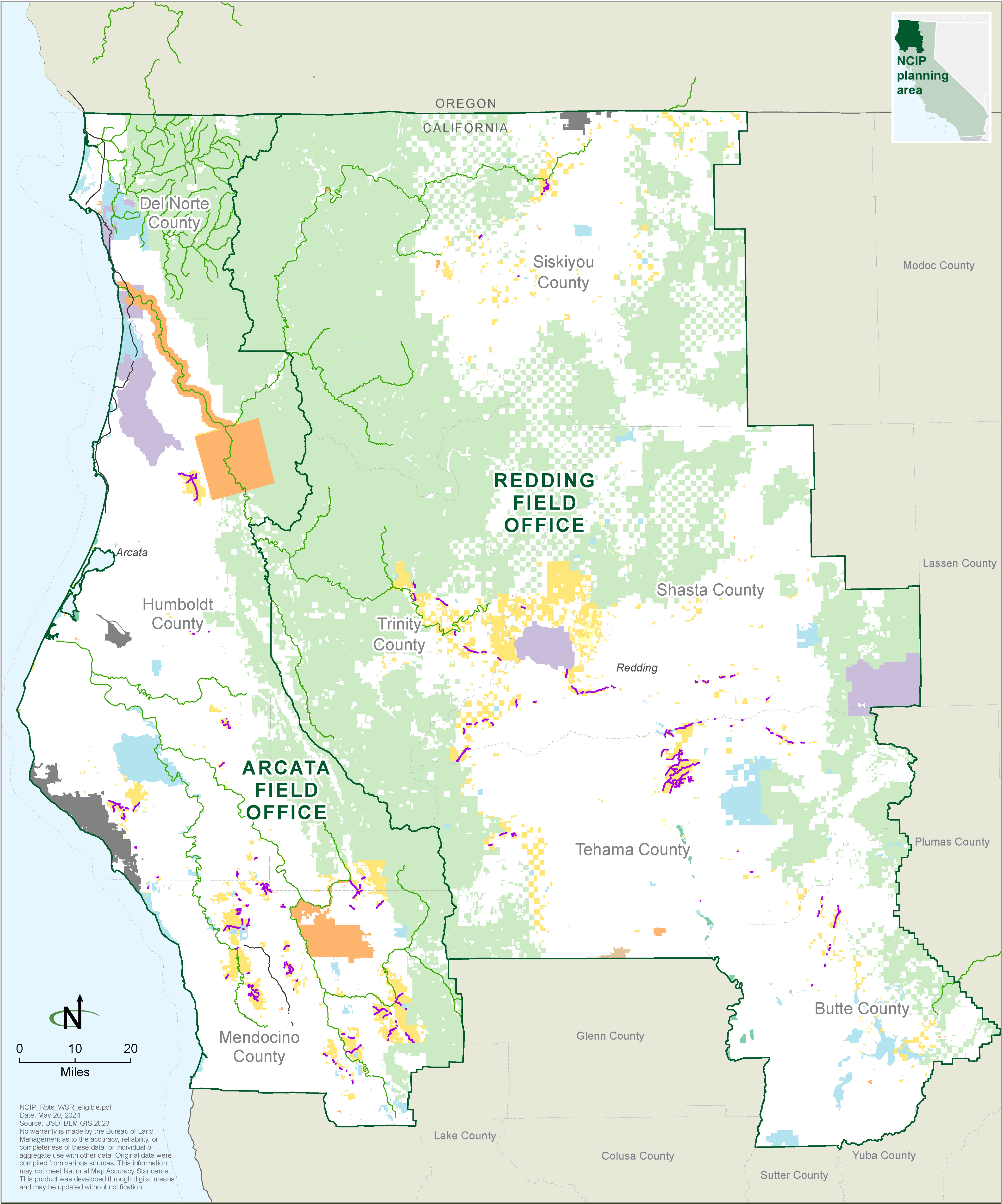
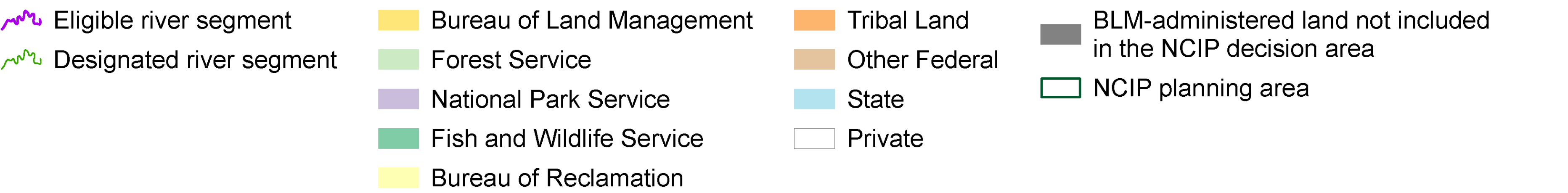



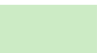









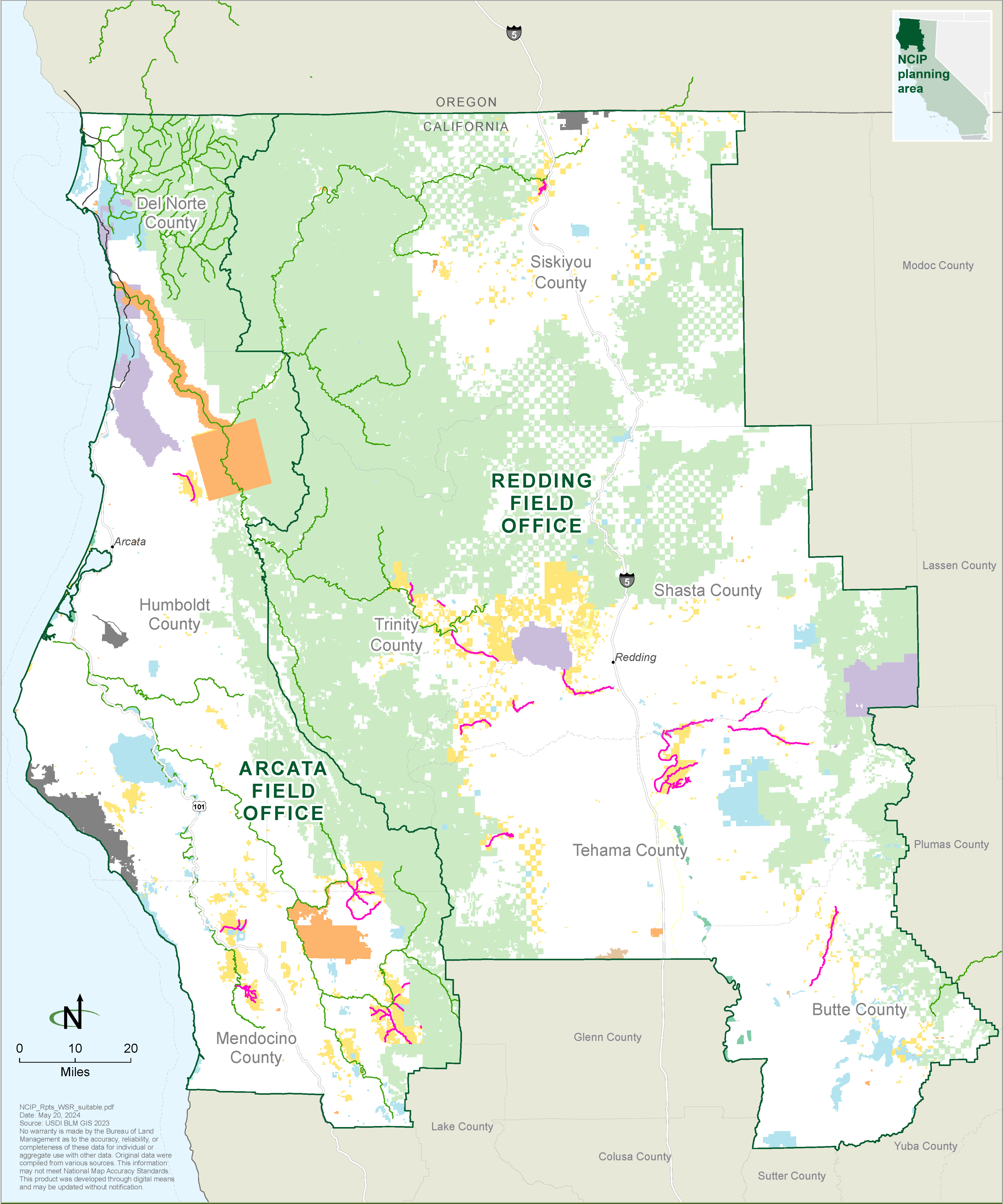


Figure 1-2
Suitable Rivers

-  Suitable river segment
-  Designated river
-  Bureau of Land Management
-  Forest Service
-  National Park Service
-  Fish and Wildlife Service
-  Bureau of Reclamation
-  Tribal Land
-  Other Federal
-  State
-  Private
-  BLM-administered land not included in the NCIP decision area
-  NCIP planning area



I.1 STUDY AREA

The NCIP planning area encompasses approximately 14.4 million acres of federal, state, and private lands in eight counties in northwestern California (Butte, Del Norte, Humboldt, Mendocino, Shasta, Siskiyou, Tehama, and Trinity Counties), including lands administered by the BLM's Arcata and Redding Field Offices. Management direction outlined in the NCIP will apply to 382,200 surface acres and 295,100 mineral estate (split estate) acres of BLM-administered lands.

I.2 STEPS IN THE WILD AND SCENIC RIVER STUDY PROCESS

The WSR study process is composed of three main components: the eligibility phase, assignment of a tentative classification, and the suitability phase. These steps are conducted in accordance with BLM Manual 6400, Wild and Scenic Rivers—Policy and Program Direction for Identification, Evaluation, Planning, and Management (BLM 2012) and the Wild and Scenic River Study Process technical report (Interagency Wild and Scenic Rivers Coordinating Council 1999). **Figure I-3**, Wild and Scenic Rivers Study Process, shows an overview of the WSR study process.

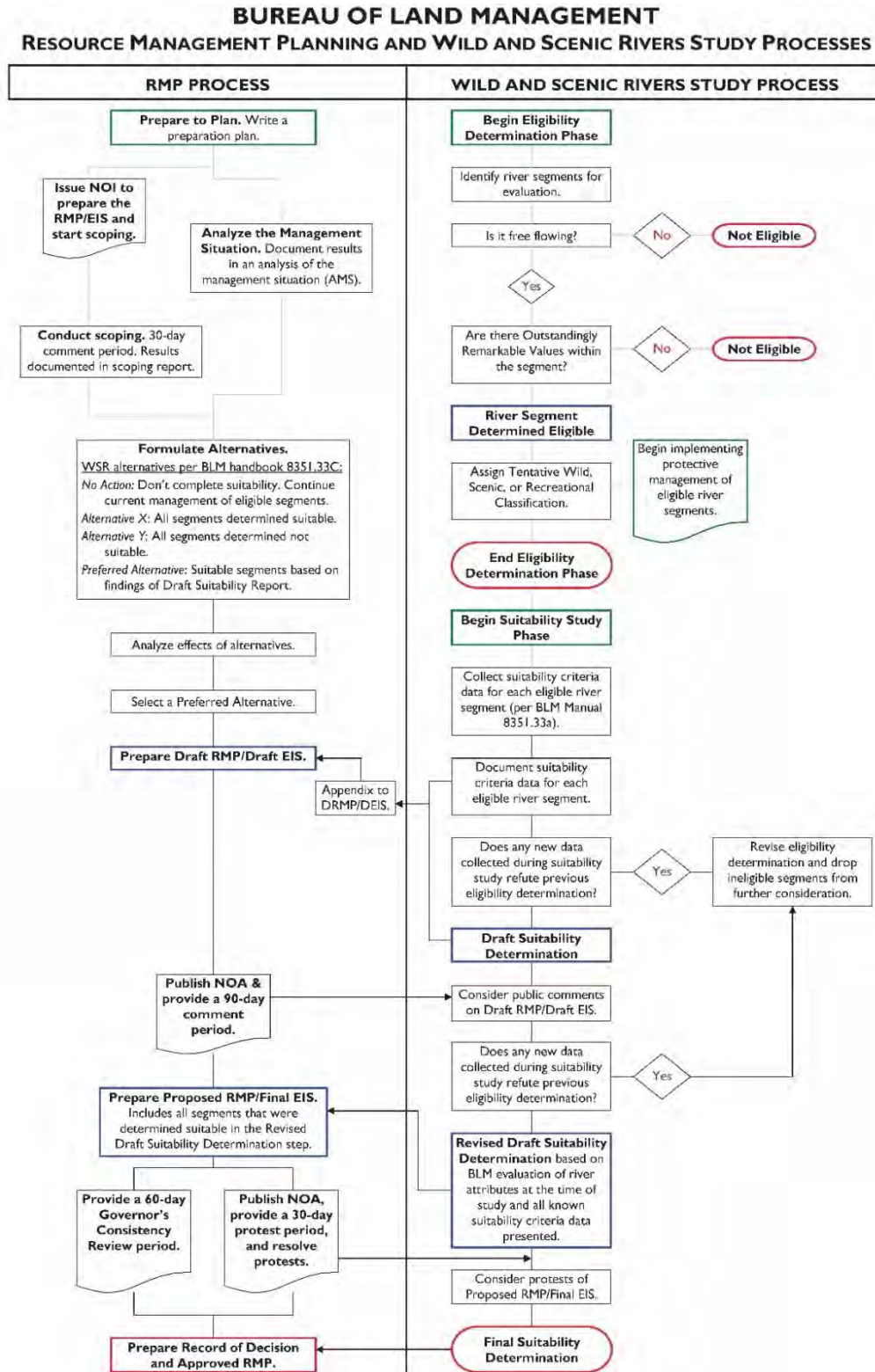
During all three steps, the analysis area for a river segment is the “river corridor.” BLM Manual 6400 defines the river corridor as “that portion of a river area either authorized by Congress or an agency for study and its immediate environment comprising a minimum area extending at least 0.25 miles (0.5 miles in Alaska) from each bank (BLM 2012).”

The eligibility phase determines whether a river corridor possesses the basic requirements (such as a free-flowing condition and the presence of one or more outstandingly remarkable values [ORVs]) to be eligible in the National System. Classification considers the level of development in the river corridor at the time of the eligibility study and assigns the corresponding classification, which from least to most developed are wild, scenic, and recreational. For more information on these steps, see the NCIP's Wild and Scenic River Eligibility Report (BLM 2022) at <https://eplanning.blm.gov/eplanning-ui/project/2012803/510>.

The purpose of the suitability phase is to determine whether eligible river segments are suitable for inclusion in the National System per the criteria of the WSRA. Suitability considerations include the environmental and economic consequences of designation and the manageability of a river if Congress were to designate it. The suitability evaluation does not result in actual designation but only a suitability determination for designation. The BLM cannot administratively designate a river segment into the National System via a planning decision or other agency decision, and no segment studied is or will be automatically designated as part of the National System. Only Congress can designate a WSR. The BLM's policy is to present the findings of this suitability to Congress, at which time Congress can decide to act on this information or not. In some instances, the Secretary of the Interior may designate a WSR when the governor of a state, under certain conditions, petitions for a river to be designated.

Members of Congress will ultimately choose the legislative language if any suitable segments are presented to them. Water-protection strategies and measures to meet the purposes of the WSRA will be the responsibility of Congress in any legislation proposed. BLM will manage suitable segments to protect the values for which they were found suitable for inclusion into the National System. Specific management decisions can be found in the NCIP RMP. Rivers found not suitable will be dropped from further consideration and managed according to the objectives outlined in the NCIP. Suitability determinations are draft until the record of decision for the NCIP is signed.

**Figure I-3
Wild and Scenic Rivers Study Process**



I.3 SUMMARY OF SUITABILITY FINDINGS

As documented in this report, 62 river or stream segments across 18 complexes were found suitable for inclusion in the National System (Table I-2, below).

Table I-2
River or Stream Segments Determined Suitable in 2023

River or Stream Segment	Length on BLM-Administered Land (miles)	Total Segment Length (miles)	Tentative Classification
Battle Creek	6.5	12.9	Recreational
Beegum Creek	4.7	4.7	Wild
Brin Canyon Creek	0.9	0.9	Scenic
Butte Creek I Segment B	4.5	16.1	Scenic
Canyon Creek	2.9	4.8	Recreational
Casoose Creek	1.6	3.5	Scenic
Cedar Creek Segment A	3.9	9.6	Wild
Cedar Creek Segment B	1.5	9.6	Wild
Cedar Creek Tributary I	0.5	9.6	Wild
Cedar Creek Tributary 2	0.4	9.6	Wild
Clear Creek Segment A	4.9	13.8	Scenic
Clear Creek Segment B	1.1	13.8	Scenic
Clear Creek Segment C	3.0	13.8	Scenic
Deep Hole Creek	3.1	4.3	Scenic
Eden Creek	3.3	4.8	Wild
Eden Creek Tributary I	1.2	1.5	Wild
Eden Creek Tributary 2	1.2	1.5	Wild
Elder Creek	1.7	4.6	Wild
Elder Creek Tributaries	2.2	3.3	Wild
Elk Creek	3.3	9.9	Scenic
Grub Gulch	0.5	0.5	Scenic
Hayshed Creek	1.7	3.7	Wild
Horse Canyon Creek	0.7	0.7	Scenic
Hulls Creek Segment A	4.9	16.3	Recreational
Hulls Creek Segment B	2.0	16.3	Scenic
Indian Creek I (Trinity River Tributary) Segment A	0.8	12.6	Wild
Indian Creek I (Trinity River Tributary) Segment B	2.9	12.6	Scenic
Indian Creek I (Trinity River Tributary) Segment C	1.7	12.6	Scenic
Inks Creek	1.0	1.0	Wild
Inks Creek Tributary	0.4	0.4	Wild
Lacks Creek	7.6	8.2	Wild
Lacks Creek Tributaries	3.6	3.6	Wild
Massacre Creek	1.8	1.8	Scenic
Middle Fork Cottonwood Creek Segment A	1.2	8.5	Recreational
Middle Fork Cottonwood Creek Segment B	3.4	8.5	Wild
Misery Creek	0.2	1.2	Wild
North Fork Battle Creek	0.9	7.3	Wild
North Fork Cedar Creek	1.0	9.6	Wild
North Fork Cottonwood Creek	2.1	7.0	Scenic
Paynes Creek	7.7	4.0	Scenic
Paralyze Canyon and Tributaries	3.6	7.9	Wild
Sacramento River Bend Tributary I Segment A	0.7	0.7	Wild

River or Stream Segment	Length on BLM-Administered Land (miles)	Total Segment Length (miles)	Tentative Classification
Sacramento River Bend Tributary 1 Segment B	0.3	0.3	Scenic
Sacramento River Bend Tributary 2	2.1	2.1	Scenic
Sacramento River Segment A	3.8	24.4	Recreational
Sacramento River Segment B	7.1	24.4	Scenic
Sacramento River Segment C	2.0	24.4	Recreational
Sacramento River Segment D	1.9	24.4	Recreational
Sacramento River Segment E	0.9	24.4	Wild
Sacramento River Segment F	0.1	24.4	Scenic
Sevenmile Creek	1.3	4.0	Scenic
Sevenmile Creek Tributaries	5.8	6.5	Scenic
Shasta River Segment A	0.3	5.5	Scenic
Shasta River Segment B	3.1	5.5	Recreational
South Fork Battle Creek	4.5	18.1	Recreational
South Fork Cottonwood Creek Segment A	2.0	9.1	Wild
South Fork Cottonwood Creek Segment B	1.1	9.1	Scenic
Thatcher Creek	1.6	2.7	Wild
Turtle Creek	4.3	4.3	Scenic
West Branch Butte Creek I	0.8	1.2	Scenic
West Weaver Creek	1.4	1.7	Scenic
West Weaver Creek Tributary	0.1	0.1	Scenic

Source: BLM GIS 2023

Chapter 2. Suitability Determinations: Suitable Segments

The following river or stream segments, grouped by complex, were found suitable for inclusion in the National System. Complex maps of the 62 suitable segments and an overview map of the inventoried and eligible river or stream segments are included in **Appendix A**, Maps of Suitable Rivers and Streams.

2.1 BATTLE CREEK COMPLEX (BATTLE CREEK, NORTH FORK BATTLE CREEK AND SOUTH FORK BATTLE CREEK)

Complex Description:	Battle Creek acts as a border between Tehama and Shasta Counties and flows from the foothills of the northern Sierra Nevada to its confluence with the Sacramento River.		
Field Office:	Redding	Map:	Map A-I in Appendix A
Suitability Determination:	All segments determined suitable for inclusion into the National System.		
Battle Creek			
BLM Segment Length:	6.5 miles	Area on BLM-Administered Land:	1,441 acres
Total Segment Length:	12.9 miles	Total Segment Area:	2,540 acres
ORVs:	Scenic, Recreation, Fish, Cultural	Tentative Classification:	Recreational
North Fork Battle Creek			
BLM Segment Length:	0.9 miles	Area on BLM-Administered Land:	164 acres
Total Segment Length:	12.9 miles	Total Segment Area:	530 acres
ORV:	Fish	Tentative Classification:	Wild
South Fork Battle Creek			
BLM Segment Length:	4.5 miles	Area on BLM-Administered Land:	1,021 acres
Total Segment Length:	12.9 miles	Total Segment Area:	2,216 acres
ORVs:	Scenic, Recreation, Fish, Cultural, Ecology	Tentative Classification:	Recreational

2.1.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Battle Creek Complex, four ORVs have been identified. ORVs for fish, recreation, cultural, and scenic values were identified as unique, rare, or exemplary at a comparative regional or national scale.

The Battle Creek Complex includes a scenic quality classification of A and offers a unique, regional opportunity for highly runnable, moderate rapids (challenging and accessible, appealing to a wider group of boaters) with a long season in a highly scenic, wildlife-rich riparian corridor. This segment is widely regarded as one of the most significant fish-producing streams in the Central Valley and supports federally listed endangered winter-run Chinook salmon, threatened spring-run salmon, and winter-run steelhead. Its perennial, cold water makes it a critical stronghold for the recovery of these salmonid species. The State of California also lists winter-run Chinook salmon as endangered (CDFW 2023).

The Battle Creek Complex and its rich salmon runs were attractive to prehistoric peoples who lived, worked, and played in extant villages; camps; rock shelters; and special use sites, such as flaked-stone workshops, along its banks. One midden site was excavated with human remains and unique artifacts; it showed indications of multiple periods of use. Another rock shelter exhibited evidence of Euro-American contact. A third location displayed a complex wall system of unknown use and is likely eligible for listing on the National Register of Historic Places as a larger district.

After receiving public comment on the suitability determinations, an additional ecological ORV was identified for the Battle Creek segment. The Battle Creek corridor supports several vulnerable plant communities, most notably the Great Valley Oak Riparian Forest and the Great Valley Cottonwood Riparian Forest. Seasonal floodplain inundation and the unique hydrology of Battle Creek provide the productive soils and water table required for these habitats to grow. These vegetation communities are extremely important habitat for riparian obligate species, including several ESA listed or candidate species. They also provide biodiverse connectivity corridors, flood protection, improved water quality, and carbon sequestration.

Factor 2: Current status of landownership and use in the area

Within the Battle Creek segment, BLM manages 1,441 acres (36 percent) of the river corridor, which totals 2,540 acres. The remaining 1,099 are a mix of private, US Fish and Wildlife Service (USFWS) and state lands. Within North Fork Battle Creek, BLM manages 164 acres (31 percent) of the river corridor, which totals 530 acres. The remaining 366 acres are state and private land. Within South Fork Battle Creek, BLM manages 1,021 acres (46 percent) of the river corridor, which totals 2,216 acres. The remaining 1,195 acres are private land.

Overlapping the corridor are two grazing allotments, Jellys/Battle Creek and Long Ranch. Currently, livestock grazing is not found to be impacting ORVs in the segment corridors, but livestock grazing may be curtailed if the segments were to be designated, and grazing is found to be impacting the ORVs.

All lands within the segment corridors are zoned by Tehama and Shasta Counties, as discussed in Factor 8 (see below). Federal and state landowners and other stakeholders in the area collaborate in the Greater Battle Creek Working Group to promote fisheries protection and restoration in the watershed. The Bureau of Reclamation and partners have been working for decades on the Battle Creek Salmon and

Steelhead Restoration Project in the upper reaches in order to restore approximately 42 miles of habitat on Battle Creek and an additional 6 miles of habitat on tributaries to Battle Creek for threatened and endangered salmon and steelhead, while minimizing the loss of clean and renewable energy produced at PG&E's Battle Creek Hydroelectric Project. More recently, the BLM and other partners have placed more focus on restoration and protection of the lower reaches of Battle Creek, as described in the 2021 Lower Battle Creek Scoping Study.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the existing conditions of the segments and protect the identified ORVs. Designation would enhance the threatened fish populations by helping to preserve existing habitat. Winter-run Chinook salmon, spring-run salmon, and winter-run steelhead would continue to be protected under the Endangered Species Act (ESA) and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

The Coleman Fish Hatchery and Coleman Powerhouse, operated by the US Fish and Wildlife Service, are within the corridor near the center of the middle segment. The Coleman Adaptive Management Plan, developed by the US Bureau of Reclamation in cooperation with the USFWS, outlines the management structure to ensure necessary instream flows for the benefit of naturally occurring salmonid populations (BOR 2020). While the Coleman Powerhouse, operated by Pacific Gas & Electric, collects water from Battle Creek for the Coleman National Fish Hatchery, its production does not affect the free-flowing nature of this segment.

Currently, grazing is not found to be impacting the ORVs in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORVs. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORVs. Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry. Segments with a recreational classification that are ultimately designated would be closed to mineral leasing, allow mineral material development with application of necessary conditions to protect resource values, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the eligible segments were added to the National System, the BLM would be most suited to manage the land and resources within this boundary, unless Congress designated another agency. A large portion of the Battle Creek segment corridors is also managed by the State of California and there could be an opportunity for co-management of the corridor between the two agencies.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection; however, it is assumed that the BLM would provide the majority of the administration, and the associated costs, for these segments.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. BLM administers approximately 39 percent of the corridor already. At this time, there are no plans for further acquisitions along the segment, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the USFWS, US Bureau of Reclamation, Pacific Gas & Power, California Department of Fish and Wildlife (CDFW), Greater Battle Creek Working Group, and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

In addition, the US Bureau of Reclamation has been conducting the Battle Creek Salmon and Steelhead Restoration Project on the upper reaches of Battle Creek since 1999. The project is aimed at restoring approximately 48 miles of Chinook and steelhead habitat along the upper reaches of Battle Creek and its tributaries. The project would enable safe passage for naturally produced salmonids and would facilitate their population growth and recovery (BOR 2020). WSR designation aligns with this project because designation would provide downstream protection and enhancement of the habitat and species.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

The parcels of the segment corridors zoned by Tehama and Shasta Counties include Agricultural/Upland, which allows primarily livestock grazing; Natural Resources Lands and Recreation, which allow for recreational, conservation, or light agricultural types of uses; Timber Production, allowing for timber and timber related activities; and Unclassified (Tehama County 2023; Shasta County 2023). These zoning types would generally support the protection of ORVs and the prevention of incompatible development.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to WSRs' free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA (California Endangered Species Act), as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA (National Oceanic and Atmospheric Administration) Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2014).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (Clean Water Act) (California Water Board 2023). The Regional Water Quality Control Board has jurisdiction in each county. The Regional Water Quality Control Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the Water Quality Control Plan for the North Coast Region (regional Basin Plan), and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate the Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were related to each Battle Creek and North Fork Battle Creek, and three comments related to South Fork Battle Creek during the public scoping period. All comments were supportive of the segments' designation as WSRs and specifically noted the anadromous fisheries supported by each segment (BLM 2022). During the public comment period, there were six comments received. The comments were supportive of designation and specifically the aid of protections to threatened salmon runs. There were no comments opposed to designating any of the Battle Creek Complex segments as WSRs.

Additionally, the Battle Creek Working Group was formed in the 1990s for the purpose of determining the most effective approach to restoring anadromous fish in the watershed. The working group continues to meet quarterly to review status of the ongoing restoration projects and discuss other management issues important to Battle Creek (Program 2023).

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the segments within the Battle Creek Complex as WSRs would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Central Valley Regional Board, enforces California water quality laws. Designation of the segments within the Battle Creek Complex as WSRs would be consistent with the Central Valley Regional Board's mission of protecting water quality.

Portions of these segments overlap with the Sacramento River Bend Area of Critical Environmental Concern (ACEC), leading to additional protective management actions that would support the protection and enhancement of ORVs.

Additionally, the Battle Creek Salmon and Steelhead Restoration Project is aimed at restoring approximately 48 miles of Chinook and steelhead habitat along the upper reaches of Battle Creek and its tributaries. Designation as a WSR would support this project in the consistent management, protection, and enhancement of the federally listed endangered winter-run Chinook salmon, threatened spring-run salmon, and winter-run steelhead.

Factor 12: The contribution to the river system or basin integrity

The designation of the segments within the Battle Creek Complex would provide a significant contribution to the river system, as the upper reaches are identified as eligible for inclusion and currently undergoing habitat and population restoration projects with the US Bureau of Reclamation. Designation would provide additional protections, enhancements, and monitoring for the lower reaches of Battle Creek complex, aligning these reaches with the US Bureau of Reclamation's restoration project. The lower reaches and watershed are a focus area for protection and restoration by various organizations, including the BLM, as described in the Lower Battle Creek Scoping Study completed in 2021. Designation would provide additional protections, enhancements, and monitoring for the lower reaches of Battle Creek complex, aligning these reaches with the restoration efforts in both the upper and lower watershed.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed new FERC (Federal Energy Regulation Commission) projects. There are no FERC projects proposed for the segments within the Battle Creek Complex outside of the existing Coleman Fish Hatchery along Battle Creek.

2.1.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Battle Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Battle Creek	Eligible	Suitable	Not Suitable	Suitable
North Fork Battle Creek	Eligible	Suitable	Not Suitable	Suitable
South Fork Battle Creek	Eligible	Suitable	Not Suitable	Suitable

2.1.3 Suitability Determination

The segments within Battle Creek Complex (Battle Creek, North Fork Battle Creek, and South Fork Battle Creek) were found to be **suitable for inclusion** in the National System based on the information within this report. Designation would provide consistent management of the river system and contribute to the ongoing state and local efforts to protect threatened and endangered species within the river. Additionally, there are collaborations ongoing to continue to restore, protect, and enhance portions of the Battle Creek Complex through other agencies and organizations.

2.2 BEEGUM CREEK

Corridor Description:	Beegum Creek is located on the border between Tehama and Shasta Counties and flows from the foothills of the northern Coast Ranges to its downstream boundary with Highway 36.		
BLM Segment Length:	4.7 miles	Area on BLM-Administered Land:	1,135 acres
Total Segment Length:	4.7 miles	Total Segment Area:	1,400 acres
ORVs:	Fish, Scenic	Field Office:	Redding
Tentative Classification:	Wild	Map:	Map A-2 in Appendix A
Suitability Determination:	Determined suitable for inclusion into the National System		

2.2.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Beegum Creek, two ORVs have been identified as making this segment a worthy addition to the National System. ORVs for fish and scenery were identified as unique, rare, or exemplary at a comparative regional or national scale.

Beegum Creek supports indigenous populations of state- and federally listed threatened spring-run Chinook salmon and federally listed threatened winter-run steelhead (CDFW 2023). The segment is noted for its value as a scenic resource. It is valued for the scenic views into the depths of the gorge as well as the views of the surrounding mountains, which include Beegum Peak and Sugarloaf Mountain.

Factor 2: Current status of landownership and use in the area

From the upstream boundary at the Shasta-Trinity National Forest (STNF) to the downstream terminus at Highway 36, the BLM manages 1,135 acres (45 percent) of the river corridor, which totals 1,400 acres. The remaining 265 acres are private land. Land within the river corridor is zoned by Shasta and Tehama Counties. Zoning classifications from Shasta and Tehama Counties include habitat protection and unclassified (Shasta County 2023), as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat.

Spring-run Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there is no FERC application for dams or diversions on file for this river segment (FERC 2023).

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Currently, timber harvesting or other vegetation management activities are not found to be impacting the ORVs in the river corridor; however, should these activities be found to impact ORVs, they may be modified in the segment's corridor to minimize impacts on the ORVs.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality. This segment is adjacent to the STNF, where its upstream reaches were determined as suitable for inclusion into the National System (Forest Service 1995). By designating the BLM-administered segment, a significant contiguous corridor would be established to protect and enhance ORVs.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the Beegum Creek segment were added to the National System, the BLM and US Department of Agriculture, Forest Service (Forest Service) would co-manage this segment.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Approximately 45 percent of the river corridor is already on BLM-administered land. At this time, there are no plans for further acquisitions along Beegum Creek, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Cooperative efforts with the Forest Service would likely benefit the ORVs in the river corridor. The scenic and fish resources within the river corridor continue upstream into the STNF, and shared

participation in the preservation and administration of Beegum Creek would support more consistent treatment of the ORVs.

Preservation and administration of the State-listed and federally listed species of salmon within Beegum Creek would also be supported by participation from state and federal agencies, including the CDFW and USFWS, who are both mandated to conserve listed resources. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Tehama and Shasta Counties. Zoning classifications from Shasta County include Habitat Protection and Unclassified (Shasta County 2023). The purpose of the habitat protection district is to protect the lands having significant wildlife habitat values. The unclassified district is intended to be applied as a holding district until a precise principal zone district has been adopted for the property. These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Zoning for the Tehama County portion of Beegum Creek includes Agricultural/Upland, which allows for primarily livestock grazing. Highway 36 is at the downstream end of the corridor; however, no other roads or other human-made structures are in the study area that would indicate any type of residential, commercial, industrial, or agricultural uses.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to WSRs' free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region 5 Central Valley Regional Water Quality Control Board has jurisdiction in Tehama County and portions of Shasta County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

One comment was received related to Beegum Creek during the public scoping period. The comment was supportive of the segment's designation as a WSR and specifically noted the fish and scenic ORVs met criteria for eligibility purposes (BLM 2022). During the public comment period, there were three comments received that were supportive of designation. There were no comments opposed to designating Beegum Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Beegum Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act is administered by the Central Valley Regional Board, who also enforces California water quality laws. Designation of Beegum Creek as a WSR would be consistent with the Central Valley Regional Board's mission of protecting water quality.

Additionally, portions of this segment overlap with the Beegum Creek Gorge ACEC, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to the river system or basin integrity

The designation of Beegum Creek would provide a significant contribution to the Beegum Creek river system, as the segment corridor contains the unique and spectacular Beegum Gorge. Upstream portions of Beegum Creek have been found eligible for WSR designation through the STNF, meaning designation of this segment corridor would create a continuous segment, approximately 7 miles long, from Highway 36 to the Beegum Creek Campground.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Beegum Creek (FERC 2023).

2.2.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Beegum Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Beegum Creek	Eligible	Suitable	Not Suitable	Suitable

2.2.3 Suitability Determination

Beegum Creek was found **suitable for inclusion** in the National System. This finding supports the suitable finding in the 1995 Land and Resource Management Plan for the STNF, which proposed designating

the Beegum Creek corridor from Round Bottom to the STNF's boundary as suitable for inclusion in the National System (Forest Service 1995).

The 5-mile-long portion of Beegum Creek administered by the BLM is adjacent to the STNF; together, the BLM and Forest Service portions of Beegum Creek would create a significant contiguous corridor protecting the identified ORVs. Designation of Beegum Creek may also contribute to more consistent management of the ORVs.

2.3 BUTTE CREEK (SACRAMENTO RIVER) COMPLEX (BUTTE CREEK I SEGMENT B, AND WEST BRANCH BUTTE CREEK I)

Complex Description:	The segments within the Butte Creek Complex are located in Butte County in the foothills of the Sierra Nevada Mountains and contribute to the Sacramento River.		
Field Office:	Redding	Map:	Map A-3 in Appendix A
Suitability Determination:	All segments determined suitable for inclusion into the National System.		
Butte Creek I Segment B			
BLM Segment Length:	4.5 miles	Area on BLM-Administered Land:	1,179 acres
Total Segment Length:	16.1 miles	Total Segment Area:	1,887 acres
ORV:	Scenic, Recreation, Fish, Geology, Historic	Tentative Classification:	Scenic
West Branch Butte Creek I			
BLM Segment Length:	0.8 miles	Area on BLM-Administered Land:	182 acres
Total Segment Length:	1.2 miles	Total Segment Area:	488 acres
ORV:	Scenic, Recreation, Fish, Geology, Historic	Tentative Classification:	Scenic

2.3.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the segments of the Butte Creek Complex, five ORVs have been identified as making this segment a worthy addition to the National System. Scenic, recreation, fish, geology, and historic ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

Butte Creek I Segment B and West Branch Butte Creek I have a scenic quality rating of A. Both of these segments provide diverse and high-quality recreational opportunities that include fishing, swimming, sunning, hiking, tubing, and picnicking. They are also an increasingly popular whitewater boating destination with unique rapids for the region.

The segments within Butte Creek Complex are all strongholds for federally listed threatened spring-run Chinook salmon. They are also some of the only streams in the Central Valley that have a genetically distinct wild population. These segments are important contributors to the recovery of threatened winter-run steelhead, and also support fall-run Chinook salmon.

Butte Creek I Segment B and West Branch Butte Creek I have eroded down through thousands of feet of Tertiary-aged volcanic rock into the underlying Sierra Nevada basement rock. Exposed along these corridors are outstanding examples of Tertiary auriferous stream channels and their associated drift mines, which are perched above the present creek beds; cross-cutting ultramafic intrusives; and exemplary geology of the northern Sierra Nevada. Much of the canyon's upper segment is steep and rugged, with sheer canyon walls and abrupt rock pinnacles. The water in the upper segment flows over a boulder-covered bed, with many spectacular waterfalls in the creek and, after winter rains, waterfalls dropping into the creek from side drainages.

The dramatic canyon along Butte Creek I Segment B contains National Register of Historic Places-listed and -eligible heritage locations, such as mines, mined ground, and a townsite. These locations are related to the earliest days of the gold rush and more recent times. Also in this canyon is the historic Ponderosa Way, one of the major projects of the Works Progress Administration and Civilian Conservation Corps during the 1930s, the largest project in California under this Depression-era program. Furthermore, elements of the National Register of Historic Places eligible historic Centerville-DeSabra hydroelectric complex are on BLM-administered lands in this canyon.

West Branch Butte Creek I contains the gold rush community and mined landscape of Forks of Butte, which is listed on the National Register of Historic Places, as well as mines and mined ground potentially eligible for listing on the National Register of Historic Places. It also includes a historic bridge over the river constructed in the 1930s by the Civilian Conservation Corps as part of the very large Civilian Conservation Corps Ponderosa Way project, perhaps the largest project in the United States undertaken by the Civilian Conservation Corps, as well as short segments of the Ponderosa Way itself. Nearby are the foundations of an even earlier bridge from mining activities of the 1800s.

Factor 2: Current status of landownership and use in the area

Within Butte Creek I Segment B, BLM manages 1,179 acres (63 percent) of the segment corridor, which totals 1,887 acres. The remaining 708 acres are private land. Within West Branch Butte Creek I, the BLM manages 182 acres (37 percent) of the segment corridor, which totals 488 acres. The remaining 306 acres are private land.

All lands within the segment corridors are zoned by Butte County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segments existing conditions and protect the identified ORVs. Designation would enhance the identified fish populations by helping to preserve existing habitat. Spring-run Chinook salmon would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Two hydroelectric projects exist wholly or partially within the segments in the Butte Creek Complex, the DeSabra-Centerville project operated by PG&E and the Forks of Butte Project operated by Hypower. Neither of these projects impounds water in the segments of the Butte Creek complex discussed here. The WSRA allows for the existence of “low dams, diversion works and other minor structures,” such as those found in these segments of the Butte Creek Complex. Where these projects overlap with BLM lands, they are considered to have prior existing rights for operations. When managed as suitable for inclusion in the National System, BLM’s management would honor these prior existing rights when re-licensing or right-of-way renewals are undertaken. However, management as suitable could limit new hydroelectric projects on these segments. Designation by the Secretary of the Interior or Congress under the WSRA would prohibit development of new hydroelectric power facilities and could impact re-licensing of existing hydroelectric projects. Currently, there are two applications for dams or diversions on file for this river; however they would be located outside of the WSR segment boundary.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a wild classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment’s corridor to minimize those impacts.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the Butte Creek Complex were added to the National System, the BLM would manage these the segments.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the segment corridors, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. BLM administers approximately 57 percent of the complex corridors. At this time, there are no plans for further acquisitions along the segments, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts between local advocate groups such as the Butte Creek Watershed Conservancy, Butte County Resource Conservation District, and Paradise Parks and Recreation District could provide additional management and support of designation. These agencies would also have the opportunity to continue as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Butte County. Zoning classifications from Butte County include the Timber Production Zone, which allows for timber growth and production activities (Butte County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to a WSR's free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region 5 Central Valley Regional Water Quality Control Board has jurisdiction in Butte County and portions of Shasta County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Additionally, there are several local working groups and agencies with which designation of the segments within Butte Creek Complex would complement. The Butte Creek Watershed Conservancy is a local working group dedicated to the conservation of the Butte Creek watershed and support of the threatened and endangered species it provides for (Conservancy 2023). Designation of the segments and specifically the protection and enhancement of the recreation ORV would additionally complement the Butte County General Plan.

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were related to Butte Creek I Segment B during the public scoping period. The comments were supportive of the segment's designations as WSRs and specifically noted the fish, scenic, recreation, fish geology and historic ORVs as meeting eligibility criteria (BLM 2022). During the public comment period, there were five comments received that were supportive of designation. There were no comments related to West Branch Butte Creek I. There were no comments opposed to designating any of the segments within the Butte Creek Complex as WSRs.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the segments within the Butte Creek Complex as WSRs would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Central Valley Regional Board, enforces California water quality laws. Designation of the segments within Butte Creek Complex as WSRs would be consistent with the Central Valley Regional Board's mission of protecting water quality.

Additionally, portions of these segments overlap with the Forks of Butte Creek ACEC, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to the river system or basin integrity

The Butte Creek Complex constitutes a small portion of the larger watershed, and much of the lower watershed is in private ownership with extensive water projects in the area. However, protecting this relatively intact portion of Butte Creek would continue to support the critical fisheries work in the basin.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of existing and proposed FERC projects. Two hydroelectric projects exist wholly or partially within the segments in the Butte Creek Complex, the DeSabra-Centerville project operated by PG&E and the Forks of Butte Project operated by Hypower. Neither of these projects impounds water in the segments of the Butte Creek complex discussed here. The WSRA allows for the existence of "low dams, 2-15 versionn works and other minor structures," such as those found in these segments of the Butte Creek Complex. Where these projects overlap with BLM lands, they are considered to have prior existing rights for operations. When managed as suitable for

inclusion in the National System, BLM's management would honor these prior existing rights when re-licensing or right-of-way renewals are undertaken. However, management as suitable could limit new hydroelectric projects on these segments. Designation by the Secretary of the Interior or Congress under the WSRA would prohibit development of new hydroelectric power facilities and could impact re-licensing of existing hydroelectric projects. Currently, there are two applications for dams or diversions on file for this river; however they would be located outside of the WSR segment boundary.

2.3.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For segments within the Butte Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Butte Creek I Segment B	Eligible	Suitable	Not Suitable	Suitable
West Branch Butte Creek	Eligible	Suitable	Not Suitable	Suitable

2.3.3 Suitability Determination

The segments within the Butte Creek Complex (Butte Creek I Segment B, and West Branch Butte Creek I) were found **suitable for inclusion** in the National System based on the information within this report. The identified recreation and fisheries values are consistent with local ongoing planning efforts to provide high quality recreation for the communities of Paradise and Magalia following the Camp Fire and provide consistent management of habitat for threatened species. Local advocates and working groups such as the Butte Creek Watershed Conservancy, Butte County Resource Conservation District, and Paradise Parks and Recreation District could provide additional management and support of designation. The existing hydroelectric developments in the segments in the Butte Creek Complex make managing for suitability more complicated, however, BLM feels that management as suitable can still be accomplished with honoring the prior existing rights of the developments. Close coordination with PG&E and Hypower will enable the BLM to protect river values while still allowing for these developments.

2.4 CANYON CREEK

Corridor Description:	Canyon Creek is located in Trinity County in the northern Coast Ranges and contributes to the designated Trinity River WSR.		
BLM Segment Length:	2.9 miles	Area on BLM-Administered Land:	671 acres
Total Segment Length:	4.8 miles	Total Segment Area:	1,122 acres
ORVs:	Fish, Scenic, Recreation	Field Office:	Redding
Tentative Classification:	Recreational	Map:	Map A-4 in Appendix A
Suitability Determination:	Determined suitable for inclusion into the National System		

2.4.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Portions of Canyon Creek that occur in the STNF have been identified as eligible for designation (Forest Service 1995). The STNF identified the following values for Canyon Creek: cultural/historical, fisheries, geology, visual quality/scenery, and wildlife. The BLM has identified scenic and fish values for the river corridor. The BLM has rated the scenic value of Canyon Creek as “A” (BLM 1993). The fish value recognizes Canyon Creek as an important producer of federal and state listed threatened coho salmon and state listed endangered and federal candidate spring-run Chinook and summer-run steelhead (CDFW 2023).

Factor 2: Current status of landownership and use in the area

From the upstream boundary at the STNF to the downstream terminus at Junction City, the BLM manages 671 acres (60 percent) of the river corridor, which totals 1,122 acres. The remaining 451 acres are a mix of USFS and private lands. Land within the river corridor is zoned by Trinity County. Zoning classifications from Trinity County include Open Space, Rural Residential, and Agricultural Forest. (Trinity County 2023).

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Spring-run Chinook salmon, winter-run coho salmon, and summer-run steelhead would continue to be protected under state and federal laws and further enhanced by the National System.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no FERC applications for dams or diversions on file for this river segment (FERC 2023).

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a recreational classification that are ultimately designated would be closed to mineral leasing, allow mineral material development with application of necessary conditions to protect resource values, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Further, any activity that affects the identified ORVs could be restricted. These activities could continue unless they are shown to affect the ORVs such that the segment would no longer be suitable for designation in the National System. The BLM has not identified any current uses that would be limited if Canyon Creek were included in the National System.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the Canyon Creek segment were added to the National System, the BLM would likely co-manage the segment with the STNF, as the Forest Service currently administers all upstream portions of Canyon Creek, including its headwaters.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, is shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation. If appropriate, administration and funding may be shared by the Forest Service, which administers the portions of Canyon Creek upstream of the study boundary.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. BLM administers approximately 60 percent of the corridor already. At this time, there are no plans for further acquisitions along the segment, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Cooperative efforts with the STNF would be likely to benefit ORVs in the river corridor. The scenic, recreation, and fish resources within the river corridor continue upstream into the STNF, and shared participation in the preservation and administration of Canyon Creek would support more consistent treatment of the ORVs.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's outstandingly remarkable values and preventing incompatible development

A review of Trinity County zoning and other land use controls found that there are no zoning ordinances specifically targeted at protecting WSRs and preventing incompatible development (Trinity County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in the river corridor. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on forest use projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the

beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

The private land in this segment's corridor and the surrounding area is often developed for rural residences or as small-scale cannabis farms. This type of development is typically supported by the local plans and may interfere with scenic and recreational ORVs on private lands. However, this kind of development is common in the area and does not stand out visually while on the creek. As described above, the water quality, riparian values, and fish habitat values are robustly protected by federal, state, and local policies.

Factor 10: The existing support or opposition of designation

The public was provided opportunities to offer input for eligibility and suitability determinations for WSRs. Comments were wide-ranging and included river-system, stream-specific, and ORV information.

There was one comment related to Canyon Creek during the public scoping period. The comment was supportive of designation as a WSR and specifically the fisheries and recreational opportunities provided by the segment (BLM 2022). During the public comment period, there were two comments received that were supportive of designation. There were no comments opposed to designating Canyon Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Canyon Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of Canyon Creek as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Additionally, portions of this segment overlap with the Trinity Alps Section 202 WSA, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to river system or basin integrity

The designation of Canyon Creek would provide a significant contribution to the river system, as the river corridor contains the confluence of Canyon Creek with the Trinity River. Development activities, such as rural residences and roads, are within close proximity to Canyon Creek. In combination with the upper STNF portion of Canyon Creek, the lower, BLM-administered portions would allow for designation of 100 percent of Canyon Creek.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Canyon Creek.

2.4.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Canyon Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Canyon Creek	Eligible	Suitable	Suitable	Suitable

2.4.3 Suitability Determination

Canyon Creek was found **suitable for inclusion** in the National System. The Forest Service has also determined that the segment between the STNF boundary and the Trinity River is eligible for inclusion and recommends a classification of Recreational (Forest Service 1995). Together, designation of the BLM- and Forest Service-administered segments would add the entirety of Canyon Creek to the National System, a significant contribution, and increase the manageability of the segment entirety. Furthermore, coupled with the Trinity Alps Wilderness that occurs at the headwaters of Canyon Creek, the designation of Canyon Creek would create a watershed scale framework for a collaborative management direction aimed at conservation of the identified ORVs.

2.5 CEDAR CREEK COMPLEX (CEDAR CREEK SEGMENT A, CEDAR CREEK SEGMENT B, CEDAR CREEK TRIBUTARY 1, CEDAR CREEK TRIBUTARY 2, NORTH FORK CEDAR CREEK)

Complex Description:	The Cedar Creek Complex segments are located in Mendocino County in the northern Coast Ranges and contribute to the South Fork Eel River designated WSR.		
Field Office:	Arcata	Map:	Map A-5 in Appendix A
Suitability Determination:	All segments within the Cedar Creek Complex were determined suitable for inclusion into the National System.		
Cedar Creek Segment A			
BLM Segment Length:	3.9 miles	Area on BLM-Administered Land:	1,115 acres
Total Segment Length:	9.6 miles	Total Segment Area:	1,297 acres
ORV:	Ecology, Scenic, Fish, Geology	Tentative Classification:	Wild
Cedar Creek Segment B			
BLM Segment Length:	1.5 miles	Area on BLM-Administered Land:	369 acres
Total Segment Length:	9.6 miles	Total Segment Area:	732 acres
ORVs:	Geology and Fish	Tentative Classification:	Wild
Cedar Creek Tributary I			
BLM Segment Length:	0.5 miles	Area on BLM-Administered Land:	282 acres
Total Segment Length:	9.6 miles	Total Segment Area:	292 acres
ORV:	Ecology, Scenic, Fish, Geology	Tentative Classification:	Wild

<i>Cedar Creek Tributary 2</i>			
BLM Segment Length:	0.4 miles	Area on BLM-Administered Land:	109 acres
Total Segment Length:	9.6 miles	Total Segment Area:	258 acres
ORV:	Geology	Tentative Classification:	Wild
<i>North Fork Cedar Creek</i>			
BLM Segment Length:	1.0 miles	Area on BLM-Administered Land:	254 acres
Total Segment Length:	9.6 miles	Total Segment Area:	452 acres
ORV:	Geology	Tentative Classification:	Wild

2.5.1 Suitability Factor

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Cedar Creek Complex, four ORVs, ecology, scenic, fish, and geology, were identified as unique, rare, or exemplary at a comparative regional or national scale.

Within Cedar Creek Segment A and Cedar Creek Tributary 1, a rare old-growth forest community is found in the segment corridors. This rare old-growth forest provides unique scenery, as well as ecological value.

Cedar Creek Segment A, Cedar Creek Segment B, and Cedar Creek Tributary 1 are important contributors to the recovery of federally listed threatened Chinook salmon and winter-run steelhead in the South Fork Eel River.

All of the segments within the Cedar Creek Complex include unique red serpentine soils that support unique plant communities within the segments within the Cedar Creek Complex.

Factor 2: Current status of landownership and use in the area

Within Cedar Creek Segment A, BLM manages 1,115 acres (89 percent) of the river corridor, which totals 1,297 acres. The remaining acres are state and private land. Within Cedar Creek Segment B, BLM manages 369 acres (50 percent) of the river corridor, which totals 732 acres. The remaining acres are state and private land. Within Cedar Creek Tributary 1, BLM manages 282 acres (97 percent) of the river corridor, which totals 292 acres. The remaining land is private land. Within Cedar Creek Tributary 2, BLM manages 109 acres (42 percent) of the river corridor, which totals 258 acres. The remaining acreage is a mix of state and private lands. Within North Fork Cedar Creek, BLM manages 254 acres (56 percent) of the river corridor, which totals 452 acres. The remaining are state and private lands.

All lands within the four segment corridors are zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segment's existing condition and protect the identified ORVs. Designation of Cedar Creek Segment A, Cedar Creek Segment B, and Cedar Creek

Tributary A would enhance fish and wildlife populations by helping to preserve existing habitat. Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for these segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment's corridor to minimize those impacts.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If all segments within the Cedar Creek Complex were added to the National System, the BLM would manage this area.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the segment corridors, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

Within the Cedar Creek Complex, approximately 70 percent of the segment corridors are already on BLM-administered lands. At this time, there are no plans for further acquisitions along segments within the Cedar Creek Complex, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with state and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If these segments were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the segment corridors is zoned by Mendocino County. Zoning classifications within the corridors include Public Facilities and Rangeland, which allows for land to be set aside for specified public utility purposes and livestock grazing activities, respectively (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to a WSR's free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County and portions of Shasta County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

There were two comments each received for Cedar Creek Segment A, Cedar Creek Segment B, Cedar Creek Tributary 1, Cedar Creek Tributary 2, and North Fork Cedar Creek during the public scoping period. The comments were all supportive of each segment's designation as a WSR and specifically noted

the fish, scenic, geology and ecology ORVs as meeting eligibility criteria. (BLM 2022). During the public comment period, there was one comment received that was supportive of designation. There were no comments opposed to designating any of the segments as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the segments within the Cedar Creek Complex as WSRs would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of the segments within Cedar Creek Complex as WSRs would be consistent with the Regional Water Board's mission of protecting water quality.

Additionally, portions of these segments overlap with the South Fork Eel River WSA, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to the river system or basin integrity

The segments within Cedar Creek Complex contribute to the designated South Fork Eel WSR. Portions of all the segments within the complex overlap with the South Fork Eel Wilderness, managed by BLM and designation would provide consistent management of these segments. The BLM-administered segments include significant amounts of cold water in the summer, which is critical for the South Fork Eel salmon and steelhead populations. The segments are well known throughout the region as an important watershed due in part to the large majority being located on public lands.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for any of the segments within the Cedar Creek Complex.

2.5.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For segments within the Cedar Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Cedar Creek Segment A	Eligible	Suitable	Not Suitable	Suitable
Cedar Creek Segment B	Eligible	Suitable	Not Suitable	Suitable
Cedar Creek Tributary 1	Eligible	Suitable	Not Suitable	Suitable
Cedar Creek Tributary 2	Eligible	Suitable	Not Suitable	Suitable
North Fork Cedar Creek	Eligible	Suitable	Not Suitable	Suitable

2.5.3 Suitability Determination

All segments within the Cedar Creek Complex were found **suitable for inclusion** in the National System based on the information within this report. The contribution to basin integrity would provide consistent management from the upper reaches of the segments through the downstream boundary near the confluence with the South Fork Eel designated WSR. These segments provide cold water, crucial in the

summer months for the recovery of federally threatened Chinook salmon and winter-run steelhead. High percentage of public lands within the segment corridors ensures that protection and enhancement of identified ORVs would be achievable.

2.6 CLEAR CREEK COMPLEX (CLEAR CREEK SEGMENT A, CLEAR CREEK SEGMENT B, AND CLEAR CREEK SEGMENT C)

Complex Description:	The Clear Creek Complex is located in Shasta County on the border of the northern Coast Range and Sacramento Valley.		
Field Office:	Redding	Map:	Map A-6 in Appendix A
Suitability Determination:	All segments within the Clear Creek Complex were determined to be suitable for inclusion into the National System.		
Clear Creek Segment A			
BLM Segment Length:	4.9 miles	Area on BLM-Administered Land:	959 acres
Total Segment Length:	13.8 miles	Total Segment Area:	1,930 acres
ORV:	Recreation, Fish, Cultural	Tentative Classification:	Scenic
Clear Creek Segment B			
BLM Segment Length:	1.1 miles	Area on BLM-Administered Land:	322 acres
Total Segment Length:	13.8 miles	Total Segment Area:	603 acres
ORV:	Recreation, Fish	Tentative Classification:	Scenic
Clear Creek Segment C			
BLM Segment Length:	3.0 miles	Area on BLM-Administered Land:	794 acres
Total Segment Length:	13.8 miles	Total Segment Area:	1,210 acres
ORV:	Scenic, Recreation, Fish, Geology	Tentative Classification:	Scenic

2.6.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Clear Creek Complex, five ORVs have been identified as making this segment a worthy addition to the National System. ORVs for fish, recreation, geology, cultural, and scenic values were identified as unique, rare, or exemplary at a comparative regional or national scale.

All segments in the Clear Creek Complex are important contributors to the recovery of federally listed threatened and indigenous spring-run Chinook salmon and winter-run steelhead in the Central Valley. In response to substantial declines of these anadromous fish populations in the 1990s and early 2000s, lower

Clear Creek has been the subject of multiple projects that directly and indirectly support recovery of salmon and steelhead populations (USFWS 2015). Fish population numbers have been generally increasing since the start of these restoration projects. This has included BLM land acquisition along the creek and several large-scale restoration projects to restore the function of the creek. Additionally, a public access greenway trail was constructed that provides access to several miles of Clear Creek above the confluence with the Sacramento River.

Recreation in Clear Creek consists of swimming, picnicking, tubing, hiking, and gold panning. These activities occur mainly in the warmer months. Geology in Clear Creek consists of the unique greenstone and erosion features found in Clear Creek Gorge. The scenic value for the assessed portions of Clear Creek have been rated by the BLM as “A” and have landform, vegetation, and water features with outstanding scenic quality (BLM 1993).

Culturally significant elements within Clear Creek include Horsetown and Briggsville, two of the earliest gold rush communities in California and the location of one of the earliest Euro-American gold discoveries made in 1848. Mining features from the gold rush to the mid-twentieth century constitute an important mining landscape. Also present are a rare historic granite quarry, cabin features, a lime kiln, and evidence of Chinese mining and settlement. Unmined remnants of prehistoric villages are also present in certain locations.

Characteristics that detract from making Clear Creek a worthy addition to the National System are related to the environmental impacts from historical mining in the area, the presence of an adjacent heavy industrial area and wastewater treatment plant, and a heavily populated urban area. The Whiskeytown Dam also provides a significant detractor that prevents natural flows from reaching lower Clear Creek.

Factor 2: Current status of landownership and use in the area

Within Clear Creek Segment A, BLM manages 959 acres (47 percent) of the segment corridor, which totals 1,930 acres. The remaining acres are a mix of Bureau of Indian Affairs land, State land, and private land. Within Clear Creek Segment B, BLM manages 322 acres (53 percent) of the segment corridor, which totals 603 acres. The remaining acres are a mix of State and private land. Within Clear Creek Segment C, BLM manages 794 acres (66 percent) of the segment corridor, which totals 1,210 acres. The remaining acres are a mix of National Park Service land and private land.

All lands within the three segment corridors are zoned by Shasta County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segment’s existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Spring-run Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the Clear Creek Technical Team, which is comprised of federal, state, local, and non-profit partners who work together to achieve restoration and fisheries goals in Clear Creek.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no FERC applications for dams or diversions on file for this river segment (FERC 2018).

Vegetation management activities would still occur within segment corridors but may be modified to minimize impacts on the ORVs. Recreation activities, including swimming, tubing, and hiking would continue within the corridors in a similar manner to current conditions, but future recreation infrastructure development could be modified to minimize impacts to ORVs and reduce visible impacts from the creek corridor.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the Clear Creek Complex were added to the National System, the BLM would be most suited to manage the land and resources within this boundary, unless Congress designated another agency.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

There has also been a long history of cooperation among state and federal agencies regarding funding for reviving and restoring salmon runs in the Clear Creek Complex. The result of the salmon habitat restoration projects has been a significant increase in the number of salmon spawning in Clear Creek. The success of the coordinated salmon restoration projects may indicate conditions favorable to future state and federal collaborations, including collaborative funding.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

Over the last few decades, the BLM has acquired several parcels in the Clear Creek corridor in order to facilitate the restoration and fisheries goals, as well as provide recreational opportunities. Currently, the BLM administers 9.1 miles of land along Clear Creek between Whiskeytown Dam and the Sacramento River. There are several more parcels in the Clear Creek corridor that the BLM will continue to pursue for acquisition from willing sellers. However, these acquisitions are not critical to the management of the corridor and no cost analysis or estimate was prepared as a part of this study.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Designation would complement the goals and objectives of the Clear Creek Technical Team, which is comprised of federal (BLM, USFWS, NOAA Fisheries, US Bureau of Reclamation, NPS), state (CDFW,

Dept of Water Resources), local (Western Shasta Resource Conservation District), and non-profit partners who work together to achieve restoration and fisheries goals in Clear Creek. Together, these partners implement flow management and river restoration projects made possible through the Central Valley Project Improvement Act Fish Restoration Plan (BOR 2022). Designation could further enhance this work and offer long term protection to the creek.

If the river were not included in the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs along the river area under existing laws, authorities, and ordinances. Applicable laws would include the ESA, the CWA, the CESA, and California Water Code.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

A review of Shasta County zoning and other land use controls found that there are no zoning ordinances specifically targeted at protecting VSRs and preventing incompatible development (Shasta County 2018).

Shasta County zoning along Clear Creek lists five classifications: Limited Residential, Unclassified, Habitat Protection, Exclusive Agriculture, and Open Space (Shasta County 2018). The majority of the Clear Creek corridor along the 6 miles before the Sacramento River has been zoned as Residential on the south side of Clear Creek. Downstream from the Whiskeytown Dam, zoning is primarily Unclassified with portions of residential zoning in isolated parcels. On the north side of Clear Creek is an industrial site that is approximately 3 miles long, which has been zoned as heavy industrial by the City of Redding (City of Redding 2018). The majority of the corridors within the complex contain zoning codes that would largely support the maintenance of ORVs within the corridor. The purpose of the limited residential zoning is intended for low-density, rural residential living environments generally in areas remote from a community or where few services are available. The purpose of the unclassified zoning is intended to be applied as a holding district until a precise principal zone district has been adopted for the property.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit represents CDFW on multiple work teams that make real-time water operation decisions for the state Water Project and Central Valley Project. The Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2018).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2018). The Region 5 Central Valley Regional Water Quality Control Board has jurisdiction in Shasta County. The mission of the Regional Board is to “develop and enforce water quality objectives and implementation plans that will best

protect the beneficial uses of the state's waters, recognizing local differences in climate, topography, geology and hydrology" (California Water Board 2018).

While the majority of the work and planning done by the Clear Creek Technical Team is on BLM or state lands, the Western Shasta Resource Conservation District and other partners on the team actively work with willing private landowners to protect riparian values and accomplish restoration projects where possible.

Factor 10: The existing support for or opposition to designation

The public provided input regarding WSRs during public scoping meetings. The public commented on the eligibility process in general and provided stream-specific ORV information.

The BLM received two comments related to the segments within the Clear Creek Complex during the public scoping period. Comments specifically related to designation of Clear Creek as a WSR. All comments were supportive of Clear Creek's designation as a WSR and specifically noted the recreation and fish ORVs as meeting eligibility criteria (BLM 2022). During the public comment period, there were three comments received. The comment was supportive of designation and specifically the ecological connectivity. There were no comments opposed to designating any of the segments within the Clear Creek Complex as WSRs.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

An ecosystem restoration program (ERP) conservation strategy for restoration of the Sacramento-San Joaquin Delta, Sacramento Valley, and San Joaquin Valley regions, implemented by the CDFW, USFWS, and NOAA Fisheries, addresses maintaining habitat in Clear Creek to support anadromous fish and riparian vegetation (CDFW 2014). The ERP outlines concepts and methods for restoration, including proposals that were funded to assess altered stream hydrology and ultimately alter the release of flows from Whiskeytown Dam to support anadromous fish populations (CDFW 2014). Designating the Clear Creek Complex as a WSR would support the ERP conservation strategy.

A recovery plan for Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, and Central Valley steelhead was drafted by NOAA Fisheries West Coast Region in 2014 (NOAA 2014). The recovery plan draws on the expertise of the Central Valley Technical Recovery Team, agency comanagers, and many public entities and individuals dedicated to recovering these fish. This voluntary recovery plan sets goals and prioritizes actions for the Sacramento-San Joaquin Delta and its watersheds, providing a framework for species recovery. The designation of the Clear Creek Complex as a WSR would be consistent with the goals and objectives of the recovery plan.

The Central Valley Project Improvement Act directs the Secretary of the Interior to develop and implement a program that makes all reasonable efforts to double natural production of anadromous fish in Central Valley streams (Section 3406(b)(1)). The program is known as the Anadromous Fish Restoration Program (AFRP). The AFRP is described in a restoration plan that contains the goals, objectives, and strategies of the AFRP. The restoration plan also lists actions and evaluations that are already underway or that may be implemented in the near future. The goals and objectives of the AFRP would be supported by designation of the Clear Creek Complex as a WSR.

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the Clear Creek Complex as a WSR would support the goals and objectives of the CWA and ESA.

Additionally, portions of these segments overlap with the Upper and Lower Clear Creek ACEC, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to the river system or basin integrity

Designating the Clear Creek segments would result in Clear Creek being protected in some form from where it exists Whiskeytown Dam until its confluence with the Sacramento River. This would support a watershed approach to protecting this important stream for fisheries and other values which is supported by the existing partner-focused, holistic protection strategy for the Clear Creek Complex watershed involving local, state, and federal agencies.

Factor 13: The potential for water resources development

As designation may limit development of water resource projects, such as irrigation and flood control measures, hydropower facilities, or dredging, current and proposed projects within the Clear Creek Complex were assessed for their potential to be limited by designation. Irrigation measures are unlikely to affect Clear Creek; this is because water rights are already fully appropriated, and there would be no further diversions. Irrigation dams are unlikely to be constructed, and irrigation dams, such as the McCormick-Saeltzer Dam, have been removed to facilitate salmon runs.

2.6.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For the segments within Clear Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Clear Creek Segment A	Eligible	Suitable	Not Suitable	Suitable
Clear Creek Segment B	Eligible	Suitable	Not Suitable	Suitable
Clear Creek Segment C	Eligible	Suitable	Not Suitable	Suitable

2.6.3 Suitability Determination

The segments within the Clear Creek Complex were identified as **suitable for inclusion** based on information within this report. Efforts to conserve the federally listed anadromous fish population in Clear Creek have been largely successful and have revived a salmon run that had previously been eliminated. There has been a remarkable degree of cooperation between local, state, and federal agencies to foster conservation of biological resources and to preserve the river corridor itself. Due to the need for consistent management strategies and the potential to preserve and strengthen existing conservation and restoration plans, adding Clear Creek to the National System would significantly increase the protection for the ORVs.

2.7 COTTONWOOD CREEK COMPLEX (MIDDLE FORK COTTONWOOD CREEK, NORTH FORK COTTONWOOD CREEK, SOUTH FORK COTTONWOOD CREEK)

Complex Description:	The segments within the Cottonwood Creek Complex are located in Shasta County.		
Field Office:	Redding	Map:	Map A-7A and A-7B in Appendix A
Suitability Determination:	All segments within the Cottonwood Creek Complex were determined to be suitable for inclusion into the National System.		
Middle Fork Cottonwood Creek Segment A			
BLM Segment Length:	1.2 miles	Area on BLM-Administered Land:	446 acres
Total Segment Length:	8.5 miles	Total Segment Area:	635 acres
ORVs:	Fish, Scenic	Tentative Classification:	Recreational
Middle Fork Cottonwood Creek Segment B			
BLM Segment Length:	3.4 miles	Area on BLM-Administered Land:	1,078 acres
Total Segment Length:	8.5 miles	Total Segment Area:	1,571 acres
ORVs:	Fish, Scenic	Tentative Classification:	Wild
North Fork Cottonwood Creek			
BLM Segment Length:	2.1 miles	Area on BLM-Administered Land:	550 acres
Total Segment Length:	8.5 miles	Total Segment Area:	860 acres
ORV:	Scenic, Recreation, Fish	Tentative Classification:	Scenic
South Fork Cottonwood Creek Segment A			
BLM Segment Length:	2.0 miles	Area on BLM-Administered Land:	490 acres
Total Segment Length:	8.5 miles	Total Segment Area:	915 acres
ORV:	Scenic, Recreation, Geology and Fish	Tentative Classification:	Wild
South Fork Cottonwood Creek Segment B			
BLM Segment Length:	1.1 miles	Area on BLM-Administered Land:	304 acres
Total Segment Length:	8.5 miles	Total Segment Area:	574 acres
ORV:	Scenic, Recreation, Geology and Fish	Tentative Classification:	Scenic

2.7.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Cottonwood Creek Complex, four ORVs have been identified as making this segment a worthy addition to the National System. ORVs for Scenic, recreation, geology and fish values were identified as unique, rare, or exemplary at a comparative regional or national scale.

The segments within the Cottonwood Creek Complex all have a scenic quality rating of “A” and are important contributors to the recovery of federally listed threatened winter-run steelhead in the Central Valley.

The North Fork Cottonwood Creek segment provides a primitive setting suitable for backcountry hiking and expert kayaking. The South Fork Cottonwood Creek Segment A and South Fork Cottonwood Creek Segment B are secluded, undeveloped, physically demanding, and inaccessible by roads or trail which gives them both a primitive setting and excellent opportunities for primitive types of outdoor experiences.

The South Fork Cottonwood Creek Segment A and South Fork Cottonwood Creek Segment B contain a spectacular display of the steeply dipping Cretaceous sedimentary rock layers paralleling the creek beds in several locations. The creek bottom is characterized as boulder strewn with innumerable cascading rapids and waterfalls.

Factor 2: Current status of landownership and use in the area

Within the Middle Fork Cottonwood Creek Segment A, BLM managed 446 acres (70 percent) of the segment corridor, which totals 635 acres. The remaining acres are private lands. Within the Middle Fork Cottonwood Creek Segment B, BLM manages 1,078 acres (69 percent) of the river corridor, which totals 1,571 acres. The remaining acres are private land. Within North Fork Cottonwood Creek, BLM manages 550 acres (64 percent) of the river corridor, which totals 860 acres. The remaining acres are private land. Within South Fork Cottonwood Creek Segment A, BLM manages 490 acres (54 percent) of the river corridor, which totals 915 acres. The remaining acres are private or Forest Service lands. Within South Fork Cottonwood Creek Segment B, BLM manages 304 acres (53 percent) of the river corridor, which totals 574 acres. The remaining acres are private land.

All lands within the segment corridors are zoned by Shasta County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segment’s existing conditions and protect the identified ORVs. Designation would enhance fish populations by helping to preserve existing habitat. Spring-run Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment. Segments with a recreational classification that are ultimately designated would be closed to mineral leasing, allow mineral material development with application of necessary conditions to protect resource values, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment's corridor to minimize those impacts.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the Cottonwood Creek Complex were added to the National System, BLM would manage the segments.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the segment corridors, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Approximately 63 percent of the segment corridors are on BLM-administered land. At this time, there are no plans for further acquisitions along segments within the Cottonwood Creek Complex although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

Preservation and administration of the state-listed and federally listed species of salmon within the segments of Cottonwood Creek Complex would also be supported by participation from state and federal agencies, including the CDFW and USFWS, who are both mandated to conserve listed resources.

If the segments were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the segment corridors is zoned by Shasta County. Zoning classifications include Timber Production, allowing for timber and timber related activities; Exclusive Agriculture, allowing for agriculture uses; Limited Agriculture, which supports part-time or hobby agricultural uses; Habitat Protection, which preserves important habitat; Government; and Unclassified. These types of agricultural or natural resource production zoning would largely support the maintenance of ORVs in the corridor (Shasta County 2023).

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the California Endangered Species Act (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region 5 Central Valley Regional Water Quality Control Board has jurisdiction in Tehama County and portions of Shasta County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were three comments received related to North Fork Cottonwood Creek Segment A, North Fork Cottonwood Creek Segment B, and Middle Fork Cottonwood Creek Segment B during the public scoping period. The comments were supportive of the segment's designation as a WSR and specifically noted the fish, recreational, and scenic ORVs as meeting eligibility criteria (BLM 2022). There were four comments related to South Fork Cottonwood Creek Segment A and B. The comments were supportive of WSR designation and specifically noted the fish, recreational, geologic, and scenic ORVs as meeting eligibility criteria (BLM 2022). During the public comment period, there were two comments received that were supportive of designation. There were no comments opposed to designating any of the segments within the Cottonwood Creek Complex as WSRs.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the segments within the Cottonwood Creek Complex as WSRs would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Central Valley Regional Board, enforces California water quality laws. Designation of the segments within the Cottonwood Creek Complex as WSRs would be consistent with the Central Valley Regional Board's mission of protecting water quality.

Additionally, portions of this segment overlap with the Yolla Bolly Contiguous Section 603 WSA, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to the river system or basin integrity

Combined, these segments make up an important portion of the Sacramento River watershed. Cottonwood Creek is the largest undammed tributary in the basin and is a major source of sediment and gravel input into the Sacramento River. When paired with Beegum Creek (see Section 2.2), another segment determined suitable for inclusion into the National System, the integrity of the basin substantially increases.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for any segments within the Cottonwood Creek Complex.

2.7.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For segments within the Cottonwood Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Middle Fork Cottonwood Creek Segment A	Eligible	Suitable	Not Suitable	Suitable
Middle Fork Cottonwood Creek Segment B	Eligible	Suitable	Not Suitable	Suitable
North Fork Cottonwood Creek	Eligible	Suitable	Not Suitable	Suitable

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
South Fork Cottonwood Creek Segment A	Eligible	Suitable	Not Suitable	Suitable
South Fork Cottonwood Creek Segment B	Eligible	Suitable	Not Suitable	Suitable

2.7.3 Suitability Determination

The segments within the Cottonwood Creek Complex (Middle Fork Cottonwood Creek Segment A, Middle Fork Cottonwood Creek Segment B, North Fork Cottonwood Creek, South Fork Cottonwood Creek Segment A, and South Fork Cottonwood Creek Segment B) were found **suitable for inclusion** in the National System based on the information within this report. The contributions to basin integrity within the Sacramento River watershed and the combined mileage of habitat provided to threatened and endangered species make these segments worthy of designation.

2.8 ELDER CREEK COMPLEX (ELDER CREEK, ELDER CREEK TRIBUTARIES, PARALYZE CANYON AND TRIBUTARIES, AND MISERY CREEK)

Complex Description:	The segments within the Elder Creek Complex are in Mendocino County in the northern Coast Range and contribute to the designated South Fork Eel River WSR.		
Field Office:	Arcata	Map:	Map A-8 in Appendix A
Suitability Determination:	All segments within the Elder Creek Complex were determined to be suitable for inclusion into the National System.		
<i>Elder Creek</i>			
BLM Segment Length:	1.7 miles	Area on BLM-Administered Land:	626 acres
Total Segment Length:	4.6 miles	Total Segment Area:	674 acres
ORV:	Fish, Ecology, Scenic, Research (Other)	Tentative Classification:	Wild
<i>Elder Creek Tributaries</i>			
BLM Segment Length:	2.2 miles	Area on BLM-Administered Land:	850 acres
Total Segment Length:	3.3 miles	Total Segment Area:	1,035 acres
ORVs:	Ecology, Scenic and Research (Other)	Tentative Classification:	Wild
<i>Paralyze Canyon and Tributaries</i>			
BLM Segment Length:	3.6 miles	Area on BLM-Administered Land:	1,133 acres
Total Segment Length:	3.6 miles	Total Segment Area:	1,212 acres
ORVs:	Ecology, Scenic and Research (Other)	Tentative Classification:	Wild

Misery Creek			
BLM Segment Length:	0.2 miles	Area on BLM-Administered Land:	119 acres
Total Segment Length:	1.2 miles	Total Segment Area:	230 acres
ORVs:	Ecology, Scenic and Research (Other)	Tentative Classification:	Wild

2.8.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Elder Creek Complex, four ORVs have been identified as making this segment a worthy addition to the National System. Ecology, scenic, research, and fish ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

The segments within the Elder Creek Complex are part of the California Coast Ranges Biosphere Reserve established in 1983 by United Nations Education, Scientific, and Cultural Organization. The biosphere reserve includes a highly diverse complex of evergreen sclerophyllous woodland and coastal, estuary, and marine ecosystems (BLM 2022). Elder Creek flows from pristine Douglas fir forested watersheds in the South Fork Eel Wilderness. This rare old-growth forest in the Elder Creek riparian corridor provides unique scenery and flows through visual resource management Class II lands. The relatively undisturbed watershed within Elder Creek has also been designated as a national natural landmark, and a hydrological benchmark.

Elder Creek is also an important contributor to the recovery of federally listed threatened coho salmon and winter-run steelhead in the South Fork Eel River. The State of California also lists coho salmon as threatened.

Factor 2: Current status of landownership and use in the area

Within Elder Creek, BLM manages 626 acres (93 percent) of the segment corridor, which totals 674 acres. The remaining acres are private land. Within Elder Creek Tributaries, BLM manages 850 acres (82 percent) of the segment corridor, which totals 1,035 acres. The remaining acres are private land. Within Paralyze Canyon and Tributaries, BLM manages 1,133 acres (93 percent) which totals 1,212 acres. The remaining acres are private land. Within Misery Creek, BLM manages 119 acres (52 percent) of the river corridor, which totals 230 acres. The remaining acres are private land. Land within all segment corridors is zoned by Mendocino County, as described in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segments existing conditions and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Coho salmon, Chinook salmon, and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversion on file for these segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Uses that could be curtailed by designation would include harvesting forest products and agricultural activities, such as cattle grazing. These activities could continue unless they are shown to affect the ORVs such that the segment would no longer be suitable for designation in the National System.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the Elder Creek Complex were added to the National System, the BLM and private entities would manage the segments.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the segment corridors, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the segment corridors. 87 percent of the complex corridor is already on BLM-administered land. At this time, there are no plans for further acquisitions along Elder Creek Complex, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the segments were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Timberland Production, which allows for timber and timber-related activities, and Open Space, which supports lands to be kept undeveloped (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control has jurisdiction in Mendocino County and portions of Humboldt and Trinity Counties. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were received related to Elder Creek, Elder Creek Tributaries, and Paralyze Canyon and Tributaries during the public scoping period. The comments were supportive of the segments' designation as a WSR and specifically noted the ecology, scenic, research, and fish ORVs as meeting eligibility criteria (BLM 2022). During the public comment period, there were three comments received that were supportive of designation. There were no comments opposed to designating any of the segments within Elder Creek Complex as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Elder Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Elder Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Additionally, portions of these segments overlap with the South Fork Eel River Wilderness, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to the river system or basin integrity

The segments within the Elder Creek Complex flow into the designated South Fork Eel WSR. The three segments contain undisturbed forest and aquatic ecosystems which include cold, clean water for the threatened coho salmon and winter-run steelhead. The watershed is well-known, as the UC-Berkeley Angelo Reserve conservation lands occur downstream (BLM 2022).

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Elder Creek.

2.8.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For segments within the Elder Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Elder Creek	Eligible	Suitable	Not Suitable	Suitable
Elder Creek Tributaries	Eligible	Suitable	Not Suitable	Suitable
Paralyze Canyon and Tributaries	Eligible	Suitable	Not Suitable	Suitable
Misery Creek	Eligible	Suitable	Not Suitable	Suitable

2.8.3 Suitability Determination

The segments within the Elder Creek Complex were found **suitable for inclusion** in the National System based on the information within this report. Designation would provide consistent management with the downstream reaches in the UC-Berkeley Angelo Reserve conservation lands. With the segments important contributions to the recovery of threatened fish species, designation would also enhance their protection as they flow into the designated South Fork Eel River WSR.

2.9 ELK CREEK COMPLEX (EDEN CREEK, EDEN CREEK TRIBUTARY 1, EDEN CREEK TRIBUTARY 2, ELK CREEK, DEEP HOLE CREEK)

Complex Description:	The segments within the Elk Creek Complex are located in Mendocino County in the northern Coast Ranges and contribute to the designated Middle Fork Eel River WSR.		
Field Office:	Arcata	Map:	Map A-9 in Appendix A
Suitability Determination:	All segments within the Elk Creek Complex were determined to be suitable for inclusion into the National System.		
Deep Hole Creek			
BLM Segment Length:	3.1 miles	Area on BLM-Administered Land:	929 acres
Total Segment Length:	4.3 miles	Total Segment Area:	1,197 acres
ORV:	Fish	Tentative Classification:	Scenic
Eden Creek			
BLM Segment Length:	3.3 miles	Area on BLM-Administered Land:	900 acres
Total Segment Length:	4.8 miles	Total Segment Area:	1,313 acres
ORVs:	Fish, Cultural	Tentative Classification:	Wild
Eden Creek Tributary 1			
BLM Segment Length:	1.2 miles	Area on BLM-Administered Land:	415 acres
Total Segment Length:	1.5 miles	Total Segment Area:	499 acres
ORV:	Cultural	Tentative Classification:	Wild
Eden Creek Tributary 2			
BLM Segment Length:	1.2 miles	Area on BLM-Administered Land:	457 acres
Total Segment Length:	1.5 miles	Total Segment Area:	607 acres
ORV:	Cultural	Tentative Classification:	Wild
Elk Creek			
BLM Segment Length:	3.3 miles	Area on BLM-Administered Land:	917 acres
Total Segment Length:	9.9 miles	Total Segment Area:	1,381 acres
ORVs:	Cultural, Fish	Tentative Classification:	Scenic

2.9.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Elk Creek Complex, two ORVs have been identified as making this segment a worthy addition to the National System. ORVs for fish and cultural values were identified as unique, rare, or exemplary at a comparative regional or national scale.

Eden Creek, Elk Creek, and Deep Hole Creek are important contributors to the recovery of federally listed threatened winter-run steelhead in the Middle Fork Eel River. Additionally, several significant cultural sites have been recorded within Eden Creek Tributary 1, Eden Creek Tributary 2, and Elk Creek.

Factor 2: Current status of landownership and use in the area

Within Eden Creek, the BLM manages 900 acres (69 percent) of the river corridor, which totals 1,313 acres. The remaining acres are private land. Within Eden Creek Tributary 1, BLM manages 415 acres (83 percent) of the river corridor, which totals 499 acres. The remaining acres are private land. Within Eden Creek Tributary 2, BLM manages 457 acres (75 percent) of the river corridor, which totals 607 acres. The remaining acres are private land. Within Elk Creek, BLM manages 917 acres (66 percent) of the river corridor, which totals 1,381 acres. The remaining corridor contains National Forest System land and private land. Within Deep Hole Creek, BLM manages 929 acres (77 percent) of the river corridor, which totals 1,197 acres. The remaining acres are private land.

All lands within the Elk Creek Complex are zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segments existing conditions and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Uses that could be curtailed by designation would include harvesting forest products and agricultural activities, such as cattle grazing. These activities could continue unless they are shown to affect the ORVs such that the segment would no longer be suitable for designation in the National System.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within Elk Creek Complex were added to the National System, the BLM would manage this area.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the complex corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

Approximately 75 percent of the complex corridor is on BLM-administered land. BLM is staged to acquire a large portion of the stream corridor in the next year, leading to increased protections and enhancements of ORVs, as well as consistent management throughout the larger river system.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with CDFW and local county entities would ensure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the segments within Elk Creek Complex were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in these segments.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Lands within the segments corridors is zoned by Mendocino County. Zoning classifications include Public Facilities and Rangeland. Public facilities allow for public use activities. Rangeland allows for livestock grazing and the production, harvest, and protection of natural resources (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the

USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County and portions of Shasta County. The Regional Water Board is responsible for The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were received related to Eden Creek, Eden Creek Tributary 1, Eden Creek Tributary 2, Deep Hole Creek, and Elk Creek during the public scoping period. The comments were supportive of the segment's designation as a WSR and specifically noted the fish and cultural ORVs, as they apply (BLM 2022). During the public comment period, there was one comment received that was supportive of designation. There were no comments opposed to designating any of the Elk Creek Complex segments as WSRs.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the segments within Elk Creek Complex as WSRs would support the goals and objectives of the CWA and ESA. On a state level, CESA, administered by the Regional Water Board, enforces California water quality laws. Designation of the segments within Elk Creek Complex as WSRs would be consistent with the Regional Water Board's mission of protecting water quality.

Additionally, portions of these segments overlap with the Yuki Wilderness, the Eden Valley Section 603 WSA, and the Eden Valley ACEC, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to the river system or basin integrity

Elk Creek is a large stream that flows into the designated Middle Fork Eel WSR. The shared fish ORV extends to Eden Creek and Deep Hole Creek, meaning consistent management could be provided should designation occur. The BLM includes Eden Creek and Deep Hole Creek part of the Elk Creek Complex

because of the shared fish ORV. BLM is staged to acquire a large portion of the stream corridor in the next year.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for the segments within the Elk Creek Complex.

2.9.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For the segments within the Elk Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Deep Hole Creek	Eligible	Suitable	Not Suitable	Suitable
Elk Creek	Eligible	Suitable	Not Suitable	Suitable
Eden Creek	Eligible	Suitable	Not Suitable	Suitable
Eden Creek Tributary 1	Eligible	Suitable	Not Suitable	Suitable
Eden Creek Tributary 2	Eligible	Suitable	Not Suitable	Suitable

2.9.3 Suitability Determination

The segments within Elk Creek Complex (Elk Creek, Eden Creek, Eden Creek Tributary 1, Eden Creek Tributary 2, and Deep Hole Creek) were found **suitable for inclusion** in the National System based on the information within this report. A large portion of the segment corridors are already located on public lands which would mean management, protection, and enhancement of ORVs could occur effectively. Additionally, there is a need to protect and enhance the threatened winter-run steelhead. The segments within the Elk Creek Complex provide a great opportunity for consistent protection for these species as the segments flow into the designated Middle Fork Eel WSR.

2.10 HAYSHED CREEK

Corridor Description:	Hayshed Creek is in Mendocino County in the northern Coast Ranges and contributes to the designated Middle Fork Eel River WSR.		
Field Office:	Arcata	Map:	Map A-10 in Appendix A
Suitability Determination:	Suitable for inclusion into the National System		
BLM Segment Length:	1.7 miles	Area on BLM-Administered Land:	567 acres
Total Segment Length:	3.7 miles	Total Segment Area:	686 acres
ORV:	Fish	Tentative Classification:	Wild

2.10.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Hayshed Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish was identified as unique, rare, or exemplary at a comparative regional or national scale.

Hayshed Creek is an important contributor to the recovery of federally listed threatened Chinook salmon and winter-run steelhead in the Middle Fork Eel River.

Factor 2: Current status of landownership and use in the area

The BLM manages 567 acres (83 percent) of the total 686-acre river corridor. The remaining 119 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment's corridor to minimize those impacts.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Hayshed Creek were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Eighty-three percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Hayshed Creek, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Rangeland, Public Facilities, and Timberland Production Zones. These classifications allow for timber production activities, livestock grazing, and lands set aside for public utility use (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protection to a WSR's free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make

recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the federal ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

There were no comments received related to Hayshed Creek.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Hayshed Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Hayshed Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Hayshed Creek contributes to the designated Eel River WSR. Designation of Hayshed Creek would provide consistent management of the Eel River tributaries and enhance protections of identified ORVs overall.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Hayshed Creek.

2.10.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Hayshed Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Hayshed Creek	Eligible	Suitable	Not Suitable	Suitable

2.10.3 Suitability Determination

Hayshed Creek was found **suitable for inclusion** in the National System based on the information within this report. The segment is adjacent to an already designated WSR, lending an opportunity for consistent management, protection, and enhancement of the identified ORVs. Additionally, almost the entire watershed is contained on public lands, leading to ease of access and effective manageability.

2.11 HULLS CREEK COMPLEX (BRIN CANYON CREEK, CASOOSE CREEK, HORSE CANYON CREEK, HULLS CREEK SEGMENT A AND HULLS CREEK SEGMENT B)

Complex Description:	The segments within Hulls Creek Complex are located in Mendocino County and Trinity County in the northern Coast Ranges and contribute to the designated North Fork Eel WSR.		
Field Office:	Arcata	Map:	Map A-11 in Appendix A
Suitability Determination:	All segments within the Hulls Creek Complex were determined to be suitable for inclusion into the National System.		
Brin Canyon Creek			
BLM Segment Length:	0.9 miles	Area on BLM-Administered Land:	311 acres
Total Segment Length:	0.9 miles	Total Segment Area:	385 acres
ORV:	Fish	Tentative Classification:	Scenic
Casoose Creek			
BLM Segment Length:	1.6 miles	Area on BLM-Administered Land:	520 acres
Total Segment Length:	3.5 miles	Total Segment Area:	851 acres
ORV:	Fish	Tentative Classification:	Scenic
Horse Canyon Creek			
BLM Segment Length:	0.7 miles	Area on BLM-Administered Land:	203 acres
Total Segment Length:	0.7 miles	Total Segment Area:	338 acres
ORV:	Fish	Tentative Classification:	Scenic
Hulls Creek Segment A			
BLM Segment Length:	4.9 miles	Area on BLM-Administered Land:	757 acres
Total Segment Length:	16.3 miles	Total Segment Area:	1,953 acres
ORV:	Fish, Cultural	Tentative Classification:	Recreational
Hulls Creek Segment B			
BLM Segment Length:	2.0 miles	Area on BLM-Administered Land:	209 acres
Total Segment Length:	16.3 miles	Total Segment Area:	724 acres
ORV:	Fish	Tentative Classification:	Scenic

2.11.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Hulls Creek Complex, one ORV has been identified as making these segments a worthy addition to the National System. An ORV for fish values was identified as unique, rare, or exemplary at a comparative regional or national scale.

The segments within Hulls Creek Complex are important contributors to the recovery of federally listed threatened Chinook salmon and winter-run steelhead in the North Fork Eel River.

There are cultural values along this segment of Hulls Creek as evidenced by multiple documented archaeological sites. The artifacts and features that have been found indicate that Indigenous people lived along the creek banks on both a short-term (camps) and long-term (villages) basis. Subsistence strategies varied as demonstrated in the artifact record: lithic tools were present that were likely used in hunting and processing activities, as well as ground stone for processing plant materials.

Factor 2: Current status of landownership and use in the area

Within Hulls Creek Segment A, BLM manages 757 acres (39 percent) of the river corridor, which totals 1,953 acres. The remaining acres are managed by Bureau of Indian Affairs and private land. Within Hulls Creek Segment B, BLM manages 209 acres (29 percent) of the river corridor, which totals 724 acres. The remaining acres are private land. Within Brin Canyon Creek, the BLM manages 311 acres (81 percent) of the total 385-acre river corridor. The remaining 74 acres are private land. Within Casoose Creek, the BLM manages 520 acres (61 percent) of the total 851-acre river corridor. The remaining 331 acres are private land. Within Horse Canyon Creek, the BLM manages 203 acres (60 percent) of the total 338-acre river corridor. The remaining 135 acres are private land. Lands within both segment corridors are zoned by Mendocino and Trinity Counties, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segments existing conditions and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Fall-run Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for any of these segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment. Segments with a recreational classification that are ultimately designated would be closed to mineral leasing, allow mineral material development with application of necessary conditions to protect

resource values, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORVs within the corridors; however, livestock grazing could be curtailed if the segments were to be designated, and grazing began to impact the ORVs. Timber harvesting or other vegetation management activities may be modified in the segments' corridors to minimize impacts on the ORV.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within Hulls Creek Complex were added to the National System, the BLM would manage this area.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of these segment corridors, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Approximately 47 percent of the total segment corridors are on BLM-administered land. At this time, there are no plans for further acquisitions along any of the segments within Hulls Creek Complex, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the Bureau of Indian Affairs and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the segments were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the segment's corridors is zoned by Mendocino and Trinity Counties. Zoning classifications from Mendocino County include Timberland Production Zone and Rangeland, allowing for Timber Production and grazing activities (Mendocino County 2023). Zoning classification from Trinity County include Unclassified (Trinity County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridors.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County and portions of Humboldt and Trinity Counties. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were two comments received related to Hulls Creek Segment A and Hulls Creek Segment B during the public scoping period. The comments were supportive of designation as a WSR and specifically noted the fish and recreation ORVs as meeting eligibility criteria (BLM 2022). During the public comment period, there were five comments received that were supportive of designation. There were no comments opposed to designating either segment as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist

in implementing these two laws. Designation of Hulls Creek Segment A and Hulls Creek Segment B as WSRs would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of Hulls Creek Segment A and Hulls Creek Segment B as WSRs would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Brin Canyon Creek, Casoose Creek, and Horse Canyon Creek contain a small amount of BLM-administered lands within each segment's corridor. However, their combined contribution of cold water fish habitat to the larger river system is significant.

Hulls Creek Segments A and B combine to be the largest tributary of the designated North Fork Eel WSR. The lower section of the Hulls Creek is one of the few suitable Chinook salmon spawning tributaries in the North Fork Eel WSR. The headwaters contain cold water, providing important habitat for those species year-round.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for the segments within the Hulls Creek Complex.

2.11.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For segments within the Hulls Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Brin Canyon Creek	Eligible	Suitable	Not Suitable	Suitable
Casoose Creek	Eligible	Suitable	Not Suitable	Suitable
Horse Canyon Creek	Eligible	Suitable	Not Suitable	Suitable
Hulls Creek Segment A	Eligible	Suitable	Not Suitable	Suitable
Hulls Creek Segment B	Eligible	Suitable	Not Suitable	Suitable

2.11.3 Suitability Determination

The segments within the Hulls Creek Complex (Brin Canyon Creek, Casoose Creek, Horse Canyon Creek, Hulls Creek Segment A, and Hulls Creek Segment B) were found **suitable for inclusion** in the National System based on the information within this report. The segments are adjacent to an already designated WSR, lending an opportunity for consistent management, protection, and enhancement of the identified ORVs.

2.12 INDIAN CREEK (TRINITY RIVER) COMPLEX (INDIAN CREEK I SEGMENT A, INDIAN CREEK I SEGMENT B, AND INDIAN CREEK I SEGMENT C)

Complex Description:	The segments within the Indian Creek (Trinity River) Complex are located in Trinity County in the northern Coast Range and contribute to the designated Trinity River WSR.		
Field Office:	Redding	Map:	Map A-12 in Appendix A
Suitability Determination:	All segments within the Indian Creek (Trinity River) Complex were determined to be suitable for inclusion into the National System.		
Indian Creek I Segment A			
BLM Segment Length:	0.8 miles	Area on BLM-Administered Land:	123 acres
Total Segment Length:	12.6 miles	Total Segment Area:	400 acres
ORV:	Fish	Tentative Classification:	Wild
Indian Creek I Segment B			
BLM Segment Length:	2.9 miles	Area on BLM-Administered Land:	748 acres
Total Segment Length:	12.6 miles	Total Segment Area:	1,087 acres
ORV:	Cultural, Fish	Tentative Classification:	Scenic
Indian Creek I Segment C			
BLM Segment Length:	1.7 miles	Area on BLM-Administered Land:	482 acres
Total Segment Length:	12.6 miles	Total Segment Area:	797 acres
ORV:	Fish	Tentative Classification:	Scenic

2.12.1 Suitability Factor

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Indian Creek (Trinity River) Complex, two ORVs have been identified. Fish and cultural ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

Indian Creek I Segment A, Indian Creek I Segment B, and Indian Creek I Segment C are important contributors to the recovery of federally listed threatened coho salmon in the Trinity River. They each also support wild winter-run steelhead. Coho salmon are also listed by the State of California as threatened.

Indian Creek I Segment B includes cultural resources stemming from the California gold rush era through the twentieth century. Miners left behind a townsite (Indian Creek, or Indeek); a mining landscape of tailings, ditches, headwalls, reservoirs, dams, and worked ground; and artifact dumps and remnants of mining structures. These remains have been determined in sections to be eligible for listing on the National Register of Historic Places, with other sections potentially eligible. The Indian Creek townsite itself has never been mined; however, it contains structure pads, cultivars, artifact concentrations, a well, and a fence as evidence of the past.

Factor 2: Current status of landownership and use in the area

Within Indian Creek I Segment A, BLM manages 123 acres (31 percent) of the river corridor, which totals 400 acres. The state and private entities manage the remaining acres within the river corridor. Within Indian Creek I Segment B, BLM manages 748 acres (69 percent) of the river corridor, which totals 1,087 acres. The remaining acres are private land. Within Indian Creek I Segment C, BLM manages 482 acres (60 percent) of the river corridor, which totals 797 acres. The remaining acres are private land. All lands within the segment corridors are zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segments existing conditions and protect the identified ORVs. Designation would enhance the identified fish ORV populations by helping to preserve existing habitat. Threatened coho salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for either of these river segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Previously, the BLM has managed lands within the corridor as a grazing allotment for cattle; however, permitted cattle grazing is not currently occurring in the area on BLM-administered lands. Grazing has not been identified as an impact on the ORVs in the area, but grazing in the corridor may be limited in the future if impacts are observed. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the Indian Creek (Trinity River) Complex were added to the National System, the BLM would manage this area.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Approximately 59 percent of the total segment corridors is on BLM-administered lands. At this time, there are no plans for further acquisitions along any of the segments within the Indian Creek (Trinity River) Complex, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the state and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs. The Trinity River Restoration Partnership and the Yurok Tribe have shown interest in partnering with the BLM to conduct river restoration projects. This sort of cooperative support would help maintain and enhance the ORVs in the Indian Creek (Trinity River) Complex.

If the segments within Indian Creek (Trinity River) Complex were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Trinity County. Trinity County zoning information was not available at the time of this study; however, aerial imagery analysis shows rural residential and commercial infrastructure, including small-scale cannabis farms, on the private lands in or near the corridor. This activity is likely supported by the local plans. However, as described below, the water quality, riparian values, and fish habitat values of Indian Creek are robustly protected by federal, state, and local policies. .

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical

teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Humboldt County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The CWA and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were two comments related to the segments within the Indian Creek (Trinity River) Complex during the public scoping period. The comments were supportive of designation as a WSR and specifically noted the fish and scenic ORVs as meeting eligibility criteria (BLM 2022). During the public comment period, there were two comments received that were supportive of designation. There were no comments opposed to designating any of the Indian Creek (Trinity River) Complex segments as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the segments within Indian Creek (Trinity River) Complex as WSRs would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of the segments within Indian Creek (Trinity River) Complex as WSRs would be consistent with the North Coast Regional Board's mission of protecting water quality.

The Trinity River Restoration Program (TRPP) works collaboratively with Tribes, federal agencies, and state agencies, to restore river function in the Trinity River to support fish recovery. Designation of the Indian Creek (Trinity River) Complex would support the TRRP initiative to improve watershed health by conducting restoration activities on tributaries to the Trinity River.

Additionally, portions of this segment overlap with the Grass Valley Creek ACEC, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to the river system or basin integrity

The segments within Indian Creek (Trinity River) Complex are important contributors to the recovery of the threatened coho salmon and support wild winter-run steelhead. The segments flow into the already designated Trinity River WSR, and designation of these segments would provide consistent management

of ORVs. High levels of public lands within the segments corridors and ease of accessibility would mean efficient and effective management for and protection and enhancement of the identified fish and cultural ORVs.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for any of the segments within Indian Creek (Trinity River) Complex.

2.12.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for VSRs. For segments within the Indian Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Indian Creek I Segment A	Eligible	Suitable	Not Suitable	Suitable
Indian Creek I Segment B	Eligible	Suitable	Not Suitable	Suitable
Indian Creek I Segment C	Eligible	Suitable	Not Suitable	Suitable

2.12.3 Suitability Determination

Based on the contribution this creek complex would offer to basin integrity, the relatively high percentage of public lands in the corridor, and because designation would complement existing agency priorities and programs for fish conservation and river restoration, the segments within the Indian Creek (Trinity River) Complex (Indian Creek I Segment A, Indian Creek I Segment B, and Indian Creek I Segment C) were found **suitable for inclusion** in the National System based on the information within this report.

2.13 LACKS CREEK COMPLEX (LACKS CREEK AND LACKS CREEK TRIBUTARIES)

Complex Description:	Lacks Creek is located in California’s Northern coast range within Humboldt County, approximately 20 miles north of Eureka.		
Field Office:	Arcata	Map:	Map A-13 in Appendix A
Suitability Determination:	All segments within the Lacks Creek Complex were determined to be suitable for inclusion into the National System.		
Lacks Creek			
BLM Segment Length:	7.6 miles	Area on BLM-Administered Land:	2,050 acres
Total Segment Length:	8.2 miles	Total Segment Area:	2,495 acres
ORVs:	Fish, Ecology and Scenic,	Tentative Classification:	Wild

Lacks Creek Tributaries			
BLM Segment Length:	3.6 miles	Total Segment Area:	1,197 acres
Total Segment Length:	3.6 miles	Area on BLM-Administered Land:	1,364 acres
ORVs:	Ecology, Scenic	Tentative Classification:	Wild

2.13.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Three ORVs have been identified as making the segments within Lacks Creek Complex a worthy addition to the National System: fish, ecologic, and scenic. Lacks Creek and Lacks Creek Tributaries are important producers of federally-listed threatened Chinook salmon and winter-run steelhead trout. The segments are also recognized for the rare old-growth forest community within the riparian corridors and the unique scenery that the old-growth forest provides.

Factor 2: Current status of landownership and use in the area

Within Lacks Creek, BLM manages 2,050 acres (82 percent) of the segment corridor, which totals 2,495 acres. The remaining acres are private land. Land within the river corridor is zoned by Humboldt County. Within Lacks Creek Tributaries, BLM manages 1,197 acres (87 percent) of the segment corridor, which totals 1,364 acres. The remaining acres are private land.

Lands within both segment corridors is zoned by Humboldt County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segment's existing conditions and protect the identified ORVs. Designation would enhance fish populations by helping to preserve existing old-growth forest habitat, which is also scenic. Designation would complement the goals and objectives of the BLM.

Designation may prohibit harvesting of forest products around the segments within Lacks Creek Complex. Other resource uses that would be curtailed may include agricultural activities and water diversions or impoundments on Lacks Creek. Mining has historically occurred in the Redwood Creek watershed, and mining activity within Lacks Creek would likely be foreclosed. Any activity that would impede the free-flowing nature of Lacks Creek would be foreclosed by designation. These activities could continue unless they are shown to affect the ORVs such that the segment would no longer be suitable for designation in the National System.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Uses that could be curtailed by designation would include harvesting forest products and agricultural activities such as cattle grazing. These activities could continue unless they are shown to affect the ORVs such that the segment would no longer be suitable for designation in the National System.

Factor 4: The federal agency that will administer the area should it be added to the National System

As the portion of the Lacks Creek Complex that is eligible for designation occurs primarily on land administered by the BLM, the BLM would be most suited to manage the land and resources within this boundary, unless Congress designated another agency.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

It is not expected that WSR designation would substantially increase management costs in this segment, as portions of Lacks Creek are already being managed in a way that would be similar to management under WSR designation. Specifically, management of the portions of Lacks Creek designated as a Resource Natural Area/Area of Critical Environmental Concern would be similar to expected management under WSR designation.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

As the BLM is currently responsible for the preservation and administration of eligible portions of Lacks Creek, other federal agencies, the State of California, or its political subdivisions would likely provide minimal, if any, support in the preservation and administration of portions of Lacks Creek complex under WSR designation.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

A review of Humboldt County zoning and other land use controls found that there are no zoning ordinances specifically targeted at protecting WSRs and preventing incompatible development (Humboldt County 2018).

Land within the river corridor is zoned by Humboldt County. Zoning classifications from Humboldt County include Timberland Production Zone, allowing for timber and timber-related activities, and Agriculture Exclusive, which allows agricultural activities (Humboldt County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2018).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2018). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Humboldt County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on forest use projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2018).

Factor 10: The existing support for or opposition to designation

The public provided input regarding WSRs during public scoping meetings, and the public commented on the eligibility process in general and provided stream-specific ORV information.

Three comments were received that specifically related to designation of Lacks Creek during the public scoping period. All three comments were supportive of designation of Lacks Creek as a WSR and specifically its ORV for anadromous fish. There were two comments received related to Lacks Creek Tributaries. The comments were supportive of designation as a WSR and specifically the ecological and scenic ORVs. (BLM 2022). During the public comment period, three comments were received that were supportive of designation. There were no comments opposed to designating either of the segments within Lacks Creek Complex as WSRs.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Lacks Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of Lacks Creek as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Additionally, portions of these segments overlap with the Lacks Creek ACEC, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to the river system or basin integrity

Designation of the segments within Lacks Creek Complex would provide a significant contribution to the water quality and biological resources in the Redwood Creek watershed. Anadromous fish inhabit much of Lacks Creek and Lacks Creek is a significant tributary to the Redwood Creek watershed.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Lacks Creek. As the land use around Lacks Creek is primarily timber production, the construction of irrigation dams and irrigation and flood control measures is unlikely. As the segments within Lacks Creek Complex are relatively small creeks in a remote wilderness area upstream of Redwood National Park, the construction of hydroelectric dams is also unlikely.

2.13.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For segments within the Lacks Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Lacks Creek	Eligible	Suitable	Suitable	Suitable
Lacks Creek Tributaries	Eligible	Suitable	Suitable	Suitable

2.13.3 Suitability Determination

Lacks Creek and its tributaries were found **suitable for inclusion** into the National System based on information within this report. A significant portion of the Lacks Creek watershed is on federally owned land administered by the BLM. The surrounding land is privately owned and used for timber production. Adding Lacks Creek to the National System would preserve the ORVs by restricting activities in the river corridor. Lacks Creek is also within the Redwood Protection Zone and is a major tributary to Redwood Creek, which flows into Redwood National Park. Preserving Lacks Creek through inclusion in the National System would also contribute to integrity of the Redwood Protection Zone and the preservation of the downstream resources in Redwood Creek and Redwood National Park. Overall, designation of Lacks Creek and its tributaries would provide a significant contribution to the water quality and biological resources in the Lacks Creek and Redwood Creek watersheds.

2.14 SACRAMENTO RIVER COMPLEX (INKS CREEK, INKS CREEK TRIBUTARY, MASSACRE CREEK, PAYNES CREEK, SACRAMENTO RIVER SEGMENTS A-F, SACRAMENTO RIVER BEND TRIBUTARY 1, SACRAMENTO RIVER BEND TRIBUTARY 2, SEVENMILE CREEK, SEVENMILE CREEK TRIBUTARIES, AND TURTLE CREEK)

Complex Description:	The segments within the Sacramento River Complex are located in Tehama County and contribute to the Sacramento River watershed.		
Field Office:	Redding	Map:	Map A-14 in Appendix A
Suitability Determination:	All segments within the Sacramento River Complex were determined suitable for inclusion into the National System		
<i>Inks Creek</i>			
BLM Segment Length:	1.0 miles	Area on BLM-Administered Land:	348 acres
Total Segment Length:	1.0 miles	Total Segment Area:	441 acres
ORVs:	Fish, Cultural, Ecology	Tentative Classification:	Wild
<i>Inks Creek Tributary</i>			
BLM Segment Length:	0.4 miles	Area on BLM-Administered Land:	236 acres
Total Segment Length:	0.4 miles	Total Segment Area:	236 acres
ORV:	Fish, Cultural and Ecology	Tentative Classification:	Wild
<i>Massacre Creek</i>			
BLM Segment Length:	1.8 miles	Area on BLM-Administered Land:	503 acres
Total Segment Length:	1.8 miles	Total Segment Area:	659 acres
ORVs:	Cultural, Ecology	Tentative Classification:	Scenic
<i>Paynes Creek</i>			
BLM Segment Length:	7.7 miles	Area on BLM-Administered Land:	2,273 acres
Total Segment Length:	7.9 miles	Total Segment Area:	2,628 acres
ORV:	Scenic, Fish, Cultural, Ecology	Tentative Classification:	Scenic
<i>Sacramento River Segment A</i>			
BLM Segment Length:	3.8 miles	Area on BLM-Administered Land:	499 acres
Total Segment Length:	24.4 miles	Total Segment Area:	1,698 acres
ORVs:	Scenic, Fish, Cultural, Ecology, Recreation	Tentative Classification:	Recreational

Sacramento River Segment B			
BLM Segment Length:	7.1 miles	Area on BLM-Administered Land:	1,012 acres
Total Segment Length:	24.4 miles	Total Segment Area:	2,390 acres
ORVs:	Scenic, Recreation, Cultural, Ecology, Fish	Tentative Classification:	Scenic
Sacramento River Segment C			
BLM Segment Length:	2.0 miles	Area on BLM-Administered Land:	358 acres
Total Segment Length:	24.4 miles	Total Segment Area:	775 acres
ORVs:	Scenic, Recreation, Cultural, Ecology, Fish	Tentative Classification:	Recreational
Sacramento River Segment D			
BLM Segment Length:	1.9 miles	Area on BLM-Administered Land:	530 acres
Total Segment Length:	24.4 miles	Total Segment Area:	725 acres
ORVs:	Scenic, Recreation, Cultural, Ecology, Fish	Tentative Classification:	Recreational
Sacramento River Segment E			
BLM Segment Length:	0.9 miles	Area on BLM-Administered Land:	175 Acres
Total Segment Length:	24.4 miles	Total Segment Area:	420 acres
ORV:	Scenic, Recreation, Cultural, Ecology, Fish	Tentative Classification:	Wild
Sacramento River Segment F			
BLM Segment Length:	0.1 miles	Area on BLM-Administered Land:	45 acres
Total Segment Length:	24.4 miles	Total Segment Area:	166 acres
ORV:	Scenic, Recreation, Cultural, Ecology, Fish	Tentative Classification:	Scenic
Sacramento River Bend Tributary I Segment A			
BLM Segment Length:	0.7 miles	Area on BLM-Administered Land:	239 acres
Total Segment Length:	0.7 miles	Total Segment Area:	335 acres
ORV:	Cultural, Ecology	Tentative Classification:	Wild
Sacramento River Bend Tributary I Segment B			
BLM Segment Length:	0.3 miles	Area on BLM-Administered Land:	162 acres
Total Segment Length:	0.3 miles	Total Segment Area:	228 acres
ORV:	Ecology, Cultural	Tentative Classification:	Scenic

Sacramento River Bend Tributary 2			
BLM Segment Length:	2.1 miles	Area on BLM-Administered Land:	653 acres
Total Segment Length:	2.1 miles	Total Segment Area:	726 acres
ORVs:	Cultural, Ecology	Tentative Classification:	Scenic
Sevenmile Creek			
BLM Segment Length:	1.3 miles	Area on BLM-Administered Land:	417 acres
Total Segment Length:	4.0 miles	Total Segment Area:	775 acres
ORV:	Cultural, Ecology	Tentative Classification:	Scenic
Sevenmile Creek Tributaries			
BLM Segment Length:	5.8 miles	Area on BLM-Administered Land:	1,587 acres
Total Segment Length:	6.5 miles	Total Segment Area:	2,228 acres
ORV:	Cultural, Ecology	Tentative Classification:	Scenic
Turtle Creek			
BLM Segment Length:	4.3 miles	Area on BLM-Administered Land:	1,413 acres
Total Segment Length:	4.3 miles	Total Segment Area:	1,446 acres
ORV:	Cultural, Ecology	Tentative Classification:	Scenic

2.14.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Sacramento River Complex, there were five ORVs, scenic, fish, cultural, ecological, and recreational, identified as unique, rare, or exemplary at a comparative regional or national scale.

Sacramento River Segments A, B, C, D, E, F, and Paynes Creek have a scenic quality rating of “A.”

Inks Creek, Inks Creek Tributary, and Paynes Creek are important contributors to the recovery of federally listed threatened spring-run Chinook salmon and winter-run steelhead in the Central Valley.

Sacramento River Segments A, B, C, D, E, F, and Paynes Creek are important contributors to the recovery of federally listed endangered winter-run Chinook salmon, federally listed threatened spring-run Chinook salmon, winter-run steelhead trout, and the regionally significant fishery for fall-run Chinook salmon. Winter-run Chinook salmon are also listed by the State of California as endangered.

All segments within the Sacramento River Complex support the imperiled Great Valley Mixed Riparian Forest and Great Valley Cottonwood Riparian Forest. The extensive riparian area is a key remnant of critical habitat for wildlife species in the Sacramento Valley dependent on this dense cover.

Sacramento River Segments A, B, C, D, E, and F contains a rich array of prehistoric sites and remnants of the historic Blue Ridge Flume that ran through the area in the 1870s.

Bordering Inks Creek, Inks Creek Tributary, Sacramento River Bend Tributary I Segment A and Segment B are very large prehistoric Indian villages, camps, and lithic scatters that hold considerable value to Tribes, the public, and the archaeological community. Along a single mile of this stream, from its mouth into the interior, there are at least seven prehistoric sites, including a village nearly an acre in size and likely several feet deep. Along this stretch, artifacts have also been found; some were 12 feet deep and possibly of great antiquity. Workers and supporters related to the historic Blue Ridge Flume nearly 150 years ago used the area around the mouth of the creek as a dump for lumber carried by the flume. A camp was here with historic archaeological remains. After the extension of the flume to Red Bluff, a high trestle spanned this creek at its mouth. Artifacts and foundation remnants can still be found related to the flume's alignment. A narrow section of the creek bordered by a split lava flow was once the swimming hole for the nearby historic Inks Creek Ranch. Rock walls from historic animal husbandry can also be found along this creek.

The Massacre Creek segment includes a prehistoric village with a deep midden deposit. This site adjoining the stream contains human remains and evidence of several long periods of human use focused on hunting and gathering local resources. There is a foundation of a stockman's cabin, lithic scatters, and a large prehistoric village near the Sacramento River. The Blue Ridge Flume passed over the stream at Massacre Flat, where a flume tender's cabin once stood. While the name Massacre Flat has an unknown derivation, there is the possible association of this stream and the flat nearby where a historical battle took place.

Paynes Creek is one of the principal secondary drainages to the Sacramento River in the Sacramento River Bend area. Along its course, there are numerous prehistoric archaeological sites, including villages, rock enclosure camps, hunting blinds, rock shelters, rock stacks, and lithic scatters. One large rock shelter or cave has deposits of human activity going back 7,000 years. A rock enclosure camp provides a glimpse into hunter-forager activities, primarily related to geophyte exploitation. The historic Blue Ridge Flume crossed at the mouth of Paynes Creek. It was a development related to the early lumber industry in Tehama County. Foundations and artifacts connected to that flume still exist.

Sacramento River Segments A, B, C, D, E, and F are heavily used for boat and shoreline fishing, rafting, canoeing, swimming, sightseeing, and hunting. Developed recreation sites are along the corridors for boat access, camping, target shooting, and picnicking.

Along Sevenmile Creek and Sevenmile Creek Tributaries, Native Americans camped in rock-ringed structures, leaving their important cultural deposits behind. At least four rock enclosures and open camps are found here, as well as a short segment of the historically important Tehama Wagon Road dating to the 1860s.

Turtle Creek flows out of Hog Lake, which is surrounded by Indian milling and rock features and a small village. The drainage continues toward the Sacramento River past a modest prehistoric village. This village exhibits multiple periods of occupation. Farther down the stream is a rock enclosure camp with a cupule petroglyph and shallow midden deposit. This unusual, complex camp has proved to be a valuable resource to the heritage-oriented community.

Turtle Creek persists into its volcanic canyon with cascades and a waterfall passing by flaked-stone scatters and a rock shelter that was excavated by Chico State; these proved to be thousands of years old and at least 10 feet deep. Petroglyphs and the only pictograph known in the northern Sacramento Valley, a set of red handprints, occur here. The historic Blue Ridge Flume also crosses this stream near its mouth.

Factor 2: Current status of landownership and use in the area

Within the Inks Creek, BLM manages 348 acres (79 percent) of the segment corridor, which total 441 acres. The remaining acres are private land.

Within the Inks Creek Tributary, BLM manages 236 acres (100 percent) of the segment corridor, which totals 236 acres.

Within Massacre Creek, BLM manages 503 acres (43 percent) of the river corridor, which totals 659 acres. The remaining acres are private land.

Within Paynes Creek, BLM manages 2,273 acres (86 percent) of the river corridor, which totals 2,628 acres. The remaining acres are private land.

Within the Sacramento River Segments A, B, C, D, E, and F, the BLM manages 2,439 acres (37 percent) of the total segment corridors, which totals 6,174 acres. The remaining acres are state or private land.

Within the Sacramento River Bend Tributary 1 and 2 segments, the BLM manages 401 acres (71 percent) of the river corridor, which totals 563 acres. The remaining acres are private land.

Within Sevenmile Creek, BLM manages 417 acres (53 percent) of the river corridor, which totals 775 acres. The remaining 358 acres are private land.

Within Sevenmile Creek Tributaries, BLM manages 1,587 acres (71 percent) of the river corridor, which totals 2,228 acres. The remaining 641 acres are private land.

Within Turtle Creek, the BLM manages 1,413 acres (97 percent) of the river corridor, which totals 1,446 acres. The remaining acres are private land.

All land within the segments' corridors is zoned by Tehama County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Spring-run Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Additionally, designation would support the protection of historic and cultural resources, as well as unique and threatened habitats. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there is one application for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral

entry. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment. Segments with a recreational classification that are ultimately designated would be closed to mineral leasing, allow mineral material development with application of necessary conditions to protect resource values, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting ORVs within the segment corridors; however, livestock grazing could be curtailed if a segment were to be designated, and grazing began to impact its ORVs. Vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of the Sacramento River Complex segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Designation of the Sacramento River Complex segments will have a mixed effect on recreation in the area. Recreation is a major use in the complex area, with hiking, biking, horse riding, hunting, fishing, and wildlife/nature being the primary activities. Recreation use will still continue in this area and some types or recreation, especially dispersed uses may increase and be enhanced with designation. However, designation would guide how and where future recreation infrastructure development occurs in the river corridor itself. This could limit some more developed recreation uses such as trailheads and campgrounds in the river corridor, especially in wild segments.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the Sacramento River Complex were added to the National System, the BLM would manage this area.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the segments' corridors, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

Over the last few decades, the BLM has acquired several parcels in the Sacramento River Complex corridors and in the greater watershed in order to facilitate conservation goals in the area as well provide public access and recreational opportunities. Currently, the BLM administers 64 percent of land in the Sacramento River Complex corridors. The BLM is actively pursuing additional acquisitions from willing sellers in the area; this would likely continue regardless of designation but could put increased priority on acquisitions in the corridor. No cost analysis or estimate was prepared as a part of this study due to the unknown nature of willing sellers in the area.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the State of California and local county entities would ensure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

Preservation and administration of the state-listed and federally listed species of salmon and steelhead within the segment of the Sacramento River Complex would also be supported by participation from state and federal agencies, including the CDFW and USFWS, who are both mandated to conserve listed resources.

If the segments were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in these segments.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the segments' corridors is zoned by Tehama County. Zoning classifications include Government; Agricultural/Upland District, allowing for grazing and agricultural activities; Primary Floodplain, allowing for the support of the river channel to protect safety and property; and Government (Tehama County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region 5 Central Valley Regional Water Quality Control Board has jurisdiction in Tehama County and portions of Shasta County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against

persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and suitability. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There was one comment received related to Inks Creek and Inks Creek Tributary during the public scoping period, specifically in support of a WSR designation and the associated fish, cultural, and ecological ORVs. There was one comment received related to Massacre Creek, which was supportive of a WSR designation and the ecology ORV. During the public comment period, there were two comments received that were supportive of designation.

There was one comment received related to Massacre Creek during the public comment period. The comment was supportive of designation.

There was one comment received related to Paynes Creek during the public comment period. The comment was supportive of designation.

There were seven comments received related to Sacramento River Bend Tributary 1 Segment A and Segment B, and Sacramento River Bend Tributary 2. The comments were supportive of a WSR designation and the associated cultural and ecological ORVs.

There were seven comments received related to Sacramento River Segments A, B, C, D, E, and F during the public scoping period. The comments were supportive of a WSR designation and specifically the fish, scenic, cultural, ecological, and recreational ORVs. During the public comment period, there were six comments received that were supportive of designation.

There were three comments received related to Sevenmile Creek and Sevenmile Creek Tributaries during the public scoping period. The comments were supportive of a WSR designation and specifically the associated cultural and ecological ORVs (BLM 2022). During the public comment period, there were seven comments received that were supportive of designation.

There were no comments received related to Turtle Creek. Additionally, there were no comments related to opposition of WSR designation for any of the segments within the Sacramento River Complex.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the segments within the Sacramento River Complex as WSRs would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Central Valley Regional Board, enforces California water quality laws. Designation of the segments within the Sacramento River Complex as WSRs would be consistent with the Central Valley Regional Board's mission of protecting water quality.

Additionally, portions of these segments overlap with the Sacramento River Bend ACEC, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to the river system or basin integrity

The multitude of eligible segments within the Sacramento River Complex and the large amount of land within the segments' corridors that is on BLM-administered lands allows for a holistic approach to protection strategies and partnerships with federal, non-federal, and the public. Adequate access throughout the corridors ensures effectiveness of management actions to protect and enhance all of the identified ORVs.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are currently no FERC projects proposed for any of the Sacramento River Complex segments.

2.14.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for VSRs. For segments within the Sacramento River Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Inks Creek	Eligible	Suitable	Not Suitable	Suitable
Inks Creek Tributary	Eligible	Suitable	Not Suitable	Suitable
Sacramento River Segment A	Eligible	Suitable	Not Suitable	Suitable
Sacramento River Segment B	Eligible	Suitable	Not Suitable	Suitable
Sacramento River Segment C	Eligible	Suitable	Not Suitable	Suitable
Sacramento River Segment D	Eligible	Suitable	Not Suitable	Suitable
Sacramento River Segment E	Eligible	Suitable	Not Suitable	Suitable
Sacramento River Segment F	Eligible	Suitable	Not Suitable	Suitable
Sacramento River Bend Tributary 1	Eligible	Suitable	Not Suitable	Suitable
Sacramento River Bend Tributary 2	Eligible	Suitable	Not Suitable	Suitable
Sevenmile Creek	Eligible	Suitable	Not Suitable	Suitable
Sevenmile Creek Tributaries	Eligible	Suitable	Not Suitable	Suitable
Massacre Creek	Eligible	Suitable	Not Suitable	Suitable
Paynes Creek	Eligible	Suitable	Not Suitable	Suitable
Turtle Creek	Eligible	Suitable	Not Suitable	Suitable

2.14.3 Suitability Determination

The Sacramento River Complex was found **suitable for inclusion** in the National System based on the information within this report. High percentages of BLM-administered lands with the corridors, ecological connectivity, and consistency of management throughout the segments affords the BLM an opportunity to protect and enhance the identified ORVs.

2.15 SHASTA RIVER COMPLEX (SHASTA RIVER SEGMENT A AND SHASTA RIVER SEGMENT B)

Complex Description:	The segments within the Shasta River Complex are located in Siskiyou County and contribute to the designated Klamath River WSR.		
Field Office:	Redding	Map:	Map A-15 in Appendix A
Suitability Determination:	All segments within the Shasta River Complex were determined to be suitable for inclusion into the National System.		
Shasta River Segment A			
BLM Segment Length:	0.3 miles	Area on BLM-Administered Land:	149 acres
Total Segment Length:	5.5 miles	Total Segment Area:	205 acres
ORV:	Fish, Scenic, Cultural, Recreation	Tentative Classification:	Scenic
Shasta River Segment B			
BLM Segment Length:	3.1 miles	Area on BLM-Administered Land:	885 acres
Total Segment Length:	5.5 miles	Total Segment Area:	1,266 acres
ORVs:	Fish, Scenic, Cultural, Recreation	Tentative Classification:	Recreational

2.15.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Shasta River Complex, four ORVs have been identified as making this segment a worthy addition to the National System. Fish, scenic, cultural, and recreation ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

Both segments in the Shasta River Complex are important contributors to the recovery of federally listed threatened coho salmon in the Klamath River. It also supports one of the largest populations of fall-run Chinook salmon in the basin. Due to its unique capacity to produce fish, the Shasta River Complex has received a large investment in restoration and protection for imperiled species. This river segment is of Class A scenic quality.

These two segments contain important salmonid habitat, the salmon extremely vital to Native American culture now and in the past. Near to these segments on BLM-administered land is a large village site that test excavations proved is thousands of years old and that is eligible for listing on the National Register of Historic Places. Historic gold mining remnants are present in the canyon, including cabin pads, tailings, and

scattered artifacts. Historic Highway 99 and its steel-cantilevered truss Pioneer Bridge, which have historic importance, are on BLM-administered lands in this scenic canyon setting. Route 99, earlier known as the Pacific Highway, dates to 1925 and is an important state landmark.

Factor 2: Current status of landownership and use in the area

Within Shasta River Segment A, BLM manages 149 acres (72 percent) of the river corridor, which totals 205 acres. The remaining acres are private land. Within Shasta River Segment B, BLM manages 885 acres (69 percent) of the river corridor, which totals 1,266 acres. The remaining acres are private or state lands. All lands within the segments' corridors is zoned by Siskiyou County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segment's existing conditions and protect the identified ORVs. Designation would enhance fish populations by helping to preserve existing habitat. Coho salmon, fall-run Chinook salmon, and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Additionally, designation would protect the unique prehistoric artefacts and cultural resources found adjacent to these segments. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment. Segments with a recreational classification that are ultimately designated would be closed to mineral leasing, allow mineral material development with application of necessary conditions to protect resource values, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment's corridor to minimize those impacts.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the Shasta River Complex were added to the National System, the BLM would manage this area.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the segments' corridors, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Throughout the complex, over 70 percent of the segments' corridors are on BLM-administered land. At this time, there are no plans for further acquisitions along Shasta River Complex segments although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

Preservation and administration of the state-listed and federally listed species of salmon within Shasta River Segment A would also be supported by participation from state and federal agencies, including the CDFW and the USFWS, who are both mandated to conserve listed resources.

If the river were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Siskiyou County. Zoning classifications from Siskiyou County include Non-Prime Agriculture District, allowing for agriculture activities (Siskiyou County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical

teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The North Coast Regional Water Quality Control has jurisdiction in Siskiyou County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act, and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were four comments received related to Shasta River Segment A and Segment B during the public scoping period. The comments were supportive of WSR designations and specifically the fish, scenic, cultural, and recreational ORVs (BLM 2022). During the public comment period, there was one comment received that was supportive of designation. There were no comments opposed to designating either of the segments as WSRs.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Shasta River Segment A as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of Shasta River Segment A as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Additionally, portions of these segments overlap with the Shasta and Klamath Rivers Canyon ACEC, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to the river system or basin integrity

Adjacent to the designated Klamath River WSR, designation of the Shasta River Complex segments would increase basin integrity and protection and enhancement of ORVs throughout the Klamath River system. The Klamath River is currently undergoing several major dam removal projects to enhance fisheries habitat for threatened and endangered species; the Shasta River Complex segments would also aid in the protection and enhancement of these species.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for either segment within the Shasta River Complex.

2.15.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For segments within the Shasta River Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Shasta River Segment A	Eligible	Suitable	Not Suitable	Suitable
Shasta River Segment B	Eligible	Suitable	Not Suitable	Suitable

2.15.3 Suitability Determination

Shasta River Complex was found **suitable for inclusion** in the National System based on the information within this report. With a large portion of lands within the corridor on BLM-administered land and adequate access, BLM would be afforded an opportunity for consistent management and effective manageability. Adjacent to the already designated Klamath River WSR provides another opportunity for consistent management of ORVs throughout the river system, especially in the wake of the major dam removal process currently ongoing in the Klamath River.

2.16 THATCHER CREEK

Corridor Description:	Thatcher Creek is located in Mendocino County and contributes to the designated Middle Fork Eel River WSR.		
Field Office:	Arcata	Map:	Map A-16 in Appendix A
Suitability Determination:	Thatcher Creek was determined to be suitable for inclusion into the National System.		
<i>Thatcher Creek</i>			
BLM Segment Length:	1.6 miles	Area on BLM-Administered Land:	547 acres
Total Segment Length:	2.7 miles	Total Segment Area:	752 acres
ORV:	Fish	Tentative Classification:	Wild

2.16.1 Suitability Factors**Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System**

Within Thatcher Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish values was identified as unique, rare, or exemplary at a comparative regional or national scale.

Thatcher Creek is an important contributor to the recovery of federally-listed threatened Chinook salmon and winter-run steelhead in the Middle Fork Eel River. The watershed upstream of BLM-administered lands is almost entirely managed by CDFW or the Forest Service.

Factor 2: Current status of landownership and use in the area

Within this segment, the BLM manages 547 acres (73 percent) of the river corridor, which totals 752 acres. The remaining acres are managed by the state, Forest Service, and private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Chinook salmon and winter-run steelhead in the Middle Fork Eel River would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there is no application for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Thatcher Creek were added to the National System, the BLM and the Forest Service would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 72 percent of the river corridor is already on BLM-administered land. At this time, there are no plans for further acquisitions along Thatcher Creek although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the Forest Service, CDFW, and local county entities would ensure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County Timber Production Zones and Forest Land, allowing for timber production and harvesting activities (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County and portions of Shasta County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take

enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were two comments received related to Thatcher Creek during the public scoping period. The comments were supportive of its designation as a WSR and specifically the associated fish ORV (BLM 2022). During the public comment period, there was one comment received that was supportive of designation. There were no comments opposed to designating Thatcher Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Thatcher Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of Thatcher Creek as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Additionally, portions of this segment overlap with the Yuki Wilderness, leading to additional protective management actions that would support the protection and enhancement of ORVs.

Factor 12: The contribution to the river system or basin integrity

The Thatcher Creek watershed is contained entirely on public lands, offering a prime opportunity for protection and enhancement of its identified ORV. Adjacent to the designated Middle Fork Eel WSR, designation would provide consistent management.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Thatcher Creek.

2.16.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Thatcher Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Thatcher Creek	Eligible	Suitable	Not Suitable	Suitable

2.16.3 Suitability Determination

Thatcher Creek was found **suitable for inclusion** in the National System based on the information within this report. The segment is adjacent to an already designated WSR, lending an opportunity for consistent management, protection, and enhancement of the identified ORVs. Additionally, the entire watershed is contained on public lands, leading to ease of access and effective manageability.

2.17 WEST WEAVER CREEK COMPLEX (WEST WEAVER CREEK, WEST WEAVER CREEK TRIBUTARY, AND GRUB GULCH)

Complex Description:	The segments within the West Weaver Creek Complex are located in Trinity County and contribute to the designated Trinity River WSR.		
Field Office:	Redding	Map:	Map A-17 in Appendix A
Suitability Determination:	All segments within the West Weaver Creek Complex were determined to be suitable for inclusion into the National System		
West Weaver Creek			
BLM Segment Length:	1.4 miles	Area on BLM-Administered Land:	365 acres
Total Segment Length:	1.7 miles	Total Segment Area:	651 acres
ORV:	Fish, Cultural	Tentative Classification:	Scenic
West Weaver Creek Tributary			
BLM Segment Length:	0.1 miles	Area on BLM-Administered Land:	90 acres
Total Segment Length:	0.1 miles	Total Segment Area:	151 acres
ORVs:	Fish, Cultural	Tentative Classification:	Scenic
Grub Gulch			
BLM Segment Length:	0.5 miles	Area on BLM-Administered Land:	86 acres
Total Segment Length:	0.5 miles	Total Segment Area:	291 acres
ORV:	Cultural	Tentative Classification:	Scenic

2.17.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the West Weaver Creek Complex, two ORVs have been identified as making this segment a worthy addition to the National System. Cultural and fish ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

The town of Weaverville owes part of its existence to the extensive gold rush and later-period gold mining in various forms of extracting gold along West Weaver Creek and its tributary Grub Gulch. Here, Euro-American and Chinese miners toiled, using pan, rocker, sluice box, monitors, and dredges in the recovery process. Left behind along this creek system are the extensive tailings and tailing features, rock walls, headwalls, ditches, dams, structure areas, cultivars, and other important evidence of their presence. These largely undisturbed remains have high interpretive value for scientists and the public in better understanding the mining operations that were undertaken here.

The segments within West Weaver Creek Complex are important contributors to the recovery of federally listed threatened coho salmon. They also help support the winter-run steelhead population in the Trinity River watershed.

Factor 2: Current status of landownership and use in the area

Within West Weaver Creek, the BLM manages 365 acres (56 percent) of the river corridor, which totals 651 acres. The remaining acres are managed by the Forest Service and private land. Within West Weaver Creek Tributary, the BLM manages 90 acres (60 percent) of the river corridor, which totals 151 acres. The remaining acres are private land. Within Grub Gulch, BLM manages 86 acres (30 percent) of the river corridor, which totals 291 acres. The remaining acres are private and Forest Service land.

All lands within the segments' corridors are zoned by Trinity County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish populations by helping to preserve existing habitat. Coho salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for these river segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, timber harvesting is not found to be impacting the ORVs in the segments' corridors; however if the segment were to be designated, and timber harvesting or other vegetation management activities were to be found impacting ORVs, they may be modified in the segments' corridors to minimize impacts.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the West Weaver Creek Complex were added to the National System, the BLM and the Forest Service would manage the segments.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Throughout the entire complex, approximately 50 percent of the river corridor is BLM-administered land. At this time, there are no plans for further acquisitions along the West Weaver Creek Complex segments, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

The West Weaver Creek Complex flows through the Weaverville Community Forest, a grassroots community-led initiative to help protect and manage the federal lands surrounding the town of Weaverville. The Forest Service, BLM, Trinity County Resource Conservation District, and community members serve on the Weaverville Community Forest Steering Committee to collaborate on management of the area. This partnership between federal agencies, local organizations, and the public would help support the management of the creek complex for its ORVs and long-term protection.

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs. If segments were not added to the National System, federal, state, and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in these segments.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Trinity County zoning was not available at the time of this study. Aerial imagery analysis showed no roads, development, or otherwise within the WSR corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). Region I North Coast Regional Water Quality Control Board has jurisdiction in Tehama County and portions of Shasta County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were three comments received related to the West Weaver Creek Complex during the public scoping period. The comments were supportive of a WSR designation and specifically the associated fish ORV. Two comments were received related to Grub Gulch specifically, and three comments were related to West Weaver Creek and its tributary. During the public comment period, there were two comments received that were supportive of designation. There were no comments opposed to designating any of the segments within the West Weaver Creek Complex as WSRs.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of West Weaver Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Region I Regional Board, enforces California water quality laws. Designation of West Weaver Creek as a WSR would be consistent with the North Coast Region I Regional Board's mission of protecting water quality.

Designation would support the goals and objectives outlined in the Weaverville Community Forest Strategic Plan which was completed in 2021 through a collaborative process with various agencies and community members. Information in the strategic plan includes guidelines for collaboratively managing creeks for sustainable water yield and fish habitat. The TRPP works collaboratively with Tribes, federal agencies, and state agencies, to restore river function in the Trinity River to support fish recovery. Designation of the Weaver Creek Complex would support the TRRP's initiative to improve watershed health by conducting restoration activities on tributaries to the Trinity River.

Factor 12: The contribution to the river system or basin integrity

The segments within the West Weaver Creek Complex are identified as having high intrinsic potential for coho salmon habitat within the Trinity River Basin. An already designated WSR, the Trinity River would benefit from these segments gaining designation as well. Ecological connectivity would increase within the basin and protection, management, and enhancement of ORVs would be consistent throughout the segments.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for the segments included in the West Weaver Creek complex.

2.17.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For segments within the West Weaver Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
West Weaver Creek	Eligible	Suitable	Not Suitable	Suitable
West Weaver Creek Tributary	Eligible	Suitable	Not Suitable	Suitable
Grub Gulch	Eligible	Suitable	Not Suitable	Suitable

2.17.3 Suitability Determination

The segments within West Weaver Creek Complex were found **suitable for inclusion** in the National System based on the information within this report. Designation would provide consistent management of these and already designated segments within the Trinity River basin. The segments represent a large tract of lands with majority public ownership, leading to good access and manageability. This would provide efficient management, protection, and enhancement of the identified ORVs. Opportunities for partner engagement for management would include local Tribes, the Weaverville Community Forest organization, and the Trinity River Restoration Program.

Chapter 3. Suitability Determination: Not Suitable Segments

The following segments were determined to be not suitable for inclusion into the National System due to a variety of reasons. The rationale is provided for each segment determined to be not suitable for inclusion.

3.1 ANCESTOR CREEK

Corridor Description:	Ancestor Creek is in Mendocino County in the northern Coast Ranges and contributes to the Mattole River watershed.		
BLM Segment Length:	0.3 miles	Area on BLM-Administered Land:	41 acres
Total Segment Length:	0.3 miles	Total Segment Area:	207 acres
ORV:	Fish	Field Office:	Arcata
Tentative Classification:	Scenic	Map:	Map A-1 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		

3.1.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Ancestor Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish was identified as unique, rare, or exemplary at a comparative regional or national scale.

Ancestor Creek is an important contributor to the recovery of federally listed threatened coho salmon and winter-run steelhead in the Mattole River. The State of California also lists coho salmon as threatened.

Factor 2: Current status of landownership and use in the area

The BLM manages 41 acres (20 percent) of the river corridor, which totals 207 acres. The remaining 166 acres are private and state lands. The state holds 92 acres and the private lands total 74 acres. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish populations by helping to preserve existing habitat. Coho salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives. Designation could prohibit development of hydroelectric power facilities. Currently, there are no FERC applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment's corridor to minimize those impacts.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the Ancestor Creek were added to the National System, the BLM and the state would co-manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Twenty percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along the Ancestor Creek segment, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the state and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Timber Production Zone and Forest Land, which allow for timber production and harvesting activities (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with the NOAA Fisheries and the USFWS. The USFWS and NOAA Fisheries are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under CWA (California Water Board 2023). The North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County and portions of Shasta County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act (The Porter-Cologne Water Quality Control Act), the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the state's waters. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

There were no scoping comments submitted pertaining to Ancestor Creek.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Ancestor Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of

Ancestor Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Ancestor Creek contains a minimal amount of BLM-administered lands within its segment. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for the Ancestor Creek segment.

3.1.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Ancestor Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Ancestor Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.1.3 Suitability Determination

Ancestor Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.2 BAKER CREEK

Corridor Description:	Baker Creek is in Humboldt County in the northern Coast Ranges; it contributes to the Mattole River watershed.		
BLM Segment Length:	0.3 miles	Area on BLM-Administered Land:	104 acres
Total Segment Length:	0.3 miles	Total Segment Area:	223 acres
ORV:	Fish	Field Office:	Arcata
Tentative Classification:	Scenic	Map:	Map A-1 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		

3.2.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Baker Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish was identified as unique, rare, or exemplary at a comparative regional or national scale.

Baker Creek is an important contributor to the recovery of federally listed threatened coho salmon, Chinook salmon, and winter-run steelhead in the Mattole River. The State of California also lists coho salmon as threatened.

Factor 2: Current status of landownership and use in the area

The BLM manages 104 acres (47 percent) of the total 223-acre river corridor. The remaining 119 acres are state (37 acres) and private (82 acres) land.

Zoning classifications from Humboldt County include a timberland production zone, which allows the land to be devoted to and used for growing and harvesting timber, along with other compatible uses, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish populations by helping to preserve existing habitat. Coho salmon, Chinook salmon, and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Baker Creek were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 46 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Baker Creek, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the state and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and the ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

The southeast section of the Baker Creek corridor includes a 15-year renewal of a conditional use permit, surface mining permit and reclamation plan for the existing Baker Creek Quarry. These permits were renewed by the BLM in March 2021. A notice of a mitigated negative declaration was signed by the BLM finding no significant adverse environmental effects.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Humboldt County. Zoning classifications from Humboldt County include a Timber Production Zone, which allows for timber production activities (Humboldt County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to WSRs' free-flow status, ORVs, and tentative classifications. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the federal ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). Region I North Coast Regional Water Quality Control Board has jurisdiction in Humboldt County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

There were no scoping comments received related to Baker Creek.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Baker Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, CESA, administered by the Regional Water Board, enforces California water quality laws. Designation of Baker Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Baker Creek contains a minimal amount of BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. One FERC project is proposed for the Baker Creek segment.

3.2.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Baker Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Baker Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.2.3 Suitability Determination

Baker Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal. Additionally, there are federal and state laws that currently apply protections to portions of the ORV. These protections will ensure ORVs and free-flow are protected into the future without WSR designation. Finally, there are collaborations ongoing to continue to restore, protect, and enhance portions of Baker Creek through other agencies and organizations.

3.3 BEAR CREEK COMPLEX (BEAR CREEK SEGMENT A AND BEAR CREEK SEGMENT B)

Corridor Description:	Bear Creek is in Shasta County and contributes to the Sacramento River watershed.		
Field Office:	Redding	Map:	Map A-3 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System.		
<i>Bear Creek Segment A</i>			
BLM Segment Length:	1.8 miles	Area on BLM-Administered Land:	441 acres
Total Segment Length:	8.3 miles	Total Segment Area:	818 acres
ORVs:	Fish, Recreation	Tentative Classification:	Scenic
<i>Bear Creek Segment B</i>			
BLM Segment Length:	1.9 miles	Area on BLM-Administered Land:	469 acres
Total Segment Length:	8.3 miles	Total Segment Area:	866 acres
ORVs:	Fish, Recreation	Tentative Classification:	Wild

3.3.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Bear Creek Complex, two ORVs have been identified as making this segment a worthy addition to the National System. Fish and recreation ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

Much of the Bear Creek Complex is secluded and undeveloped. Access is physically demanding, and this segment is inaccessible by roads or trails. The lack of accessibility and the secluded location contribute to an unmodified natural environment and excellent opportunities for primitive and unconfined types of recreation. The segments are important contributors to the recovery of federally listed threatened winter-run steelhead in the Central Valley.

Factor 2: Current status of landownership and use in the area

For Bear Creek Segment A, BLM manages 441 acres (54 percent) of the segment corridor, which totals 818 acres. The remaining 377 acres are private land. For Bear Creek Segment B, BLM manages 469 acres (54 percent) of the river corridor, which totals 866 acres. The remaining 396 acres are private land. Lands within both segment corridors is zoned by Shasta County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish populations by helping to preserve existing habitat. Spring-run Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORVs in the river corridor; however, livestock grazing could be curtailed if a segment were to be designated, and grazing began to impact the associated ORVs. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORVs.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the Bear Creek Complex were added to the National System, the BLM would manage this area.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 54 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along either of the Bear Creek segments, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Shasta County. Zoning classifications from Shasta County include Exclusive Agriculture and Agricultural Preserve; these classifications allow for a combination of agricultural activities. The intent for areas zoned as exclusive agriculture and agricultural preserve is for agricultural purposes (Shasta County 2023).

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to WSRs' free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make

recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region 5 Central Valley Regional Water Quality Control Board has jurisdiction in Tehama County and portions of Shasta County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were received related to Bear Creek Segment A and Bear Creek Segment B. The comments were supportive of designation as WSRs and specifically noted the fish and recreation ORVs as meeting eligibility criteria (BLM 2022). There were no comments opposed to designating either segment as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of these segments as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Central Valley Regional Board, enforces California water quality laws. Designation of Bear Creek Segment A as a WSR would be consistent with the Central Valley Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

The segments with Bear Creek Complex contain a minimal amount of fragmented BLM-administered lands within its segment corridors. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are currently no FERC projects proposed for the segments within the Bear Creek Complex.

3.3.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For segments within Bear Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Bear Creek Segment A	Eligible	Suitable	Not Suitable	Not Suitable
Bear Creek Segment B	Eligible	Suitable	Not Suitable	Not Suitable

3.3.3 Suitability Determination

Bear Creek Segment A and Bear Creek Segment B were found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs. When looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.4 BELL SPRINGS CREEK COMPLEX (BELL SPRINGS CREEK AND BELL SPRINGS CREEK TRIBUTARY)

Corridor Description:	Bell Springs Creek is in Mendocino County and contributes to the Eel River watershed.		
Field Office:	Arcata	Map:	Map A-5 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
<i>Bell Springs Creek</i>			
BLM Segment Length:	1.3 miles	Area on BLM-Administered Land:	164 acres
Total Segment Length:	1.3 miles	Total Segment Area:	483 acres
ORV:	Fish	Tentative Classification:	Wild
<i>Bell Springs Creek Tributary</i>			
BLM Segment Length:	0.4 miles	Area on BLM-Administered Land:	237 acres
Total Segment Length:	0.4 miles	Total Segment Area:	252 acres
ORV:	Ecology, Scenic	Tentative Classification:	Scenic

3.4.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Bell Springs Creek Complex, three ORVs have been identified as making this segment a worthy addition to the National System. ORVs for fish, ecology, and scenic were identified as unique, rare, or exemplary at a comparative regional or national scale.

Bell Springs Creek is an important contributor to the recovery of federally listed threatened Chinook salmon and winter-run steelhead in the Eel River.

Within Bell Springs Tributary, a rare old-growth forest community is located in the riparian corridor. This rare old-growth forest in the riparian corridor provides unique scenery.

Factor 2: Current status of landownership and use in the area

Within Bell Springs Creek, BLM manages 164 acres (34 percent) of the river corridor, which totals 483 acres. The remaining 319 acres are private land. Within Bell Springs Creek Tributary, BLM manages 237 acres (94 percent) of the river corridor, which totals 252 acres. The remaining 15 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segments' existing conditions and protect the identified ORVs. Designation would enhance fish populations by helping to preserve existing habitat. Federally listed threatened Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for these segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORVs in the segment corridors; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORVs. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORVs.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within Bell Springs Creek Complex were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the segment corridors. Over 34 percent of the total complex corridor is already on BLM-administered land. At this time, there are no plans for further acquisitions along the segments, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the segments were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in these segments.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the segment corridors is zoned by Mendocino County. Zoning classifications from Mendocino County include Rangeland, which allows for rangeland activities; Forestland; and Timberland, which allow for growing, harvesting, and production of timber-related products (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to WSRs' free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County and portions of Shasta County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were received related to Bell Springs Creek and Bell Springs Creek Tributary. The comments were supportive of the segments' designation as WSRs and specifically noted the fish, ecology, and scenic ORVs as meeting eligibility criteria (BLM 2022). There were no comments opposed to designating either segment as WSRs.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Bell Springs Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Bell Springs Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

The segments within Bell Springs Creek Complex contain a minimal amount of fragmented BLM-administered lands within its segment corridors. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Bell Springs Creek.

3.4.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for VWSRs. For the segments within Bell Springs Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Bell Springs Creek	Eligible	Suitable	Not Suitable	Not Suitable
Bell Springs Creek Tributary	Eligible	Suitable	Not Suitable	Not Suitable

3.4.3 Suitability Determination

The segments within Bell Springs Creek Complex were found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without VSR designation.

3.5 BIG CHICO CREEK COMPLEX (BIG CHICO CREEK SEGMENT A, BIG CHICO CREEK SEGMENT B)

Corridor Description:	The segments within the Big Chico Creek Complex are located in Butte County in the foothills of the Sierra Nevada.		
Field Office:	Redding	Map:	Map A-6 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
Big Chico Creek Segment A			
BLM Segment Length:	0.9 miles	Area on BLM-Administered Land:	221 acres
Total Segment Length:	4.2 miles	Total Segment Area:	723 acres
ORV:	Recreation	Tentative Classification:	Scenic
Big Chico Creek Segment B			
BLM Segment Length:	0.6 miles	Area on BLM-Administered Land:	144 acres
Total Segment Length:	4.2 miles	Total Segment Area:	300 acres
ORV:	Recreation	Tentative Classification:	Recreational

3.5.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Big Chico Creek Complex, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for recreation was identified as unique, rare, or exemplary at a comparative regional or national scale.

Most of the Big Chico Creek Complex segment corridors are in remote, rugged, natural settings that offer users outstanding opportunities for primitive types of recreation.

Factor 2: Current status of landownership and use in the area

Within Big Chico Creek Segment A, BLM manages 221 acres (31 percent) of the total 723-acre river corridor. The remaining 502 acres are private land. Within Big Chico Creek Segment B, BLM manages 144 acres (48 percent) of the river corridor, which totals 300 acres. The remaining 156 acres are private land. Land within the river corridor is zoned by Butte County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment. Segments with a recreational classification that are ultimately designated would be closed to mineral leasing, allow mineral material development with application of necessary conditions to protect resource values, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, timber harvesting is not found to be impacting the ORVs in the segments' corridors; however, if the segment were to be designated, and timber harvesting or other vegetation management activities were to be found impacting ORVs, activities may be modified in the segments' corridors to minimize impacts.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Overall, this area is extremely hard to access and the public land is scattered, so most uses of this area, including restoration, vegetation management, or developed recreation are unlikely to occur.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the Big Chico Creek Complex were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 30 percent of the total complex corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along these segments, although land acquisition criteria in the NCIP may allow for future acquisitions, even if the area is not designated.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs. While Chico State Enterprises and the city of Chico own significant parcels of land along Big Chico Creek, these areas are farther downstream from the proposed segments and the areas are disconnected by several different private landowners.

If the segments were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Butte County. Zoning classifications from Butte County include Timberland Production Zone, which allows for growing and harvesting timber (Butte County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to a WSR's free-flow status, ORVs, and tentative classification.

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region 5 Central Valley Regional Water Quality Control Board has jurisdiction in Butte County and portions of Shasta County. The Regional Water Board is responsible for enforcing CESA, the regional Basin Plan, and permits that have been issued for projects. CESA and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate CESA, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

One comment was received related to Big Chico Creek Segment A and Big Chico Creek Segment B during the public scoping period. The comment was supportive of the segments' designation as WSRs and specifically noted the recreation and habitat connectivity provided by the segments. (BLM 2022). During the public comment period, there was one comment received that was supportive of designation. There were no comments opposed to designating either segment as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The CWA protects the nation's waters and the BLM is required to assist in implementing the law. Designation of the segments within Big Chico Creek Complex would support the goals and objectives of this law. On a state level, the Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of the segments within Big Chico Creek Complex as WSRs would be consistent with the Regional Water Board's mission of protecting water quality.

As described in Factor 7, Chico State Enterprises and the city of Chico manage preserves and parks along Big Chico Creek, farther downstream from the proposed segments. These areas have plans designed to protect watershed health. While designation would be compatible with these plans, the distance of the segments from these preserves, the scattered nature of the segments mixed in with private lands, and the inaccessibility of the segments means that designation would also not meaningfully contribute to the goals of these plans. Riparian protections under general BLM management and other laws and policies (CWA, ESA, CESA) would support the goals of these plans in the segments.

Factor 12: The contribution to the river system or basin integrity

The segments within Big Chico Creek Complex contain a minimal amount of fragmented BLM-administered lands within its segments' corridors. There are several state and city managed preserves downstream from the segments. However, the BLM segments are farther upstream and unconnected

from these preserves. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. One FERC project is proposed for Big Chico Creek; however, the project would be located outside of the WSR segments.

3.5.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For the segments within Big Chico Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Big Chico Creek Segment A	Eligible	Suitable	Not Suitable	Not Suitable
Big Chico Creek Segment B	Eligible	Suitable	Not Suitable	Not Suitable

3.5.3 Suitability Determination

Big Chico Creek Segment A was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and ownership is not consistent with management of ORV. When looking at the larger river system, there are parts of Big Chico Creek that are managed for watershed preservation downstream, however these segments are distant and disconnected from these preserves. These segments do not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment, including general BLM riparian management direction. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.6 BOARD TREE CANYON

Corridor Description:	Board Tree Canyon is in Mendocino County in the northern Coast Ranges.		
Field Office:	Arcata	Map:	Map A-40 in Appendix A, Eligibility Study
BLM Segment Length:	0.3 miles	Area on BLM-Administered Land:	217 acres
Total Segment Length:	0.3 miles	Total Segment Area:	222 acres
ORVs:	Fish, Ecology, Scenic	Tentative Classification:	Wild
Suitability Determination:	Not suitable for inclusion into the National System		

3.6.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Board Tree Canyon, three ORVs have been identified as making this segment a worthy addition to the National System. Fish, ecology, and scenery ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

A rare old-growth forest community is in the riparian corridor. This rare old-growth forest in the riparian corridor provides unique scenery. Board Tree Canyon is an important contributor to the recovery of federally listed threatened winter-run steelhead in the Eel River.

Factor 2: Current status of landownership and use in the area

The BLM manages 217 acres (97 percent) of the total 222-acre river corridor. The remaining 5 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment's corridor to minimize those impacts.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Board Tree Canyon were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 97 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Board Tree Canyon, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Rangeland and Forestland, which allow for agricultural and production of timber activities (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to a WSR's free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County and portions of Shasta County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

There were no comments received related to Board Creek Canyon.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Board Creek Canyon as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Board Creek Canyon as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Board Tree Canyon contains a minimal amount of BLM-administered lands within its segment corridor surrounded by private lands, meaning limited availability for access and manageability. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Board Tree Canyon.

3.6.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Board Tree Canyon, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Board Tree Canyon	Eligible	Suitable	Not Suitable	Not Suitable

3.6.3 Suitability Determination

Board Tree Canyon was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.7 BUTLER CREEK

Corridor Description:	Butler Creek is in Mendocino County in the northern Coast Ranges; it contributes to the South Fork Eel River watershed.		
Field Office:	Arcata	Map:	Map A-8 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
BLM Segment Length:	0.8 miles	Area on BLM-Administered Land:	347 acres
Total Segment Length:	0.8 miles	Total Segment Area:	372 acres
ORV:	Fish	Tentative Classification:	Wild

3.7.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Butler Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish was identified as unique, rare, or exemplary at a comparative regional or national scale.

Butler Creek is an important contributor to the recovery of federally listed threatened coho salmon and winter-run steelhead in the South Fork Eel River. The State of California also lists coho salmon as threatened under the CESA.

Factor 2: Current status of landownership and use in the area

The BLM manages 270 acres (72 percent) of the total 372-acre river corridor. The remaining 102 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat.

Spring-run Coho salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment's corridor to minimize those impacts.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Butler Creek were added to the National System, the BLM and private entities would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 72 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Butler Creek, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and the ORV within the

river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Timberland Production, which allows for timber harvesting activities (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to WSRs' free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County and portions of Shasta County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

There were no comments received related to Butler Creek.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Butler Creek as a WSR would support the goals and

objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Butler Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Butler Creek contains a minimal amount of BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Butler Creek.

3.7.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Butler Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Butler Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.7.3 Suitability Determination

Butler Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.8 BUTTE CREEK I SEGMENT A (SACRAMENTO RIVER)

Corridor Description:	Butte Creek I Segment A is in Butte County in the foothills of the Sierra Nevada.		
Field Office:	Redding	Map:	Map A-6 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
BLM Segment Length:	0.7 miles	Area on BLM-Administered Land:	89 acres
Total Segment Length:	0.7 miles	Total Segment Area:	484 acres
ORVs:	Fish, Recreation	Tentative Classification:	Scenic

3.8.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Butte Creek I Segment A, two ORVs have been identified as making this segment a worthy addition to the National System. ORVs for fish and recreation were identified as unique, rare, or exemplary at a comparative regional or national scale.

Butte Creek I Segment A is a stronghold for federally listed threatened spring-run Chinook salmon. It also is one of the only streams in the Central Valley that has a genetically distinct wild population. Butte Creek is an important contributor to the recovery of threatened winter-run steelhead, and it also supports fall-run Chinook salmon. Butte Creek I Segment A also includes increasingly popular whitewater boating with unique rapids for the region.

Factor 2: Current status of landownership and use in the area

The BLM manages 89 acres (18 percent) of the river corridor, which totals 484 acres. The remaining 395 acres are private land. Land within the river corridor is zoned by Butte County, as discussed in Criterion 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Spring-run Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are two applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORVs in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORVs. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORVs.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Butte Creek I Segment A were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 18 percent of the river corridor is already on BLM-administered land. At this time, there are no plans for further acquisitions along Butte Creek I Segment A, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Butte County. Zoning classifications from Butte County include the timber production zone, which allows for timber growth and production activities (Butte County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to WSRs' free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the federal ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region 5 Central Valley Regional Water Quality Control Board has jurisdiction in Butte County and portions of Shasta County. The Regional Water Board is responsible for enforcing the Act, the Basin Plan, and permits that have been issued for projects. The Act and the Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate the Act, the Basin Plan, or a permit (California Water Board 2023).

Criterion 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were related to Butte Creek I Segment A. The comments were supportive of the creek's designation as a WSR and specifically the fish and recreation ORVs (BLM 2022). There were no comments opposed to designating Butte Creek I Segment A as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Butte Creek I Segment A as a WSR would support the goals and objectives of the CWA and ESA. On a state level, the Act, administered by the Central Valley Regional Board, enforces California water quality laws. Designation of Butte Creek I Segment A as a WSR would be consistent with the Central Valley Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Butte Creek contains a minimal amount of BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. Two FERC projects are proposed for Butte Creek I Segment A.

3.8.2 Land Use Plan Alternatives

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Butte Creek I Segment A	Eligible	Suitable	Not Suitable	Not Suitable

3.8.3 Suitability Determination

Butte Creek I Segment A was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal and would not

provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.9 BUTTE CREEK 2 (VAN DUZEN RIVER) COMPLEX (BUTTE CREEK 2, BUTTE CREEK 2 TRIBUTARY 1, BUTTE CREEK TRIBUTARY 2)

Corridor Description:	Butte Creek 2 (Van Duzen Creek) is in Humboldt County in the northern Coast Ranges.		
Field Office:	Arcata	Map:	Map A-9 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
<i>Butte Creek 2</i>			
BLM Segment Length:	1.8 miles	Area on BLM-Administered Land:	618 acres
Total Segment Length:	1.8 miles	Total Segment Area:	853 acres
ORVs:	Ecology, Scenic, Fish	Tentative Classification:	Wild
<i>Butte Creek 2 Tributary 1</i>			
BLM Segment Length:	1.3 miles	Area on BLM-Administered Land:	265 acres
Total Segment Length:	1.3 miles	Total Segment Area:	486 acres
ORVs:	Ecology, Scenic	Tentative Classification:	Wild
<i>Butte Creek 2 Tributary 2</i>			
BLM Segment Length:	0.1 miles	Area on BLM-Administered Land:	49 acres
Total Segment Length:	0.1 miles	Total Segment Area:	149 acres
ORVs:	Ecology, Scenic	Tentative Classification:	Wild

3.9.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Butte Creek 2 Complex, three ORVs have been identified as making this segment a worthy addition to the National System. Ecology, scenic, and fish ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

A rare old-growth forest community is located in the riparian corridors. This rare old-growth forest provides unique scenery. These segments are important contributors to the recovery of federally listed

threatened winter-run and summer-run steelhead in the Van Duzen River. The State of California also lists summer-run steelhead as endangered under the CESA.

Factor 2: Current status of landownership and use in the area

Within Butte Creek 2, BLM manages 618 acres (72 percent) of the total 853-acre river corridor. The remaining 235 acres are private land. Within Butte Creek 2 Tributary 1, BLM manages 265 acres (55 percent) of the river corridor, which totals 485 acres. The remaining 220 acres are private land. Within Butte Creek 2 Tributary 2, BLM manages 49 acres (33 percent) of the river corridor, which totals 149 acres. The remaining 100 acres are private land. Land within the river corridor is zoned by Humboldt County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing conditions and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Spring-run Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for these segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment's corridor to minimize those impacts.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within Butte Creek 2 Complex were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the segment corridors, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the segment corridors. Over 72 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Butte Creek 2 Complex, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the segments were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the segment corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Humboldt County. Zoning classifications from Humboldt County include Unclassified, Timber Production Zone, and Agricultural Exclusive; these classifications allow for timber and agricultural activities (Humboldt County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to WSRs' free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Humboldt County and portions of Shasta County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality

Control Act, the regional Basin Plan and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Four comments were received related to Butte Creek 2, Butte Creek 2 Tributary 1, and Butte Creek 2 Tributary 2. The comments were supportive of the segment designations as WSRs and noted the associated fish, scenic, and ecological ORVs as meeting eligibility criteria (BLM 2022). There were no comments received opposed to designating any of the segments within Butte Creek 2 Complex as WSRs.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Butte Creek 2 as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Butte Creek 2 as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

The segments within Butte Creek 2 Complex contain a minimal amount of BLM-administered lands within its segment corridor and have limited access for manageability. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. One FERC project is proposed for Butte Creek 2; however, it is proposed for outside the corridor boundaries for this segment.

3.9.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For the segments within Butte Creek 2, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Butte Creek 2	Eligible	Suitable	Not Suitable	Not Suitable
Butte Creek 2 Tributary 1	Eligible	Suitable	Not Suitable	Not Suitable
Butte Creek 2 Tributary 2	Eligible	Suitable	Not Suitable	Not Suitable

3.9.3 Suitability Determination

The segments within Butte Creek 2 Complex were found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal and fragmented. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation. Additionally, the BLM-administered lands over which the segment flows are contained in an ACEC, providing further protection to the segment and its ORVs.

3.10 CEDAR GULCH

Corridor Description:	The location of the sensitive cultural site is withheld.		
Field Office:	Redding	Map:	N/A
Suitability Determination:	Not suitable for inclusion into the National System		
BLM Segment Length:	0.2 miles	Area on BLM-Administered Land:	36 acres
Total Segment Length:	0.2 miles	Total Segment Area:	187 acres
ORV:	Cultural	Tentative Classification:	Scenic

3.10.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Cedar Gulch, one ORV has been identified as making this segment a worthy addition to the National System. A cultural ORV was identified as unique, rare, or exemplary at a comparative regional or national scale.

This small stream segment passes within yards of a historic Shasta cemetery, used from the mid-nineteenth century until the early twentieth century. The BLM has restored the looted cemetery by filling holes, constructing a fence, and erecting a number of large and small signs. This is a sacred site to the Shasta Indians. Archaeologists have published a scientific report on artifacts found here that were left by looters. These artifacts indicate early interactions between Euro-American traders and Shasta Indians.

Factor 2: Current status of landownership and use in the area

The BLM manages 36 acres (19 percent) of the river corridor, which totals 187 acres. The remaining 151 acres are private land. Land within the river corridor is zoned by Siskiyou County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat.

Spring-run Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the Cedar Gulch were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Only 19 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Cedar Gulch, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Siskiyou County. Zoning classifications from Siskiyou County include nonprime agriculture lands, which allows for general agricultural activities to occur (Siskiyou County 2023).

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to WSRs' free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the federal ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region 5 Central Valley Regional Water Quality Control Board has jurisdiction in Siskiyou County and portions of Shasta County. The Regional Water Board is responsible for enforcing the Act, the Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate the Porter-Cologne Water Quality Control Act, the Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

There were no comments related to Cedar Gulch.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the McAdam Creek Complex as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of the McAdam Creek Complex as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Cedar Gulch contains a minimal amount of BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Cedar Gulch.

3.10.2 Land Use Plan Alternatives

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Cedar Gulch	Eligible	Suitable	Not Suitable	Not Suitable

3.10.3 Suitability Determination

Cedar Gulch was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal and would not provide adequate access or opportunity for management of ORVs. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.11 CHAMISE CREEK COMPLEX (CHAMISE CREEK AND CHAMISE CREEK TRIBUTARIES)

Corridor Description:	Chamise Creek is in Mendocino County in the northern Coast Ranges.		
Field Office:	Arcata	Map:	Map A-5 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
Chamise Creek			
BLM Segment Length:	0.5 miles	Area on BLM-Administered Land:	206 acres
Total Segment Length:	0.5 miles	Total Segment Area:	403 acres
ORVs:	Ecology, Scenic	Tentative Classification:	Wild
Chamise Creek Tributaries			
BLM Segment Length:	0.6 miles	Area on BLM-Administered Land:	221 acres
Total Segment Length:	0.6 miles	Total Segment Area:	385 acres
ORVs:	Ecology, Scenic	Tentative Classification:	Wild

3.11.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Chamise Creek Complex, two ORVs have been identified as making this segment a worthy addition to the National System. Ecology and scenic ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

A rare old-growth forest community is in the riparian corridors. This rare old-growth forest provides unique scenery.

Factor 2: Current status of landownership and use in the area

Within Chamise Creek, BLM manages 206 acres (51 percent) of the total 403-acre river corridor. The remaining 197 acres are private land. Within Chamise Creek Tributaries, BLM manages 221 acres (57 percent) of the river corridor, which totals 385 acres. The remaining 164 acres are private land. Land within the river corridor is zoned by Mendocino County, as described in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance the scenic and ecology ORVs by helping to preserve the existing resources that contribute to these ORVs.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for these segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Currently, grazing is not found to be impacting the ORVs in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORVs. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORVs.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Chamise Creek Complex were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 51 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Chamise Creek Complex, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the segments were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the segments corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in these segments.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications include Timber Production Zone, Forest Land, and Public Utility Zone; these classifications allow for timber production and land designated to public utilities (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to WSRs' free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make

recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County and portions of Shasta County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on forest use projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

One comment was received related to Chamise Creek and Chamise Creek Tributaries. The comment was supportive of the segments' designations as WSRs and specifically noted the associated scenic and ecology ORVs as meeting eligibility criteria (BLM 2022). There were no comments received opposed to designating Chamise Creek or Chamise Creek Tributaries as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Chamise Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Chamise Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

The Chamise Creek Complex contains a minimal amount of fragmented BLM-administered lands within its segment corridors. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Chamise Creek.

3.11.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For the segments within the Chamise Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Chamise Creek	Eligible	Suitable	Not Suitable	Not Suitable
Chamise Creek Tributaries	Eligible	Suitable	Not Suitable	Not Suitable

3.11.3 Suitability Determination

Chamise Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.12 CHARLTON CREEK COMPLEX (CHARLTON CREEK AND CHARLTON CREEK TRIBUTARIES)

Corridor Description:	Charlton Creek is in Mendocino County in the northern Coast Ranges.		
Field Office:	Arcata	Map:	Map A-5 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
<i>Charlton Creek</i>			
BLM Segment Length:	2.3 miles	Area on BLM-Administered Land:	699 acres
Total Segment Length:	2.3 miles	Total Segment Area:	1,083 acres
ORVs:	Ecology, Scenic	Tentative Classification:	Wild
<i>Charlton Creek Tributaries</i>			
BLM Segment Length:	2.5 miles	Area on BLM-Administered Land:	875 acres
Total Segment Length:	2.5 miles	Total Segment Area:	1,328 acres
ORVs:	Ecology, Scenic	Tentative Classification:	Wild

3.12.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Charlton Creek Complex, two ORVs have been identified as making this segment a worthy addition to the National System. Ecology and scenery ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

A rare old-growth forest community is in the riparian corridor. This rare old-growth forest in the riparian corridor provides unique scenery.

Factor 2: Current status of landownership and use in the area

Within Charlton Creek, BLM manages 699 acres (64 percent) of the total 1,083-acre river corridor. The remaining 384 acres are private land. Within Charlton Creek Tributaries, BLM manages 875 acres (66percent) of the river corridor, which totals 1,328 acres. The remaining 453 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would the ORVs by protecting the resources that contribute to them. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversion on file for these segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Currently, grazing is not found to be impacting the ORVs in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORVs. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORVs.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within Charlton Creek Complex were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 64 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Charlton Creek Complex, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the segments were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in these segments.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Public Facilities, which allow for public utility, and Forest Land and Timberland Production zoning, which allow for timber and timber-related uses (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to WSRs' free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make

recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the federal ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control has jurisdiction in Mendocino County and portions of Humboldt and Trinity Counties. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were received related to Charlton Creek and Charlton Creek Tributaries. The comments were supportive of the segments' designation as a WSR and specifically noted the associated ecology and scenic ORVs as meeting eligibility criteria (BLM 2022). There were no comments received opposed to designating Charlton Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Charlton Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Charlton Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

The segments within the Charlton Creek Complex contain fragmented BLM-administered lands within its segment corridors. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Charlton Creek Complex.

3.12.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Charlton Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Charlton Creek	Eligible	Suitable	Not Suitable	Not Suitable
Charlton Creek Tributaries	Eligible	Suitable	Not Suitable	Not Suitable

3.12.3 Suitability Determination

The segments within the Charlton Creek Complex were found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the BLM-managed lands within the corridor are fragmented and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.13 COLEMAN CREEK

Corridor Description:	Coleman Creek is in Humboldt County and contributes to the Eel River watershed.		
Field Office:	Arcata	Map:	Map A-13 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
BLM Segment Length:	1.1 miles	Area on BLM-Administered Land:	270 acres
Total Segment Length:	1.1 miles	Total Segment Area:	487 acres
ORV:	Fish	Tentative Classification:	Scenic

3.13.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Coleman Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish was identified as unique, rare, or exemplary at a comparative regional or national scale.

Coleman Creek is an important contributor to the recovery of federally listed threatened winter-run steelhead in the Eel River.

Factor 2: Current status of landownership and use in the area

The BLM manages 270 acres (55 percent) of the total 487-acre river corridor. The remaining 217 acres are private land. Land within the river corridor is zoned by Humboldt County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Coleman Creek were added to the National System, the BLM and private entities would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 55 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Coleman Creek, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Humboldt County. Zoning classifications from Humboldt County include Agriculture Exclusive and Timber Production Zone; these classifications allow for timber production and predominately agricultural activities (Humboldt County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protection to a WSR's free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Humboldt County and portions of Mendocino and Trinity Counties. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

One comment was received related to Coleman Creek. The comment was supportive of the segment's designation as a WSR and specifically the associated fish ORV (BLM 2022). There were no comments opposed to designating Coleman Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Coleman Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Coleman Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Coleman Creek contains a minimal amount of BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Coleman Creek.

3.13.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Coleman Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Coleman Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.13.3 Suitability Determination

Coleman Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.14 CRUSO CABIN CREEK

Corridor Description:	Cruso Cabin Creek is in Mendocino County in the northern Coast Ranges.		
Field Office:	Arcata	Map:	Map A-19 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
BLM Segment Length:	0.3 miles	Area on BLM-Administered Land:	99 acres
Total Segment Length:	0.3 miles	Total Segment Area:	211 acres
ORV:	Fish	Tentative Classification:	Scenic

3.14.1 Suitability Factors**Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System**

Within Cruso Cabin Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish has been identified as unique, rare, or exemplary at a comparative regional or national scale.

Cruso Cabin Creek is an important contributor to the recovery of federally listed threatened winter-run steelhead in the South Fork Eel River.

Factor 2: Current status of landownership and use in the area

The BLM manages 99 acres (47 percent) of the total 211-acre river corridor. The remaining 112 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights,

and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the Cruso Cabin Creek were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Forty-seven percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Cruso Cabin Creek, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include the Timber Production Zone and Forest Land, which allow for timber harvesting activities

(Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protection to a WSR's free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the federal ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County and portions Humboldt and Trinity Counties. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate the Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were received related to Cruso Cabin Creek during the public scoping period. The comments were supportive of the creek's designation as a WSR and specifically the associated fish ORV (BLM 2022). During the public comment period, there was four comments received that were supportive of designation. There were no comments received opposed to designating Cruso Cabin Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Cruso Cabin Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Cruso

Cabin Creek as a WSR would be consistent with the North Creek Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Cruso Cabin Creek contains a minimal amount of BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Cruso Cabin Creek.

3.14.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Cruso Cabin Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Cruso Cabin Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.14.3 Suitability Determination

Cruso Cabin Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.15 DEER CREEK

Corridor Description:	Deer Creek is in Tehama County in the Sierra Nevada Foothills.		
Field Office:	Redding	Map:	Map A-15 Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	0.2 miles	Area on BLM-Administered Land:	91 acres
Total Segment Length:	0.2 miles	Total Segment Area:	253 acres
ORV:	Recreation, Fish, Scenery	Tentative Classification:	Scenic

3.15.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Deer Creek, three ORVs have been identified as making this segment a worthy addition to the National System. ORVs for recreation, scenery, and fish were identified as unique, rare, or exemplary at a comparative regional or national scale.

Deer Creek offers a unique and popular wilderness whitewater boating run. Deer Creek is of class A scenic quality. Deer Creek is a stronghold for federally listed threatened spring-run Chinook salmon. It also is one of the only streams in the Central Valley that has a genetically distinct wild population. Deer Creek is an important contributor to the recovery of threatened winter-run steelhead, and it also supports fall-run Chinook salmon.

Factor 2: Current status of landownership and use in the area

The BLM manages 39 acres (25 percent) of the total 153-acre river corridor. The remaining acres are private (103 acres) or Forest Service land (11 acres). Land within the river corridor is zoned by Tehama County, as discussed in Factor 8.

Farther upstream from the segment, the Ishi Wilderness is managed by the Forest Service. Primitive recreation is possible in the wilderness but is limited due to access constraints. The Wilderness is disconnected from the proposed segments with private ranchland in between the federally managed areas. There is no public access or administrative access through the private ranchland.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Spring-run Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there is one application for a dam or diversion on file from Pacific Gas and Electric Company for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, vegetation management activity is not found to be impacting the ORVs in the segment corridor; however, if the segment were to be designated, and vegetation management activities were to be found impacting ORVs, they may be modified in the segment corridor to minimize impacts.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Deer Creek were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 25 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Deer Creek, although land acquisition criteria in the NCIP may allow for future acquisitions, even if not designated or managed as suitable.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county and state entities would ensure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs. However at this time, there are no cooperating partners for this segment.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORVs within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Tehama County. Zoning classifications from Tehama County include Nonprime Agriculture Land, which allows for general agricultural activities (Tehama County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to

minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Siskiyou County and portions of Tehama County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were received related to Deer Creek during the public scoping period. The comments were supportive of the creek's designation as a WSR and specifically the associated fish, recreation and scenic ORVs (BLM 2022). During the public comment period, there were sixteen comments received. The comments were supportive of designation and specifically the aid of protections to threatened salmon runs. There were no comments received opposed to designating Deer Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Deer Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Deer Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Deer Creek contains an extremely minimal amount of BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. One FERC project is proposed for Deer Creek, outside of the proposed segment.

3.15.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Deer Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Deer Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.15.3 Suitability Determination

Deer Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the amount of BLM-managed lands within the corridor is minimal and would not provide adequate access or opportunity for management of ORVs. While the surrounding lands uses of the private ranchland may provide passive support of the maintenance of ORVs, when looking at the larger river system, this segment is extremely tiny and distant from other preserved areas and does not provide a critical link to the systems approach. The extremely small size of this segment means that designation would not meaningfully contribute to protection of the river system as a whole. There are federal and state laws that currently apply protections to the segment. Additionally, the BLM riparian management direction and ACEC designation found in the land use plan provide appropriate and meaningful protections to the BLM managed lands in the Deer Creek Canyon. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.16 EAST BRANCH SOUTH FORK EEL RIVER

Corridor Description:	The East Branch South Fork Eel River is in Mendocino County in the northern Coast Ranges.		
Field Office:	Arcata	Map:	Map A-16 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
BLM Segment Length:	1.2 miles	Area on BLM-Administered Land:	310 acres
Total Segment Length:	1.2 miles	Total Segment Area:	739 acres
ORV:	Fish	Tentative Classification:	Scenic

3.16.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the East Branch South Fork Eel River, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish was identified as unique, rare, or exemplary at a comparative regional or national scale.

The East Branch South Fork Eel River is an important contributor to the recovery of federally listed threatened Chinook salmon and winter-run steelhead in the South Fork Eel River.

Factor 2: Current status of landownership and use in the area

The BLM manages 310 acres (42 percent) of the total 739-acre river corridor. The remaining 429 acres are state or private lands. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there is one application from Pacific Gas and Electric for this river, however it is located outside of the BLM-administered lands.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Uses that could be curtailed by designation would include harvesting forest products and agricultural activities, such as cattle grazing. These activities could continue unless they are shown to affect the ORV such that the segment would no longer be suitable for designation in the National System.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the East Branch South Fork Eel River were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Forty-two percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along the East Branch South Fork Eel River, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the State of California and local county entities would ensure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Rangeland, which allows for livestock grazing activities and the production, harvest, and protection of natural resources. Another zoning classification within the river corridor is Public Facilities, which allows for public utilities (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control has jurisdiction in Mendocino County and portions of Humboldt and Trinity Counties. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were received related to the East Branch South Fork Eel River during the public scoping period. The comments were supportive of the segment's designation as a WSR and specifically the associated fish ORV (BLM 2022). During the public comment period, there were four comments received that were supportive of designation. There were no comments opposed to designating the East Branch South Fork Eel River as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the East Branch South Fork Eel River as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of the East Branch South Fork Eel River as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

East Branch South Fork Eel River contains a minimal amount of fragmented BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. One FERC project is proposed for the East Branch South Fork Eel River; however, its proposed location is outside of this segment corridor.

3.16.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For East Branch South Fork Eel River, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
East Branch South Fork Eel River	Eligible	Suitable	Not Suitable	Not Suitable

3.16.3 Suitability Determination

The East Branch South Fork Eel River was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when

looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without VSR designation.

3.17 ELKHORN CREEK

Corridor Description:	Elkhorn Creek is in Mendocino County in the northern Coast Ranges.		
Field Office:	Arcata	Map:	Map A-19 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
BLM Segment Length:	0.1 miles	Area on BLM-Administered Land:	79 acres
Total Segment Length:	0.1 miles	Total Segment Area:	165 acres
ORV:	Fish	Tentative Classification:	Scenic

3.17.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Elkhorn Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish was identified as unique, rare, or exemplary at a comparative regional or national scale.

Elkhorn Creek is an important contributor to the recovery of federally listed threatened winter-run steelhead in the South Fork Eel River.

Factor 2: Current status of landownership and use in the area

The BLM manages 79 acres (48 percent) of the total 165-acre river corridor. The remaining 86 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversion on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral

material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Elkhorn Creek were added to the National System, the BLM and private entities would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 48 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Elkhorn Creek, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Rangeland and Public Facilities. Rangeland zoning allows for livestock grazing activities and

the production, harvest, and protection of natural resources. Public Facilities zoning allows for public utility uses (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the federal ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control has jurisdiction in Mendocino County and portions of Humboldt and Trinity Counties. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were received related to Elkhorn Creek during the public scoping period. The comments were supportive of the creek's designation as a WSR and specifically the associated fish ORV (BLM 2022). During the public comment period, there were two comments received that were supportive of designation. There were no comments received opposed to designating Elkhorn Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Elkhorn Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Elkhorn Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Elkhorn Creek contains a minimal amount of BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Elkhorn Creek.

3.17.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Elkhorn Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Elkhorn Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.17.3 Suitability Determination

Elkhorn Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.18 EUBANK CREEK

Corridor Description:	Eubank Creek is in Humboldt County in the northern Coast Ranges.		
Field Office:	Arcata	Map:	Map A-27 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
BLM Segment Length:	0.2 miles	Area on BLM-Administered Land:	38 acres
Total Segment Length:	0.2 miles	Total Segment Area:	200 acres
ORV:	Fish	Tentative Classification:	Scenic

3.18.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Eubank Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish was identified as unique, rare, or exemplary at a comparative regional or national scale. Eubank Creek is an important contributor to the recovery of federally listed threatened coho salmon, Chinook salmon, and winter-run steelhead in the Mattole River. The State of California also lists coho salmon as threatened under the CESA.

Factor 2: Current status of landownership and use in the area

The BLM manages 37 acres (19 percent) of the total 200-acre river corridor. The remaining 163 acres are private land. Land within the river corridor is zoned by Humboldt County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Coho salmon, Chinook salmon, and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversion on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment's corridor to minimize those impacts.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Eubank Creek were added to the National System, the BLM and private entities would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Nineteen percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Eubank Creek, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Humboldt County. Zoning classifications from Humboldt County include the Timberland Production Zone, which allows for timber and timber-related activities, and Unclassified, which does not have precise zoning classifications due to a lack of information (Humboldt County 2023).

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protections to a WSR's free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make

recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control has jurisdiction in portions of Humboldt County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

One comment was received related to Eubank Creek during the public scoping period. The comment was supportive of the creek's designation as a WSR and specifically the associated fish ORV (BLM 2022). During the public comment period, there were seven comments received. The comments were supportive of designation and specifically the wild character and biological value. There were no comments received opposed to designating Eubank Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Eubank Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, CESA, administered by the Regional Water Board, enforces California water quality laws. Designation of Eubank Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Eubank Creek contains a minimal amount of BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Eubank Creek.

3.18.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Eubank Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Eubank Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.18.3 Suitability Determination

Eubank Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.19 FISH CREEK

Corridor Description:	Fish Creek is in Mendocino County in the northern Coast Ranges.		
Field Office:	Arcata	Map:	Map A-38 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
BLM Segment Length:	2.5 miles	Area on BLM-Administered Land:	705 acres
Total Segment Length:	2.5 miles	Total Segment Area:	1,145 acres
ORV:	Fish	Tentative Classification:	Scenic

3.19.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Fish Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish was identified as unique, rare, or exemplary at a comparative regional or national scale.

Fish Creek is an important contributor to the recovery of federally listed threatened winter-run steelhead in the Eel River.

Factor 2: Current status of landownership and use in the area

The BLM manages 705 acres (61 percent) of the total 1,145-acre river corridor. The remaining 440 acres are private or state lands. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversion on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Fish Creek were added to the National System, the BLM, the State, and private entities would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 61 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Fish Creek, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the State of California and local county entities would ensure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Rangeland and Public Facilities. Rangeland allows for livestock grazing activities and the production, harvest, and protection of natural resources. Public Facilities allow for public utility use (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protection to a WSR's free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control has jurisdiction in Mendocino County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

There were five comments received related to Fish Creek during the public scoping period. The comments were supportive of the creek's designation as a WSR and specifically the associated fish ORV (BLM 2022). During the public comment period, there was one comment received that was supportive of designation. There were no comments opposed to designating Fish Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Fish Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Fish Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Fish Creek contains a significant amount of fragmented BLM-administered lands within its segment corridor. The contribution to the larger river system is moderate due to its proximity to the designated Eel River WSR.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Fish Creek.

3.19.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Fish Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Fish Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.19.3 Suitability Determination

Fish Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the BLM-managed lands are fragmented and would not provide adequate access or opportunity for management of ORVs. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.20 FOURMILE CREEK

Corridor Description:	Fourmile Creek is in Humboldt County in the northern Coast Ranges.		
Field Office:	Arcata	Map:	Map A-21 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
BLM Segment Length:	4.2 miles	Area on BLM-Administered Land:	859 acres
Total Segment Length:	4.2 miles	Total Segment Area:	1,405 acres
ORV:	Fish	Tentative Classification:	Scenic

3.20.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Fourmile Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish was identified as unique, rare, or exemplary at a comparative regional or national scale.

Fourmile Creek is an important contributor to the recovery of federally listed threatened coho salmon, Chinook salmon, and winter-run steelhead in the Mattole River. The State of California also lists coho salmon as threatened under the CESA.

Factor 2: Current status of landownership and use in the area

The BLM manages 859 acres (61 percent) of the total 1,405-acre river corridor. The remaining 546 acres are private land. Land within the river corridor is zoned by Humboldt County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Coho salmon, Chinook salmon, and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights,

and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Fourmile Creek were added to the National System, the BLM and private entities would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 61 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Fourmile Creek, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Humboldt County. Zoning classifications from Humboldt County include the Timber Production Zone, which allows for timber growth and harvesting activities

(Humboldt County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protection to a WSR's free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Humboldt County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were received related to Fourmile Creek during the public scoping period. The comments were supportive of the creek's designation as a WSR and specifically the associated fish ORV (BLM 2022). During the public comment period, there were seven comments received. The comments were supportive of designation and specifically the wild character and biological value. There were no comments received opposed to designating Fourmile Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Fourmile Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act,

administered by the Regional Water Board, enforces California water quality laws. Designation of Fourmile Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Fourmile Creek contributes to the Mattole River watershed and contains ecological connectivity opportunities as it is an important contributor to the recovery of federally listed threatened coho salmon, Chinook salmon, and winter-run steelhead in the Mattole River.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Fourmile Creek.

3.20.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Fourmile Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Fourmile Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.20.3 Suitability Determination

Fourmile Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.21 GRINDSTONE CREEK

Corridor Description:	Grindstone Creek is in Humboldt County in the northern Coast Ranges.		
Field Office:	Arcata	Map:	Map A-21 in Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System		
BLM Segment Length:	1.5 miles	Area on BLM-Administered Land:	447 acres
Total Segment Length:	1.5 miles	Total Segment Area:	767 acres
ORV:	Fish	Tentative Classification:	Wild

3.21.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Grindstone Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish was identified as unique, rare, or exemplary at a comparative regional or national scale.

Grindstone Creek is an important contributor to the recovery of federally listed threatened coho salmon, Chinook salmon, and winter-run steelhead in the Mattole River. The State of California also lists coho salmon as threatened under the CESA.

Factor 2: Current status of landownership and use in the area

The BLM manages 447 acres (58 percent) of the total 767-acre river corridor. The remaining acres are private (193 acres) and state (127 acres) land. Land within the river corridor is zoned by Humboldt County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Coho salmon, Chinook salmon, and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the BLM's goals and objectives.

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Grindstone Creek were added to the National System, the BLM, State, and private entities would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet the overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 58 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Grindstone Creek, although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with state and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect the land under their jurisdiction for the riparian values and ORV within the river corridor under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Humboldt County. Zoning classifications from Humboldt County include Unclassified and the Timber Production Zone, which allow for timber growth and production activities (Humboldt County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in California.

The CDFW has several measures that can provide protection to a WSR's free-flow status, ORVs, and tentative classification. These include a mandate to protect native species threatened with extinction under the CESA, as well as the CDFW's Lake and Streambed Alternation Program to protect the natural flow

of a river, its banks, and the streambed. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS. NOAA Fisheries and the USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the federal ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water-pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Humboldt County. The Regional Water Board is responsible for enforcing The Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued for projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the state. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river system, stream-specific, and ORV information.

Two comments were received related to Grindstone Creek during the public scoping period. The comments were supportive of the creek's designation as a WSR and specifically the associated fish ORV (BLM 2022). During the public comment period, six comments were received. The comments were supportive of designation and specifically the fish ORV. There were no comments received opposed to designating Grindstone Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Grindstone Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Regional Water Board, enforces California water quality laws. Designation of Grindstone Creek as a WSR would be consistent with the Regional Water Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Grindstone Creek contains a minimal amount of fragmented BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Grindstone Creek.

3.21.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Grindstone Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Grindstone Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.21.3 Suitability Determination

Grindstone Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, there are federal and state laws that currently apply protections to portions of the segment and would be unnecessarily duplicated through WSR designation. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.22 INDIAN CREEK 2 (EEL RIVER TRIBUTARY)

Corridor Description:	This segment is a tributary of Eel River that steams southeast of Farley, California in the Mendocino National Forest. This segment is within Mendocino County.		
Field Office:	Arcata	Map:	Map A-24 Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	1.8 miles	Area on BLM-Administered Land:	453 acres
Total Segment Length:	1.8 miles	Total Segment Area:	797 acres
ORV:	Fish	Tentative Classification:	Recreational

3.22.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Indian Creek 2 (Eel River Tributary), one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish was identified as unique, rare, or exemplary at a comparative regional or national scale.

Indian Creek 2 (Eel River Tributary) is an important contributor to the recovery of federally listed threatened winter-run steelhead in the Eel River.

Factor 2: Current status of landownership and use in the area

The BLM manages 453 acres (56 percent) of the total 797-acre river corridor. The remaining 344 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversion on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a recreational classification that are ultimately designated would be closed to mineral leasing, allow mineral material development with application of necessary conditions to protect resource values, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Indian Creek 2 (Eel River Tributary) was added to the National System, the BLM and private entities would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 56 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Indian Creek 2 (Eel River Tributary), although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Rangeland, which allows for livestock grazing activities and the production, harvest, and protection of natural resources, and Public Facilities, which allows for public utility (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control has jurisdiction in Mendocino County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were two comments received related to Indian Creek 2 (Eel River Tributary) during the public scoping period. The comments were supportive of a WSR designation and specifically the associated fish ORV (BLM 2022). During the public comment period, two comments were received that were in support of designation. There were no comments received opposed to designating Indian Creek 2 (Eel River Tributary) as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Indian Creek 2 (Eel River Tributary) as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of Indian Creek 2 (Eel River Tributary) as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Indian Creek 2 contains a minimal amount of fragmented BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Indian Creek 2.

3.22.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Indian Creek 2, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Indian Creek 2	Eligible	Suitable	Not Suitable	Not Suitable

3.22.3 Suitability Determination

Indian Creek 2 (Eel River Tributary) was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.23 MAD RIVER

Corridor Description:	Mad River is located northeast of Lone Star Junction within Humboldt County.		
Field Office:	Arcata	Map:	Map A-26 Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	0.9 miles	Area on BLM-Administered Land:	228 acres
Total Segment Length:	0.9 miles	Total Segment Area:	763 acres
ORV:	Fish	Tentative Classification:	Scenic

3.23.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Mad River, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish values was identified as unique, rare, or exemplary at a comparative regional or national scale.

Factor 2: Current status of landownership and use in the area

The BLM manages 228 acres (29 percent) of the total 763-acre river corridor. The remaining 535 acres are private land. Land within the river corridor is zoned by Humboldt County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Chinook salmon, summer-run steelhead, and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber

harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the Mad River were added to the National System, the BLM and private entities would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 29 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Mad River although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and the ORV within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Humboldt County. Zoning classifications from Humboldt County include Timber Production Zone and Agricultural Exclusive, allowing for timber growing and harvesting and agricultural activities (Humboldt County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Humboldt County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were two comments received related to the Mad River. The comments were supportive of a WSR designation and specifically the associated fish ORV (BLM 2022). There were no comments received opposed to designating Mad River as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the Mad River as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of the Mad River as a WSR would be consistent with the North coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Mad River contains a minimal amount of fragmented BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for the Mad River.

3.23.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for VSRs. For Mad River, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Mad River	Eligible	Suitable	Not Suitable	Not Suitable

3.23.3 Suitability Determination

Mad River was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without VSR designation.

3.24 MATTOLE RIVER COMPLEX (MATTOLE RIVER SEGMENT A, MATTOLE RIVER SEGMENT B, MATTOLE RIVER SEGMENT C)

Complex Description:	The Mattole River Complex is in Humboldt County in the north Coast Ranges and contributes to the Mattole River watershed.		
Field Office:	Arcata	Map:	Map A-21 Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System.		
Mattole River Segment A			
BLM Segment Length:	0.5 miles	Area on BLM-Administered Land:	85 acres
Total Segment Length:	14.7 miles	Total Segment Area:	291 acres
ORV:	Fish	Tentative Classification:	Wild
Mattole River Segment B			
BLM Segment Length:	1.6 miles	Area on BLM-Administered Land:	366 acres
Total Segment Length:	14.7 miles	Total Segment Area:	597 acres
ORV:	Fish	Tentative Classification:	Scenic

Mattole River Segment C			
BLM Segment Length:	0.2 miles	Area on BLM-Administered Land:	38 acres
Total Segment Length:	14.7 miles	Total Segment Area:	217 acres
ORV:	Fish	Tentative Classification:	Scenic

3.24.1 Suitability Factor

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Mattole River Complex, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish values was identified as unique, rare, or exemplary at a comparative regional or national scale.

The Mattole River Complex is an important contributor to the recovery of federally-listed threatened coho salmon, Chinook salmon, and winter-run steelhead. Coho salmon are also listed by the State of California as threatened under the CESA.

Factor 2: Current status of landownership and use in the area

Within Mattole River Segment A, BLM manages 85 acres (29 percent) of the total 291-acre river corridor. The remaining 207 acres are private land. Within Mattole River Segment B, The BLM manages 366 acres (44 percent) of the river corridor, which totals 597 acres. The remaining 231 acres are private land. Within Mattole River Segment C, BLM manages 37 acres (17 percent) of the river corridor, which totals 217 acres. The remaining 180 acres are private land. Land within the river corridor is zoned by Humboldt County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segment's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Coho salmon, Chinook salmon, and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there is no application for dams or diversions on file for these segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed,

subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the segment corridors; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segments corridors to minimize impacts on the ORV.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the Mattole River Complex were added to the National System, the BLM and private entities would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the segment corridors. Over 29 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along the Mattole River Complex although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If these segments were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and the ORV within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the segment corridors is zoned by Humboldt County. Zoning classifications from Humboldt County include Timber Production Zone, allowing for timber harvesting activities (Humboldt County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Humboldt County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were two comments received related to Mattole River Segment A, Mattole River Segment B, and Mattole River Segment C during the public scoping period. The comments were supportive of designation as a WSR and specifically the associated fish ORV (BLM 2022). During the public comment period, there were five comments received. The comments were supportive of designation and specifically the wild character and biological value. There were no comments received opposed to designating any of the segments within the Mattole River Complex as WSRs.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the Mattole River Complex as a WSR would support the

goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of the Mattole River Complex as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

The Mattole River Complex contains a minimal amount of fragmented BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for the segments within the Mattole River Complex.

3.24.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For the segments within the Mattole River Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Mattole River Segment A	Eligible	Suitable	Not Suitable	Not Suitable
Mattole River Segment B	Eligible	Suitable	Not Suitable	Not Suitable
Mattole River Segment C	Eligible	Suitable	Not Suitable	Not Suitable

3.24.3 Suitability Determination

The segments within the Mattole River Complex were found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation. Additionally, while outside organizations have had success in creek protection and restoration across boundaries in this watershed, the BLM-administered lands are small and scattered tracts, making management for ORVs difficult. BLM-managed segments would not lend to comprehensive protections for the watershed.

3.25 McADAM CREEK COMPLEX (McADAM CREEK AND McADAM CREEK TRIBUTARY)

Corridor Description:	The location of the sensitive cultural site is withheld.		
Field Office:	Reeding	Map:	N/A
Suitability Determination:	Not suitable for inclusion into the National System.		
<i>McAdam Creek</i>			
BLM Segment Length:	0.5 miles	Area on BLM-Administered Land:	166 acres
Total Segment Length:	0.5 miles	Total Segment Area:	339 acres
ORV:	Cultural	Tentative Classification:	Scenic

McAdam Creek Tributary			
BLM Segment Length:	0.5 miles	Area on BLM-Administered Land:	148 acres
Total Segment Length:	0.5 miles	Total Segment Area:	301 acres
ORV:	Cultural	Tentative Classification:	Scenic

3.25.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the McAdam Creek Complex, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for cultural values was identified as unique, rare, or exemplary at a comparative regional or national scale.

Factor 2: Current status of landownership and use in the area

BLM manages 165 acres (49 percent) of the total 332-acre river corridor. The remaining acres are state, Forest Service, and private land. Land within the river corridor is zoned by Siskiyou County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would protect sensitive cultural sites and would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for these segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the segment corridors; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment corridors to minimize impacts on the ORV.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the McAdam Creek Complex were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 49 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along the McAdam Creek Complex although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the state, Forest Service, and local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Siskiyou County. Zoning classifications from Siskiyou County include Rural Residential Agricultural, allowing for small scale homesteading activities (Siskiyou County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical

teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Siskiyou County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were no comments received related to the McAdam Creek Complex.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the McAdam Creek Complex as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of the McAdam Creek Complex as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

The McAdam Creek Complex contribution to the larger river system is low and there are not opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for the McAdam Creek Complex.

3.25.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For McAdam Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
McAdam Creek	Eligible	Suitable	Not Suitable	Not Suitable
McAdam Creek Tributaries	Eligible	Suitable	Not Suitable	Not Suitable

3.25.3 Suitability Determination

The segments within the McAdam Creek Complex were found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation. Additionally, archeological laws offer robust protections for the site and the surroundings.

3.26 MILL CREEK

Corridor Description:	This segment is located southeast of the Dye Creek Preserve and northwest of Buena Vista within Tehama County.		
Field Office:	Redding	Map:	Map A-32 Appendix A, Eligibility Study
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	0.2 miles	Area on BLM-Administered Land:	50 acres
Total Segment Length:	0.2 miles	Total Segment Area:	176 acres
ORV:	Scenic, Geology, Cultural, Fish, Wildlife	Tentative Classification:	Wild

3.26.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Mill Creek, five ORVs have been identified as making this segment a worthy addition to the National System. Scenic, geology, cultural, fish, and wildlife ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

Mill Creek has a scenic quality rating of “A.” Flowing out of the Cascade Range, the creek has cut its way into Cenozoic volcanic rocks and sediments of volcanic origin. A large Yahi Indian village, with house pits, rock talus features, and several small occupation rock shelters, are on BLM-administered lands along this creek. These sites are part of a larger complex of archaeological locations in this stretch of Mill Creek Canyon that are eligible for listing on the National Register of Historic Places as a district due to their scientific values.

Mill Creek is regarded as one of the best remaining habitats in the Central Valley and is a stronghold for federally listed threatened spring-run Chinook salmon. It is one of the only streams in the Central Valley that has a genetically distinct wild population. Mill Creek is an important contributor to the recovery of threatened winter-run steelhead, and it also supports fall-run Chinook salmon. The geological formations along the creek provide excellent nesting areas for several species of raptors, including prairie falcons, red tailed hawks, turkey vultures, and golden eagles.

Factor 2: Current status of landownership and use in the area

The BLM manages 50 acres (28 percent) of the total 175-acre river corridor. The remaining 265 acres are private land. Land within the river corridor is zoned by Tehama County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Spring-run Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are four applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Mill Creek were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 28 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions

along Mill Creek although land acquisition criteria in the NCIP may allow for future acquisitions, even if the area is not designated or found suitable.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the local county entities would ensure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

Mill Creek is protected under the California Wild and Scenic River System. The protection includes the stipulation that no new dam, reservoir, diversion, or other water impoundment facility shall be constructed on Mill Creek from the headwaters of East Sulphur Creek within Section 15 T30N R4E to the United States Geological Survey gauging station in the northeast quarter of the northwest quarter of Section 6 T25N, R1W.

If the river were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Tehama County. Zoning classifications from Tehama County include Agricultural Upland, allowing for grazing and agricultural compatible uses Activities (Tehama County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region 5 Central Valley Regional Water Quality Control Board has jurisdiction in Tehama County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and

the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Mill Creek is protected under the California Wild and Scenic River System. The protection includes the stipulation that no new dam, reservoir, diversion, or other water impoundment facility shall be constructed on Mill Creek from the headwaters of East Sulphur Creek within Section 15 T30N R4E to the United States Geological Survey gauging station in the northeast quarter of the northwest quarter of Section 6 T25N, R1W.

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were two received comments related to Mill Creek during the public scoping period. The comments were supportive of designation as a WSR and specifically the associated fish and scenic ORVs as meeting eligibility criteria (BLM 2022). During the public comment period, there were four comments received. The comments were supportive of designation and specifically the aid of protections to threatened salmon runs. There were no comments received opposed to designating Mill Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Mill Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Central Coast Regional Board, enforces California water quality laws. Designation of Mill Creek as a WSR would be consistent with the Central Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Mill Creek contains an extremely minimal amount of land on BLM-administered lands within its segment corridor. Access and management opportunities are low. The extremely small nature of the segment means that its contribution to the larger river system would be low.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed within the segment corridor, which aligns with the State protections for this creek.

3.26.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Mill Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Mill Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.26.3 Suitability Determination

Mill Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the amount of BLM-managed lands within the corridor is minimal and would not provide adequate access or opportunity for management of ORVs. While the surrounding lands uses of the private ranchland may provide passive support of the maintenance of ORVs, when looking at the larger river system, this segment is extremely tiny and distant from other preserved areas and does not provide a critical link to the systems approach. The extremely small size of this segment means that designation would not meaningfully contribute to protection of the river system as a whole. There are federal and state laws that currently apply protections to the segment. Additionally, the BLM riparian management direction found in the land use plan provide appropriate and meaningful protections to the BLM managed lands along Mill Creek. Mill Creek currently has a high level of protection from the California Wild and Scenic River Act for a much larger segment of the creek than what is included in the BLM-managed segment. These protections provide a more meaningful contribution to holistic conservation of the free-flow and ORVs on Mill Creek, even without federal designation.

3.27 PIPE CREEK

Corridor Description:	Pipe Creek is located in Humboldt County. This segment is located southeast of Harris, California.		
Field Office:	Arcata	Map:	See Map A30 in Appendix A, Eligibility Report
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	0.6 miles	Area on BLM-Administered Land:	125 acres
Total Segment Length:	0.6 miles	Total Segment Area:	306 acres
ORV:	Fish	Tentative Classification:	Scenic

3.27.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Pipe Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish values was identified as unique, rare, or exemplary at a comparative regional or national scale.

Pipe Creek is an important contributor to the recovery of federally-listed threatened winter-run steelhead in the Eel River.

Factor 2: Current status of landownership and use in the area

The BLM manages 125 acres (60 percent) of the total 306-acre river corridor. The remaining 181 acres are private land. Land within the river corridor is zoned by Humboldt County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Pipe Creek were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 60 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Pipe Creek although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

Preservation and administration of the state-listed and federally listed species of salmon within Pipe Creek would also be supported by participation from state and federal agencies, including the CDFW and USFWS, who are both mandated to conserve listed resources.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Humboldt County. Zoning classifications from Humboldt County include Timberland Production, allowing for timber and timber-related activities. The intent for areas zoned as Rural Residential Agriculture is for single family residential and general agriculture uses (Humboldt County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control has jurisdiction in Humboldt County. The Regional Water Board

is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were five comments received related to Pipe Creek. The comments were supportive of designation as a WSR and specifically the associated fish ORV (BLM 2022). There were no comments received opposed to designating Pipe Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Pipe Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of Pipe Creek as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Pipe Creek contains a minimal amount of BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Pipe Creek.

3.27.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Pipe Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Pipe Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.27.3 Suitability Determination

Pipe Creek was found not suitable for inclusion in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the

percentage of BLM-managed lands within the corridor is minimal and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.28 RATTLESNAKE CREEK

Corridor Description:	Rattlesnake Creek is located in Mendocino County west of Cummings, California. This segment flows through Tehachapi Mountains,		
Field Office:	Arcata	Map:	See Map A11 in Appendix A, Eligibility Report
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	0.6 miles	Area on BLM-Administered Land:	162 acres
Total Segment Length:	0.6 miles	Total Segment Area:	299 acres
ORV:	Fish	Tentative Classification:	Recreational

3.28.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Rattlesnake Creek, one ORVs has identified as making this segment a worthy addition to the National System. An ORV for fish values was identified as unique, rare, or exemplary at a comparative regional or national scale.

Rattlesnake Creek is an important contributor to the recovery of federally listed threatened coho salmon, Chinook salmon, and winter-run steelhead. Coho salmon are also listed by the State of California as threatened under the CESA.

Factor 2: Current status of landownership and use in the area

The BLM manages 157 acres (52 percent) of the total 299-acre river corridor. The remaining 142 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Chinook salmon, coho salmon, and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a recreational classification that are ultimately designated would be closed to mineral leasing, allow mineral material development with application of necessary conditions to protect resource values, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment's corridor to minimize those impacts.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Rattlesnake Creek were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 52 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Rattlesnake Creek although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

Preservation and administration of the state-listed and federally listed species of salmon within Rattlesnake Creek would also be supported by participation from state and federal agencies, including the CDFW and USFWS, who are both mandated to conserve listed resources.

If the river were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Timberland Production Zone, allowing for timber and timber-related activities (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control has jurisdiction in Mendocino County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were two comments received related to Rattlesnake Creek. The comments were supportive of designation as a WSR and specifically the fish ORV (BLM 2022). There were no comments received opposed to designating Rattlesnake Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Rattlesnake Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of Rattlesnake Creek as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Rattlesnake Creek contains a minimal amount of scattered BLM-administered lands within its segment corridor. The segment is adjacent to the designated Eel River WSR; designation of Rattlesnake Creek would provide consistent management.

Factor 13: The potential for water resources development

The potential for water resource developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Rattlesnake Creek.

3.28.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Rattlesnake Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Rattlesnake Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.28.3 Suitability Determination

Rattlesnake Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, though the segment is adjacent to a designated WSR, the segment is in a developed area with little land administered by BLM, leading to low access and manageability.

3.29 SACRAMENTO RIVER SEGMENT G

Corridor Description:	Sacramento River Segment G is located in Tehama County and contributes to the Sacramento River Watershed		
Field Office:	Redding	Map:	See Map A32 in Appendix A, Eligibility Report
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	0.1 miles	Area on BLM-Administered Land:	17 acres
Total Segment Length:	0.1 miles	Total Segment Area:	161 acres
ORV:	Scenic, Recreation, Cultural, Ecology, Fish	Tentative Classification:	Wild

3.29.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Sacramento River Segment G, five ORVs have been identified as making this segment a worthy addition to the National System. Scenic, recreation, cultural, ecological, and fish ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

Sacramento River Segment G has a scenic quality rating of “A.” The river is heavily used for boat and shoreline fishing, rafting, canoeing, swimming, sightseeing, and hunting. Developed recreation sites are along the corridor for boat access, camping, target shooting, and picnicking. The segment contains a rich array of prehistoric sites and remnants of the historic Blue Ridge Flume that ran through the area in the 1870s (BLM 2022).

Sacramento River Segment G supports the imperiled Great Valley Mixed Riparian Forest and Great Valley Cottonwood Riparian Forest. Sacramento River Segment G is an important contributor to the recovery of federally listed endangered winter-run Chinook salmon, federally listed threatened spring-run Chinook salmon, winter-run steelhead trout, and the regionally significant fishery for fall-run Chinook salmon. Winter-run Chinook salmon are also listed by the State of California as endangered under the CESA.

Factor 2: Current status of landownership and use in the area

The BLM manages 17 acres (10 percent) of the total 161-acre river corridor. The remaining 145 acres are private land. Land within the river corridor is zoned by Tehama County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river’s existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Spring-run Chinook salmon and winter-run steelhead would continue to be protected under the ESA and

further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there is one application for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the Sacramento River Segment G were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 10 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Sacramento River Segment G although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated VSRs.

Preservation and administration of the state-listed and federally listed species of salmon within Sacramento River Segment G would also be supported by participation from state and federal agencies, including the CDFW and the USFWS, who are both mandated to conserve listed resources.

If the river were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Tehama County. Zoning classifications from Tehama County include Primary Floodplain, allowing for the support of the river channel to protect safety and property (Tehama County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region 5 Central Valley Regional Water Quality Control Board has jurisdiction in Tehama County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were two comments received related to Sacramento River Segment G. The comments were supportive of designation as a WSR and specifically the associated scenic, recreation, cultural, ecology, fish ORVs (BLM 2022). There were no comments received opposed to designating Sacramento River Segment G as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Sacramento River Segment G as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Central Valley Regional Board, enforces California water quality laws. Designation of Sacramento River Segment G as a WSR would be consistent with the Central Valley Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Sacramento River Segment G contains a minimal amount of BLM-administered lands within its segment corridor and is a very small segment of the river. The segment contributes to the larger Sacramento River watershed.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There is one FERC project proposed for Sacramento River Segment G, though the project would be located outside of the segment corridor.

3.29.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Sacramento River Segment G, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Sacramento River Segment G	Eligible	Suitable	Not Suitable	Not Suitable

3.29.3 Suitability Determination

Sacramento River Segment G was found **not suitable for inclusion** in the National System based on the information within this report. Designation would also provide consistent management of the river system, however there are federal and state laws that currently apply protections to portions of the segment, which would be unnecessarily duplicated through WSR designation. Additionally, there are collaborations ongoing to continue to restore, protect, and enhance portions of Sacramento River Segment G through other agencies and organizations.

3.30 SCHOOL SECTION CREEK COMPLEX (SCHOOL SECTION CREEK, SCHOOL SECTION CREEK TRIBUTARY 1, AND SCHOOL SECTION CREEK TRIBUTARY 2)

Complex Description:	The segments within the School Section Creek Complex are located in Mendocino County and contribute to the designated Eel River WSR.		
Field Office:	Arcata	Map:	See Map A33 in Appendix A, Eligibility Report
Suitability Determination:	Not suitable for inclusion into the National System.		

School Section Creek			
BLM Segment Length:	0.8 miles	Area on BLM-Administered Land:	279 acres
Total Segment Length:	0.8 miles	Total Segment Area:	463 acres
ORV:	Botany, Fish	Tentative Classification:	Scenic
School Section Creek Tributary 1			
BLM Segment Length:	1.0 miles	Area on BLM-Administered Land:	258 acres
Total Segment Length:	1.0 miles	Total Segment Area:	559 acres
ORV:	Botany	Tentative Classification:	Scenic
School Section Creek Tributary 2			
BLM Segment Length:	0.7 miles	Area on BLM-Administered Land:	204 acres
Total Segment Length:	0.7 miles	Total Segment Area:	345 acres
ORV:	Botany	Tentative Classification:	Scenic

3.30.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the School Section Creek Complex, two ORVs have been identified as making this segment a worthy addition to the National System. ORVs for botany and fish values were identified as unique, rare, or exemplary at a comparative regional or national scale.

The segments within the School Section Creek Complex support a hydrologically connected, serpentine-influenced, unique, and exemplary hanging fen with endemic, special status rare plants. School Section Creek is an important contributor to the recovery of federally-listed threatened winter-run steelhead in the South Fork Eel River.

Factor 2: Current status of landownership and use in the area

Within School Section Creek, BLM manages 279 acres (60 percent) of the total 463-acre river corridor. The remaining 184 acres are private land. Within School Section Creek Tributary 1, BLM manages 258 acres (46 percent) of the river corridor, which totals 558 acres. The remaining 301 acres are private land. Within School Section Creek Tributary 2, BLM manages 204 acres (59 percent) of the river corridor, which totals 345 acres. The remaining 141 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segments existing conditions and protect the identified ORVs. Designation would enhance fish and plant populations by helping to preserve existing

habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for these segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORVs in the river corridor; however, livestock grazing could be curtailed if the segments were to be designated, and grazing began to impact the ORVs. Timber harvesting or other vegetation management activities may be modified in the segment corridors to minimize impacts on the ORVs.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the School Section Creek Complex were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 60 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along School Section Creek although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated VSRs.

Preservation and administration of the state-listed and federally-listed species of salmon within the School Section Creek Complex would also be supported by participation from state and federal agencies, including the CDFW and USFWS, who are both mandated to conserve listed resources.

If the segments were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Timberland Production Zone, allowing for timber and timber related activities, and Public Facilities, which utilizes land for the benefit of the public (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control has jurisdiction in Mendocino County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were no comments received related to the segments within the School Section Creek Complex (BLM 2022) during the public scoping period. During the public comment period, there were two comments that was received that was supportive of designation.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the School Section Creek Complex as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of School Section Creek as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

The segments within the School Section Creek Complex contain a majority of BLM-administered land. The segments overlap with the South Fork Eel River Wilderness and contribute to the South Fork Eel River.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for the School Section Creek Complex.

3.30.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For segments within the School Section Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
School Section Creek	Eligible	Suitable	Not Suitable	Not Suitable
School Section Creek Tributary 1	Eligible	Suitable	Not Suitable	Not Suitable
School Section Creek Tributary 2	Eligible	Suitable	Not Suitable	Not Suitable

3.30.3 Suitability Determination

The School Section Creek Complex was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs, however; the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.31 SCORPION GULCH

Corridor Description:	Scorpion Gulch is located in Shasta County, south of Fairview, California. This segment flows within the Klamath Mountains.		
Field Office:	Redding	Map:	See Map A34 in Appendix A, Eligibility Report
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	0.7 miles	Area on BLM-Administered Land:	256 acres
Total Segment Length:	0.7 miles	Total Segment Area:	357 acres
ORV:	Cultural	Tentative Classification:	Scenic

3.31.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Scorpion Gulch, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for cultural values was identified as unique, rare, or exemplary at a comparative regional or national scale.

A number of the earliest historic lode gold mines in California, including the Washington, Philadelphia, Tom Green, and Brunswick mines, occur along this stream segment. Historic archaeological remains include mines, waste-rock piles, mill sites, artifact dumps, structures, roads, and trails that help in the interpretation of the mining history of this county and beyond. Furthermore, one of the earliest towns in Shasta County, Monroeville, has structural and other archaeological remains, including evidence of gold rush placer mining, scattered along the stream. Both Euro-American and Chinese operations are represented. This mining district of placer and lode mines is a significant representation of the long history of mining in the Klamath Mountains with well-preserved archaeological and historic architectural values, including the historic, renovated Washington Mill.

Factor 2: Current status of landownership and use in the area

The BLM manages 256 acres (71 percent) of the total 357-acre river corridor. The remaining 101 acres are private land. Land within the river corridor is zoned by Shasta County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would preserve historic and cultural resources unique to this location. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Scorpion Gulch were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 71 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Scorpion Gulch although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Shasta County. Zoning classifications from Shasta County include Mineral Resource, allowing for mining activities, and Unclassified (Shasta County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region 5 Central Valley Regional Water Quality Control Board has jurisdiction in Shasta County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There was one comment received related to Scorpion Gulch. The comment was supportive of designation as a WSR and specifically the associated cultural ORV as meeting eligibility criteria (BLM 2022). There were no comments received opposed to designating Scorpion Gulch as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The CWA is a federal law that is meant to provide for the quality of the nation's waters. The BLM is required to assist in implementing this law. Designation of Scorpion Gulch as a WSR would support the goals and objectives of the CWA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of Scorpion Gulch as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

The contribution of Scorpion Gulch to the larger river system is low and there are not opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Scorpion Gulch.

3.31.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Scorpion Gulch, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Scorpion Gulch	Eligible	Suitable	Not Suitable	Not Suitable

3.31.3 Suitability Determination

Scorpion Gulch was found **not suitable for inclusion** in the National System based on the information within this report. Designation would also provide consistent management of the river system, however there are federal and state laws that currently apply protections to portions of the segment, which would be unnecessarily duplicated through WSR designation. Additionally, there are collaborations ongoing to continue to restore, protect, and enhance portions of Scorpion Gulch through other agencies and organizations.

3.32 SHELL ROCK CREEK

Corridor Description:	Shell Rock Creek is located in Mendocino County. This segment is located between Dunlap Place and Twin Rocks, California, and is a tributary of the Eel River.		
Field Office:	Arcata	Map:	See Map A36 in Appendix A, Eligibility Report
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	1.4 miles	Area on BLM-Administered Land:	411 acres
Total Segment Length:	1.4 miles	Total Segment Area:	550 acres
ORV:	Fish, Geologic Scenic	Tentative Classification:	Scenic

3.32.1 Suitability Factors**Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System**

Within Shell Rock Creek, three ORVs have been identified as making this segment a worthy addition to the National System. Fish, geology, and scenic ORVs were identified as unique, rare, or exemplary on a comparative regional or national scale.

Shell Rock Creek is an important contributor to the recovery of federally-listed threatened winter-run steelhead in the Eel River. The geologic formation at Shell Rock is unique to the area. The landscape is rated as scenic quality “A.”

Factor 2: Current status of landownership and use in the area

The BLM manages 411 acres (74 percent) of the total 550-acre river corridor. The remaining 265 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORVs in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORVs. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORVs.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the Shell Rock Creek were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 74 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Shell Rock Creek although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated VSRs.

Preservation and administration of the state-listed and federally listed species of salmon within Shell Rock Creek would also be supported by participation from state and federal agencies, including the CDFW and USFWS, who are both mandated to conserve listed resources.

If the river were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that VSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Public Facility, allowing for public purpose (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control has jurisdiction in Mendocino County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were four comments received related to Shell Rock Creek. The comments were supportive of designation as a WSR and specifically the associated fish, geologic, and scenic ORVs (BLM 2022). There were no comments received opposed to designating Shell Rock Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Shell Rock Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of Shell Rock Creek as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Shell Rock Creek contains a minimal amount of BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Shell Rock Creek.

3.32.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Shell Rock Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Shell Rock Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.32.3 Suitability Determination

Shell Rock Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.33 SHOLES CREEK

Corridor Description:	Sholes Creek is located in Humboldt County. This segment is located to the east of the King Range Conservation Area.		
Field Office:	Arcata	Map:	See Map A2I in Appendix A, Eligibility Report
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	2.0 miles	Area on BLM-Administered Land:	523 acres
Total Segment Length:	2.0 miles	Total Segment Area:	806 acres
ORV:	Fish	Tentative Classification:	Scenic

3.33.1 Suitability Factors***Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System***

Within Sholes Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish values was identified as unique, rare, or exemplary at a comparative regional or national scale.

Sholes Creek is an important contributor to the recovery of federally-listed threatened coho salmon, Chinook salmon, and winter-run steelhead in the Mattole River. Coho salmon are also listed by the State of California as threatened under the CESA.

Factor 2: Current status of landownership and use in the area

The BLM manages 523 acres (64 percent) of the total 805-acre river corridor. The remaining 282 acres are private land. Land within the river corridor is zoned by Humboldt County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Chinook salmon, coho salmon, and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there are no applications for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights,

and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment would likely increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Sholes Creek were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 64 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Sholes Creek although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

Preservation and administration of the state-listed and federally listed species of salmon within Sholes Creek would also be supported by participation from state and federal agencies, including the CDFW and the USFWS, who are both mandated to conserve listed resources.

If the river were not added to the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Humboldt County. Zoning classifications from Humboldt County include Timberland Production Zone, allowing for timber and timber related activities (Humboldt County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were four comments received related to Sholes Creek during the public scoping period. The comments were supportive of designation as a WSR and specifically the associated fish ORV (BLM 2022). During the public comment period, there were seven comments received. The comments were supportive of designation and specifically the wild character and biological value. There were no comments received opposed to designating Sholes Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Sholes Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act,

administered by the North Coast Regional Board, enforces California water quality laws. Designation of Sholes Creek as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Sholes Creek contains a minimal amount of fragmented BLM-administered lands within its segment corridor and contains fragmented pieces at best. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Sholes Creek.

3.33.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Sholes Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Sholes Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.33.3 Suitability Determination

Sholes Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.34 TENMILE CREEK

Corridor Description:	Tenmile Creek is located in Mendocino County and flows along the southern border of the Elkhorn Ridge Wilderness.		
Field Office:	Arcata	Map:	See Map A8, Appendix A Eligibility Report
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	0.4 miles	Area on BLM-Administered Land:	111 acres
Total Segment Length:	0.4 miles	Total Segment Area:	259 acres
ORV:	Fish, Recreation	Tentative Classification:	Wild

3.34.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Tenmile Creek, two ORVs have been identified as making this segment a worthy addition to the National System. Fish and recreational ORVs were identified as unique, rare, or exemplary on a comparative regional or national scale.

Tenmile Creek is an important contributor to the recovery of federally listed threatened coho salmon, Chinook salmon, and winter-run steelhead. Coho salmon are also listed by the State of California as threatened under the CESA. Tenmile Creek provides outstanding whitewater rafting opportunities and serves as the gateway to the class IV–V run through the Elkhorn Ridge Wilderness.

Factor 2: Current status of landownership and use in the area

Within this segment, the BLM manages 111 acres (43 percent) of the total 259-acre river corridor. The remaining 148 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Coho salmon, chinook salmon, and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there is no application for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Currently, grazing is not found to be impacting the ORVs in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORVs. Timber harvesting or other vegetation management activities may be modified in the segment corridor to minimize impacts on the ORVs.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Tenmile Creek were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 42 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Tenmile Creek although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the CDFW and local county entities would ensure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Timber Production Zones and Forest Land, allowing for timber production and harvesting activities (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The North Coast

Regional Water Quality Control Board has jurisdiction in Mendocino County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There was one comment received related to Tenmile Creek during the public scoping period. The comment was supportive of designation as a WSR and specifically the associated fish and recreational ORVs (BLM 2022). During the public comment period, there were four comments received that were supportive of designation. There were no comments received opposed to designating Tenmile Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Tenmile Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of Tenmile Creek as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Tenmile Creek contains a minimal amount of fragmented BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Tenmile Creek.

3.34.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Tenmile Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Tenmile Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.34.3 Suitability Determination

Tenmile Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.35 TOM LONG CREEK COMPLEX (TOM LONG CREEK, TOM LONG CREEK TRIBUTARIES)

Complex Description:	Tom Long Creek is located in Humboldt County near the South Fork Eel River.		
Field Office:	Arcata	Map:	See Map A16 in Appendix A, Eligibility Report
Suitability Determination:	Not suitable for inclusion into the National System.		
<i>Tom Long Creek</i>			
BLM Segment Length:	0.3 miles	Total Segment Area:	214 acres
Total Segment Length:	0.3 miles	Area on BLM-Administered Land:	118 acres
ORV:	Ecology, Scenic, Fish	Tentative Classification:	Wild
<i>Tom Long Creek Tributaries</i>			
BLM Segment Length:	0.8 miles	Total Segment Area:	186 acres
Total Segment Length:	0.8 miles	Area on BLM-Administered Land:	421 acres
ORV:	Ecology, Scenic	Tentative Classification:	Wild

3.35.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the Tom Long Creek Complex, three ORVs have been identified as making this segment a worthy addition to the National System. Ecology, scenic, and fish ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

A rare old-growth forest community is in the Tom Long Creek Complex segment corridors. The rare old-growth forest provides unique scenery. These segments are important contributors to the recovery of federally-listed threatened winter-run steelhead in the South Fork Eel River.

Factor 2: Current status of landownership and use in the area

Within Tom Long Creek, the BLM manages 118 acres (55 percent) of the total 214-acre river corridor. The remaining 96 acres are private land. Within Tom Long Creek Tributaries, BLM manages 185 acres (44 percent) of the river corridor, which totals 420 acres. The remaining 235 acres are private land. Land within the river corridor is zoned by Humboldt County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there is no application for dams or diversions on file for these segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry.

Currently, grazing is not found to be impacting the ORVs in the segment corridors however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORVs. Timber harvesting or other vegetation management activities may be modified in the segment corridors to minimize impacts on the ORVs.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the Tom Long Creek Complex were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 55 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions

along the Tom Long Creek Complex although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If these segments were not added to the National System, federal, state, and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the segment corridors is zoned by Humboldt County. Zoning classifications from Humboldt County include Timber Production Zone, allowing for timber production activities (Humboldt County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). Region I North Coast Regional Water Quality Control Board has jurisdiction in Humboldt County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were no comments received related to Tom Long Creek or Tom Long Creek Tributaries.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the Tom Long Creek Complex as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Region I North Coast Regional Board, enforces California water quality laws. Designation of the Tom Long Creek Complex as a WSR would be consistent with the Region I North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

The segments within the Tom Long Creek Complex contain a minimal amount of fragmented BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for the Tom Long Creek Complex.

3.35.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For segments within the Tom Long Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Tom Long Creek	Eligible	Suitable	Not Suitable	Not Suitable
Tom Long Creek Tributaries	Eligible	Suitable	Not Suitable	Not Suitable

3.35.3 Suitability Determination

The segments within the Tom Long Creek Complex were found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.36 TOMKI CREEK

Corridor Description:	Tomki Creek is located in Mendocino County and contributes to the designated Eel River VWSR.		
Field Office:	Arcata	Map:	See Map A38 in Appendix A, Eligibility Report
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	2.6 miles	Area on BLM-Administered Land:	646 acres
Total Segment Length:	2.6 miles	Total Segment Area:	1,716 acres
ORV:	Fish	Tentative Classification:	Scenic

3.36.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Tomki Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish values was identified as unique, rare, or exemplary at a comparative regional or national scale.

Tomki Creek is an important contributor to the recovery of federally-listed threatened Chinook salmon and winter-run steelhead in the Eel River.

Factor 2: Current status of landownership and use in the area

Within the segment, the BLM manages 646 acres (38 percent) of the total 1,716-acre river corridor. The remaining 1,070 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Chinook salmon and winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there is no application for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights,

and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, grazing is not found to be impacting the ORV in the river corridor; however, livestock grazing could be curtailed if the segment were to be designated, and grazing began to impact the ORV. Timber harvesting or other vegetation management activities may be modified in the segment's corridor to minimize impacts on the ORV.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Tomki Creek were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 37 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Tomki Creek although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with the local county entities would ensure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

If the river were not added to the National System, federal, state, and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that WSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County Timber Production Zones and Forest Land, allowing for timber production and harvesting activities (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were two comments received related to Tomki Creek. The comments were supportive of designation as a WSR and specifically the associated fish ORV (BLM 2022). There were no comments received opposed to designating Tomki Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Tomki Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the North Coast Regional Board, enforces California water quality laws. Designation of Tomki Creek as a WSR would be consistent with the North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Tomki Creek contains a minimal amount of fragmented BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Tomki Creek.

3.36.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Tomki Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Tomki Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.36.3 Suitability Determination

Tomki Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.37 WHITE ROCK CREEK COMPLEX (WHITE ROCK CREEK, WHITE ROCK CREEK TRIBUTARY 1, WHITE ROCK CREEK TRIBUTARY 2, WHITE ROCK CREEK TRIBUTARY 3, AND WHITE ROCK CREEK TRIBUTARY 4)

Complex Description:	White Rock Creek is located in Mendocino County next to Board Tree Canyon.		
Field Office:	Arcata	Map:	Map A40 in Appendix A, Eligibility Report
Suitability Determination:	Not suitable for inclusion into the National System.		
<i>White Rock Creek</i>			
BLM Segment Length:	2.5 miles	Area on BLM-Administered Land:	722 acres
Total Segment Length:	2.5 miles	Total Segment Area:	1,046 acres
ORV:	Ecology, Scenic, Fish	Tentative Classification:	Scenic
<i>White Rock Creek Tributary I</i>			
BLM Segment Length:	0.3 miles	Area on BLM-Administered Land:	141 acres
Total Segment Length:	0.3 miles	Total Segment Area:	209 acres
ORV:	Scenic	Tentative Classification:	Scenic

White Rock Creek Tributary 2			
BLM Segment Length:	0.9 miles	Area on BLM-Administered Land:	362 acres
Total Segment Length:	0.9 miles	Total Segment Area:	450 acres
ORV:	Ecology, Scenic, Fish	Tentative Classification:	Wild
White Rock Creek Tributary 3			
BLM Segment Length:	1.9 miles	Area on BLM-Administered Land:	635 acres
Total Segment Length:	1.9 miles	Total Segment Area:	747 acres
ORV:	Ecology, Scenic, Fish	Tentative Classification:	Scenic
White Rock Creek Tributary 4			
BLM Segment Length:	0.4 miles	Area on BLM-Administered Land:	234 acres
Total Segment Length:	0.4 miles	Total Segment Area:	240 acres
ORV:	Ecology, Scenic, Fish	Tentative Classification:	Scenic

3.37.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within the White Rock Creek Complex, three ORVs have been identified as making this segment a worthy addition to the National System. Ecology, scenic and fish ORVs were identified as unique, rare, or exemplary at a comparative regional or national scale.

A rare old-growth forest community is in the White Rock Creek Complex corridor. The rare old-growth forest provides unique scenery. These segments are also important contributors to the recovery of federally-listed threatened winter-run steelhead in the Eel River.

Factor 2: Current status of landownership and use in the area

Within White Rock Creek, the BLM manages 722 acres (69 percent) of the total 1,046-acre river corridor. The remaining 324 acres are private land. Within White Rock Creek Tributary 1, BLM manages 141 acres (67 percent) of the river corridor, which totals 209 acres. The remaining 68 acres are private land. Within White Rock Creek Tributary 2, BLM manages 362 acres (80 percent) of the river corridor, which totals 450 acres. The remaining 88 acres are private land. Within White Rock Creek Tributary 3, BLM manages 635 acres (85 percent) of the river corridor, which totals 747 acres. The remaining 88 acres are private land. Within White Rock Creek Tributary 4, the BLM manages 234 acres (97 percent) of the river corridor, which totals 240 acres. The remaining 6 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the segments existing conditions and protect the identified ORVs. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there is no application for dams or diversions on file for these river segments.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. For segments with a wild classification that are ultimately designated, management actions would close the area to mineral leasing, close to mineral material development, and recommend the area for withdrawal from mineral entry. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment's corridor to minimize those impacts.

Designation of these segments is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORVs and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If the segments within the White Rock Creek Complex were added to the National System, the BLM would manage the segments.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 69 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions within the White Rock Creek Complex although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated VSRs.

If these segments were not added to the National System, federal, state, and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs within the river corridors under existing laws, authorities, and ordinances. It is not anticipated that VSR designation would substantially increase management costs in this segment.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the complex corridors is zoned by Mendocino County. Zoning classifications from Mendocino County include Timber Production Zones and Forest Land, allowing for timber production and harvesting activities (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were two comments received related to the segments within the White Rock Creek Complex. The comments were supportive of designation as WSRs and specifically the associated fish ORV as meeting eligibility criteria (BLM 2022). There were no comments received opposed to designating the segments within the White Rock Creek Complex as WSRs.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of the White Rock Creek Complex as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Region I North Coast Regional Board, enforces California water quality laws. Designation of White Rock Creek as a WSR would be consistent with the Region I North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

The segments within the White Rock Creek Complex contain a minimal amount of fragmented BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for the White Rock Creek Complex.

3.37.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For the segments within the White Rock Creek Complex, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
White Rock Creek	Eligible	Suitable	Not Suitable	Not Suitable
White Rock Creek Tributary 1	Eligible	Suitable	Not Suitable	Not Suitable
White Rock Creek Tributary 2	Eligible	Suitable	Not Suitable	Not Suitable
White Rock Creek Tributary 3	Eligible	Suitable	Not Suitable	Not Suitable
White Rock Creek Tributary 4	Eligible	Suitable	Not Suitable	Not Suitable

3.37.3 Suitability Determination

The segments within the White Rock Creek Complex were found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs.

The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

3.38 WOODMAN CREEK

Corridor Description:	Woodman Creek is located in Mendocino County near Card Place, California.		
Field Office:	Arcata	Map:	Map A41 in Appendix A, Eligibility Report
Suitability Determination:	Not suitable for inclusion into the National System.		
BLM Segment Length:	0.5 miles	Area on BLM-Administered Land:	180 acres
Total Segment Length:	0.5 miles	Total Segment Area:	415 acres
ORV:	Fish	Tentative Classification:	Scenic

3.38.1 Suitability Factors

Factor 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within Woodman Creek, one ORV has been identified as making this segment a worthy addition to the National System. An ORV for fish values was identified as unique, rare, or exemplary at a comparative regional or national scale.

Woodman Creek is an important contributor to the recovery of federally listed threatened winter-run steelhead in the Eel River.

Factor 2: Current status of landownership and use in the area

Within Woodman Creek, the BLM manages 180 acres (43 percent) of the total 415-acre river corridor. The remaining 235 acres are private land. Land within the river corridor is zoned by Mendocino County, as discussed in Factor 8.

Factor 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified ORV. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Winter-run steelhead would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

Designation could prohibit development of hydroelectric power facilities. Currently there is no application for dams or diversions on file for this river segment.

Management actions in the RMP identify limits on mineral leasing, mineral materials development and recommendations for withdrawals from locatable mineral entry for river and stream segments determined suitable; however, those limits depend on the tentative classification of the segment. Segments with a scenic classification that are ultimately designated would be closed to mineral leasing, closed to mineral material development, and existing or new mining activity would be allowed, subject to valid existing rights, and conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

Currently, timber harvesting and other vegetation management activities have not been found to be impacting ORVs; however, if they were to be found impacting ORVs, they may be modified in the segment's corridor to minimize those impacts.

Designation of this segment is likely to increase focused efforts and collaborations on river restoration projects to protect and enhance the ORV and water quality.

Factor 4: The federal agency that will administer the area should it be added to the National System

If Woodman Creek were added to the National System, the BLM would manage this river.

Factor 5: The extent to which the agency proposes that administration of the river, including the costs thereof, be shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Factor 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM would pursue land acquisition only from willing sellers within the river corridor. Over 43 percent of the river corridor is on BLM-administered land. At this time, there are no plans for further acquisitions along Woodman Creek although land acquisition criteria in the NCIP may allow for future acquisitions.

Factor 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Coordinating with local county entities would assure compliance with state and county regulations for access, use, and management of any future designated river. In addition, cooperative efforts would continue with these agencies as participants in the development of river management plans for designated WSRs.

Factor 8: An evaluation of local zoning and other land use controls in protecting the river's ORVs and preventing incompatible development

Land within the river corridor is zoned by Mendocino County. Zoning classifications from Mendocino County include Timber Production Zones and Forest Land, allowing for timber production and harvesting activities (Mendocino County 2023). These types of zoning codes would largely support the maintenance of ORVs in the corridor.

Factor 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW also coordinates with other state and federal entities through the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and the USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally-listed fish species and to ensure compliance with the ESA and the CESA (CDFW 2023).

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the CWA (California Water Board 2023). The Region I North Coast Regional Water Quality Control Board has jurisdiction in Mendocino County. The Regional Water Board is responsible for enforcing the Porter-Cologne Water Quality Control Act, the regional Basin Plan, and permits that have been issued on projects. The Porter-Cologne Water Quality Control Act and the regional Basin Plan prohibit the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate The Porter-Cologne Water Quality Control Act, the regional Basin Plan, or a permit (California Water Board 2023).

Factor 10: The existing support for or opposition to designation

The public was provided opportunities to offer input for eligibility and will be able to review and provide comment on this suitability report for WSRs. Comments on the eligibility report were wide-ranging and included river-system, stream-specific, and ORV information.

There were two comments received related to Woodman Creek. The comments were supportive of designation as a WSR and specifically the associated fish ORV (BLM 2022). There were no comments received opposed to designating Woodman Creek as a WSR.

Factor 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Woodman Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, The Porter-Cologne Water Quality Control Act, administered by the Region I North Coast Regional Board, enforces California water quality laws. Designation of Woodman Creek as a WSR would be consistent with the Region I North Coast Regional Board's mission of protecting water quality.

Factor 12: The contribution to the river system or basin integrity

Woodman Creek contains a minimal amount of fragmented BLM-administered lands within its segment corridor. The contribution to the larger river system is low and there are no opportunities for adjacent designations, meaning low ecological connectivity opportunities.

Factor 13: The potential for water resources development

The potential for water resource developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line, was determined by a review of proposed FERC projects. There are no FERC projects proposed for Woodman Creek.

3.38.2 Land Use Plan Alternatives

Chapter 2 of this RMP outlines the management actions for WSRs. For Woodman Creek, the suitability determinations across alternatives are as follows:

Segment Name	Alternative A	Alternative B	Alternative C	Alternative D
Woodman Creek	Eligible	Suitable	Not Suitable	Not Suitable

3.38.3 Suitability Determination

Woodman Creek was found **not suitable for inclusion** in the National System based on the information within this report. Designation would provide protection and enhancement of the identified ORVs; however, the percentage of BLM-managed lands within the corridor is minimal, fragmented, and would not provide adequate access or opportunity for management of ORVs. The surrounding land uses and management direction is not consistent with management of ORV and when looking at the larger river system, this segment does not provide a critical link to the systems approach. Additionally, there are federal and state laws that currently apply protections to portions of the segment. These protections will ensure ORVs and free-flow are protected into the future without WSR designation.

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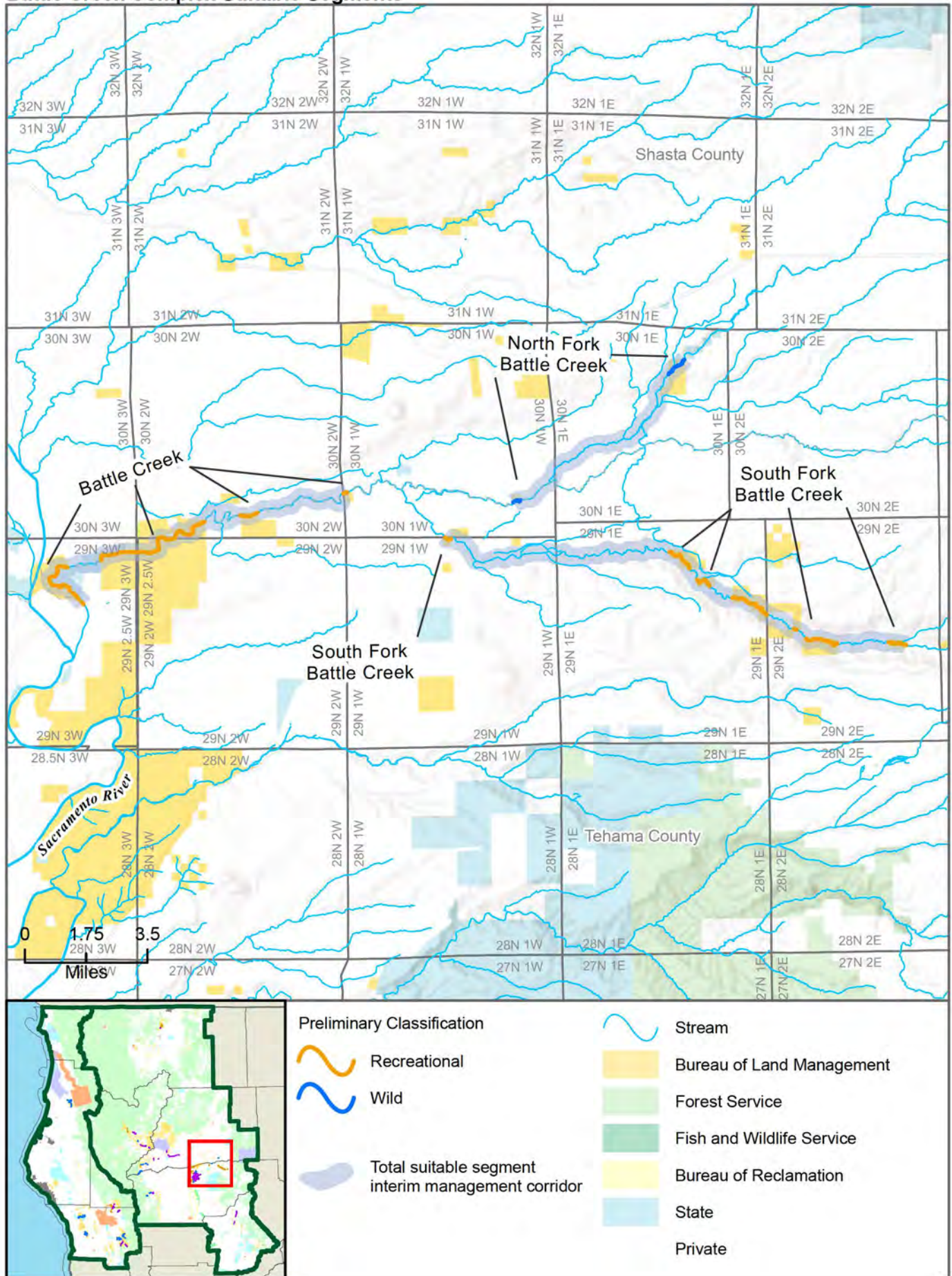
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Appendix A

Maps

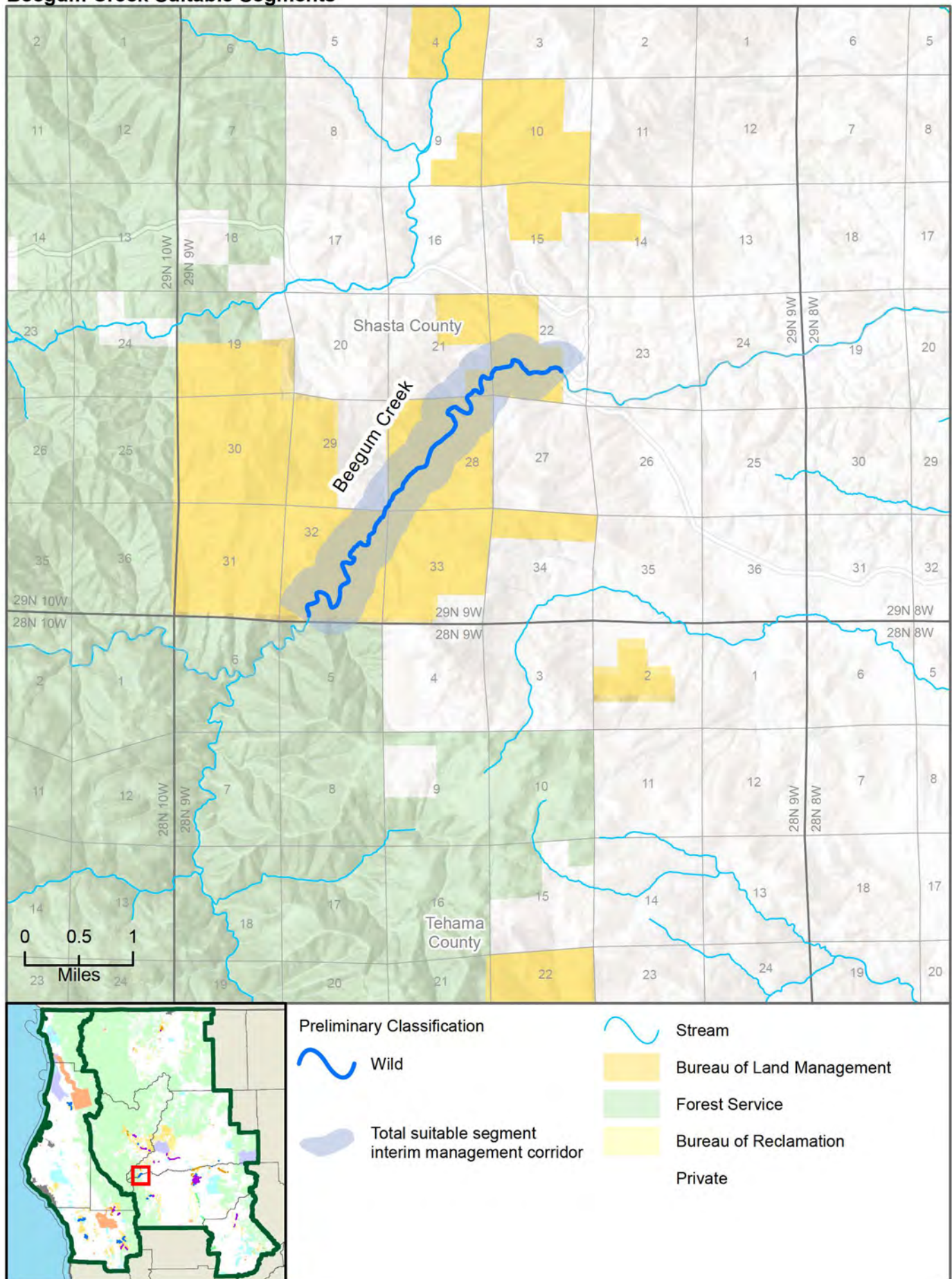
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**Map A-1:
Battle Creek Complex Suitable Segments**



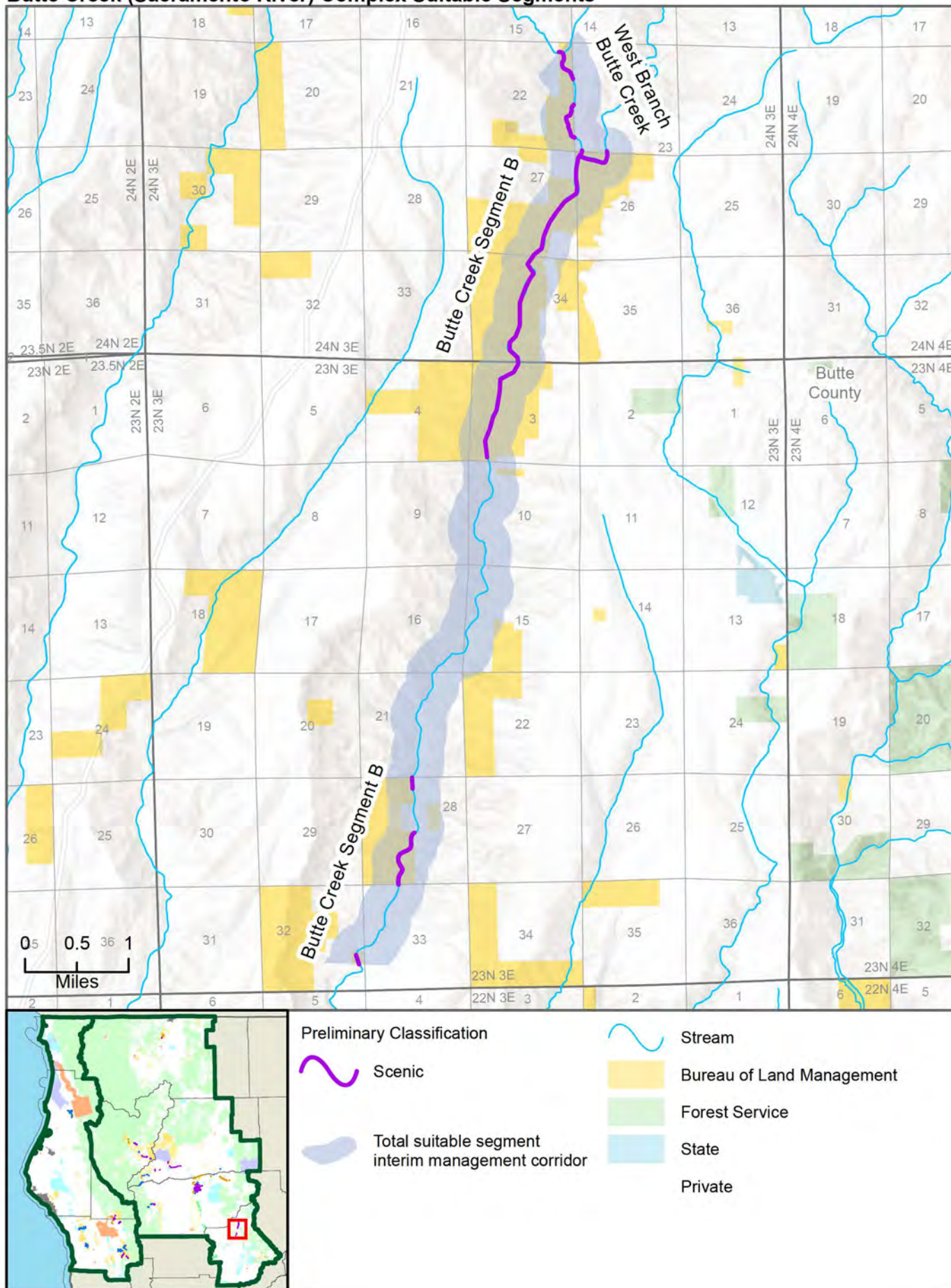
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**Map A-2:
Beegum Creek Suitable Segments**



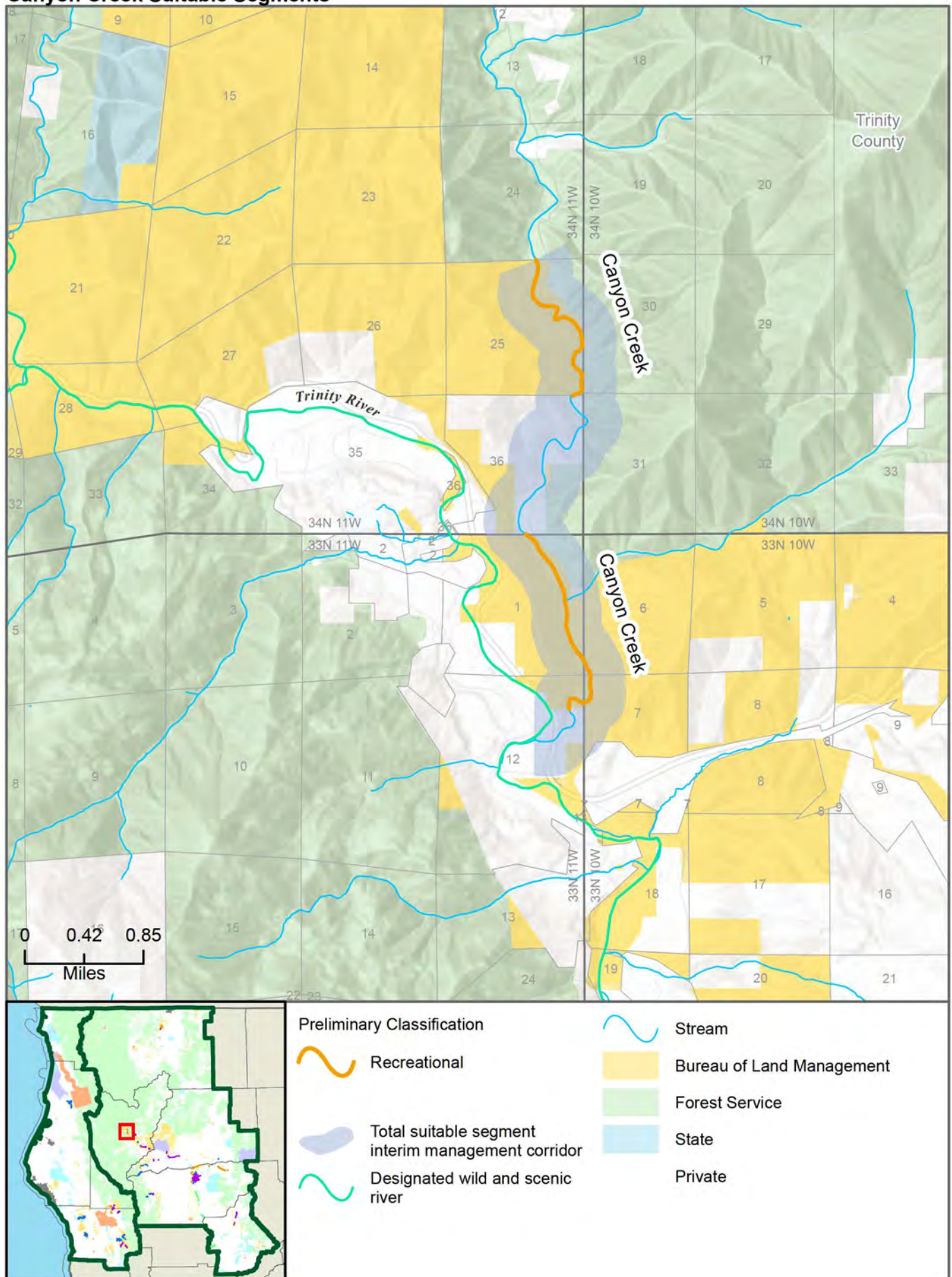
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Map A-3:
Butte Creek (Sacramento River) Complex Suitable Segments



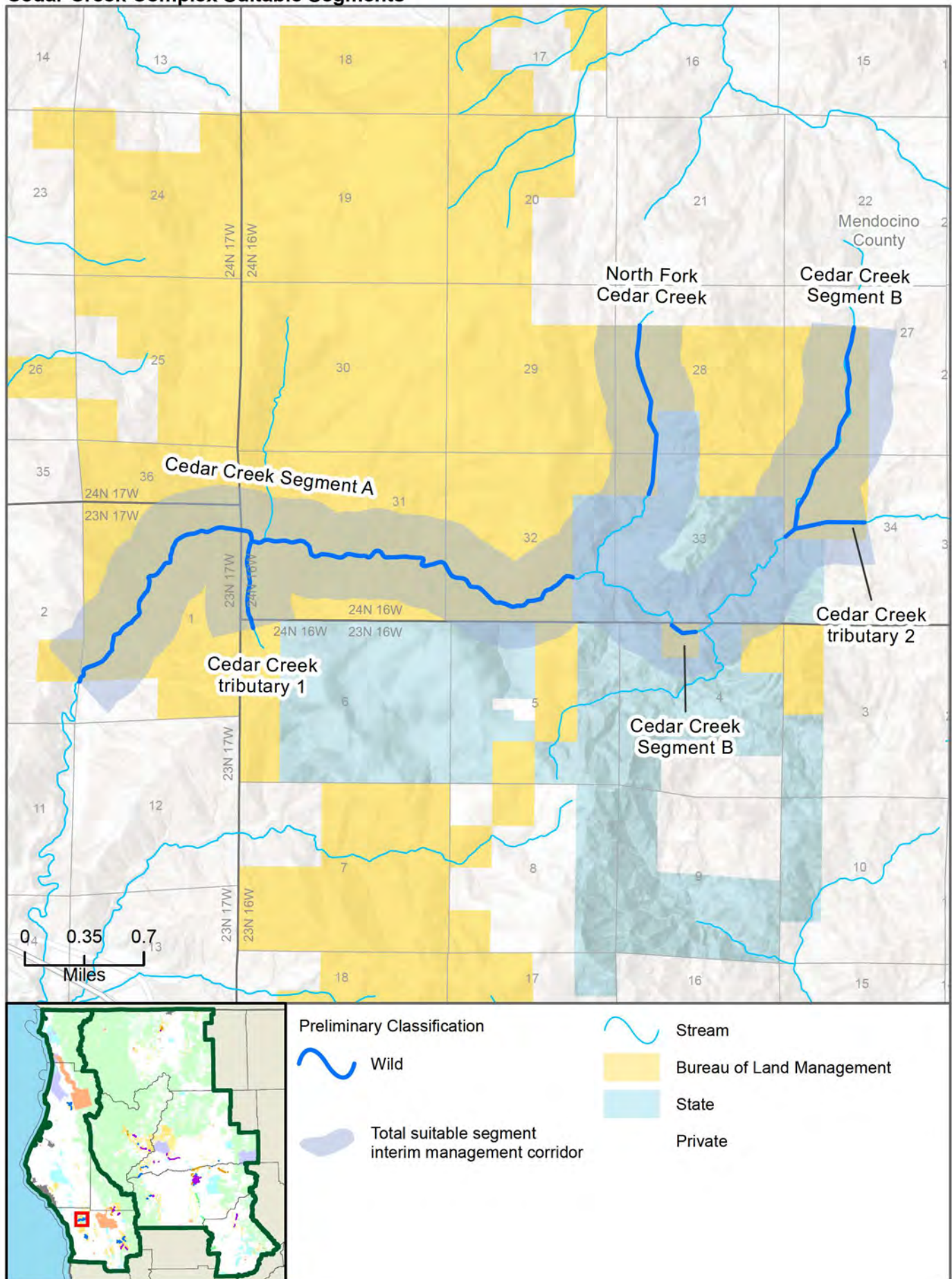
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**Map A-4:
Canyon Creek Suitable Segments**



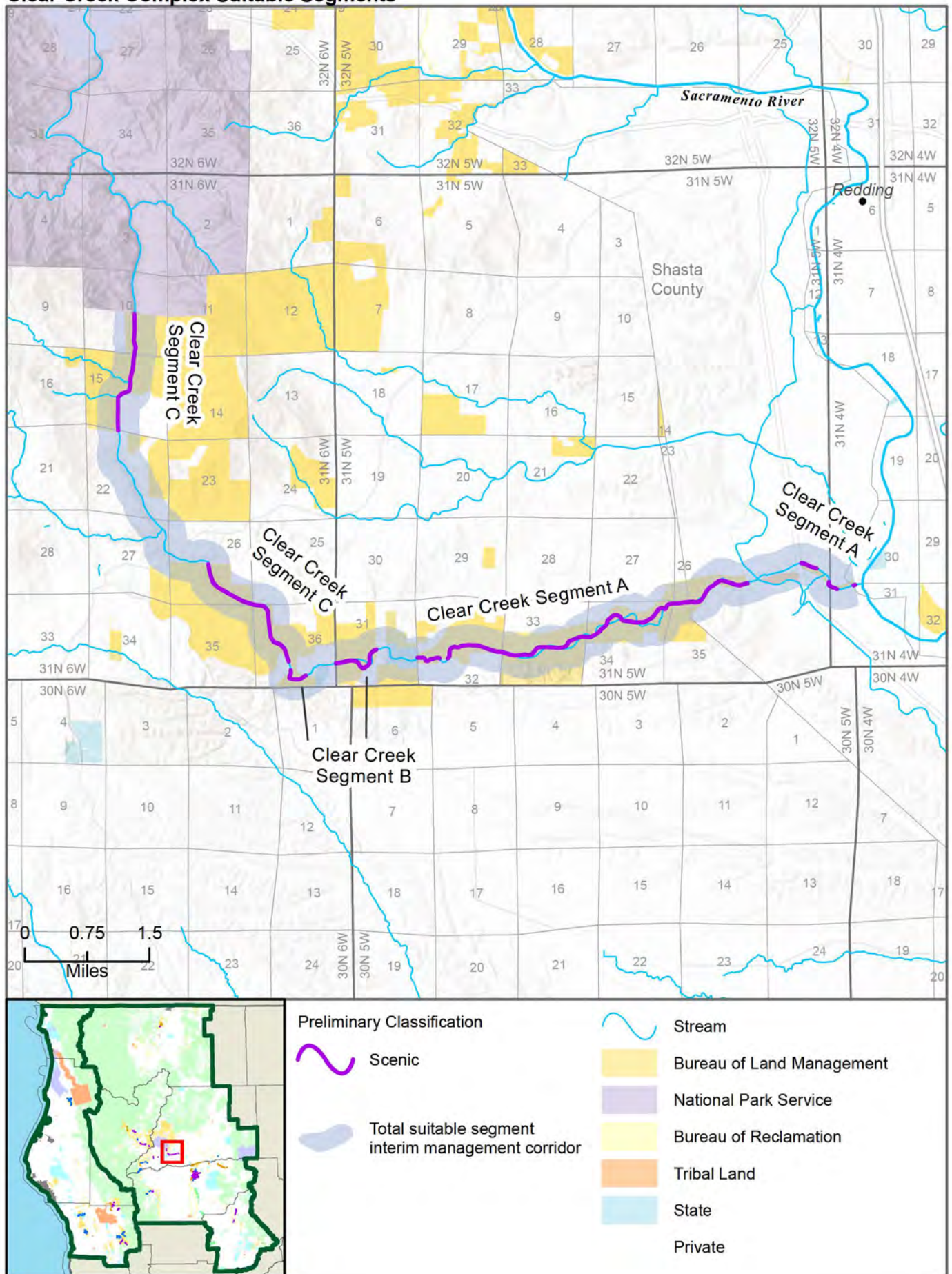
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Map A-5:
Cedar Creek Complex Suitable Segments



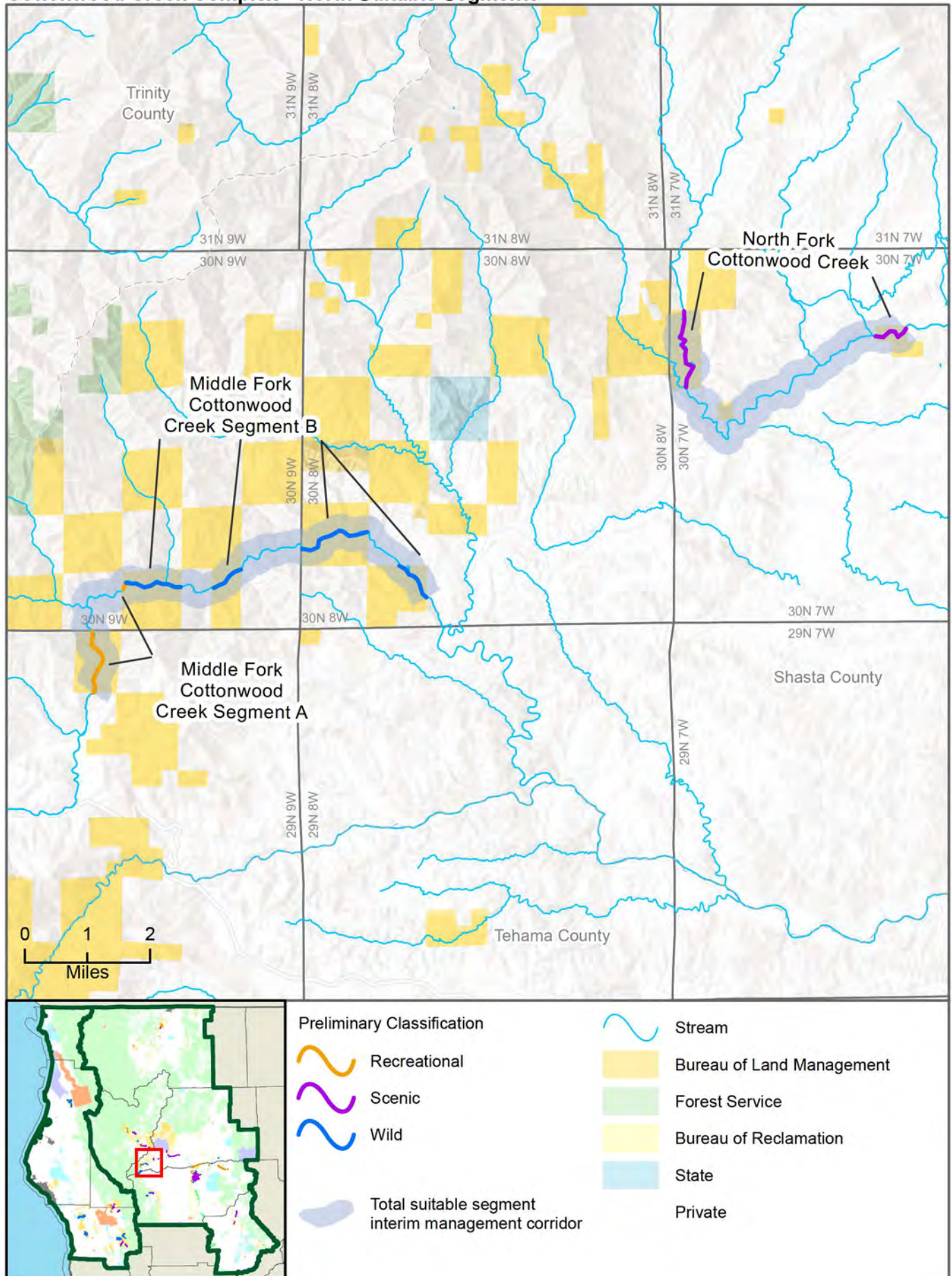
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**Map A-6:
Clear Creek Complex Suitable Segments**



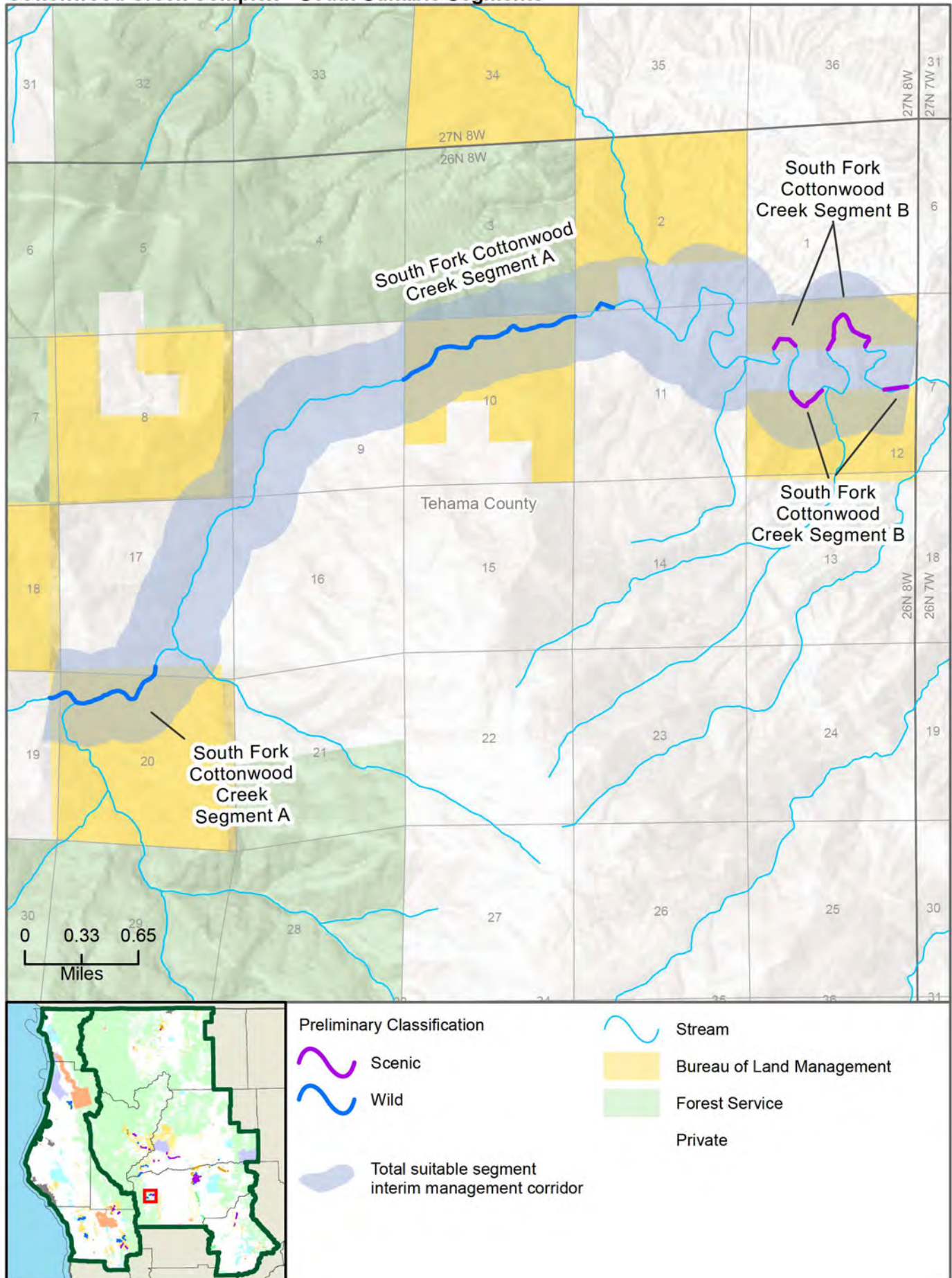
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Map A-7A:
Cottonwood Creek Complex—North Suitable Segments



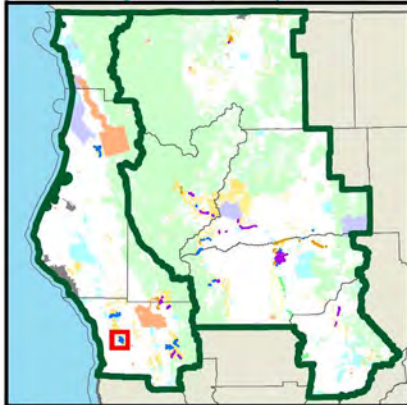
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**Map A-7B:
Cottonwood Creek Complex—South Suitable Segments**





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This map illustrates the Eel River watershed in Mendocino County, California. The main river, the Eel River, is depicted in blue, flowing from the north towards the south. Its tributaries, including Elder Creek and Paralyze Canyon, are shown in green. The South Fork Eel River is also shown in green, flowing from the west towards the main river. The watershed is divided into 35 numbered sections. The map includes a scale bar (0 to 0.6 miles) and a north arrow. The watershed is located within Mendocino County, and the map shows the county boundary and the location of the watershed within the state of California.



Wild

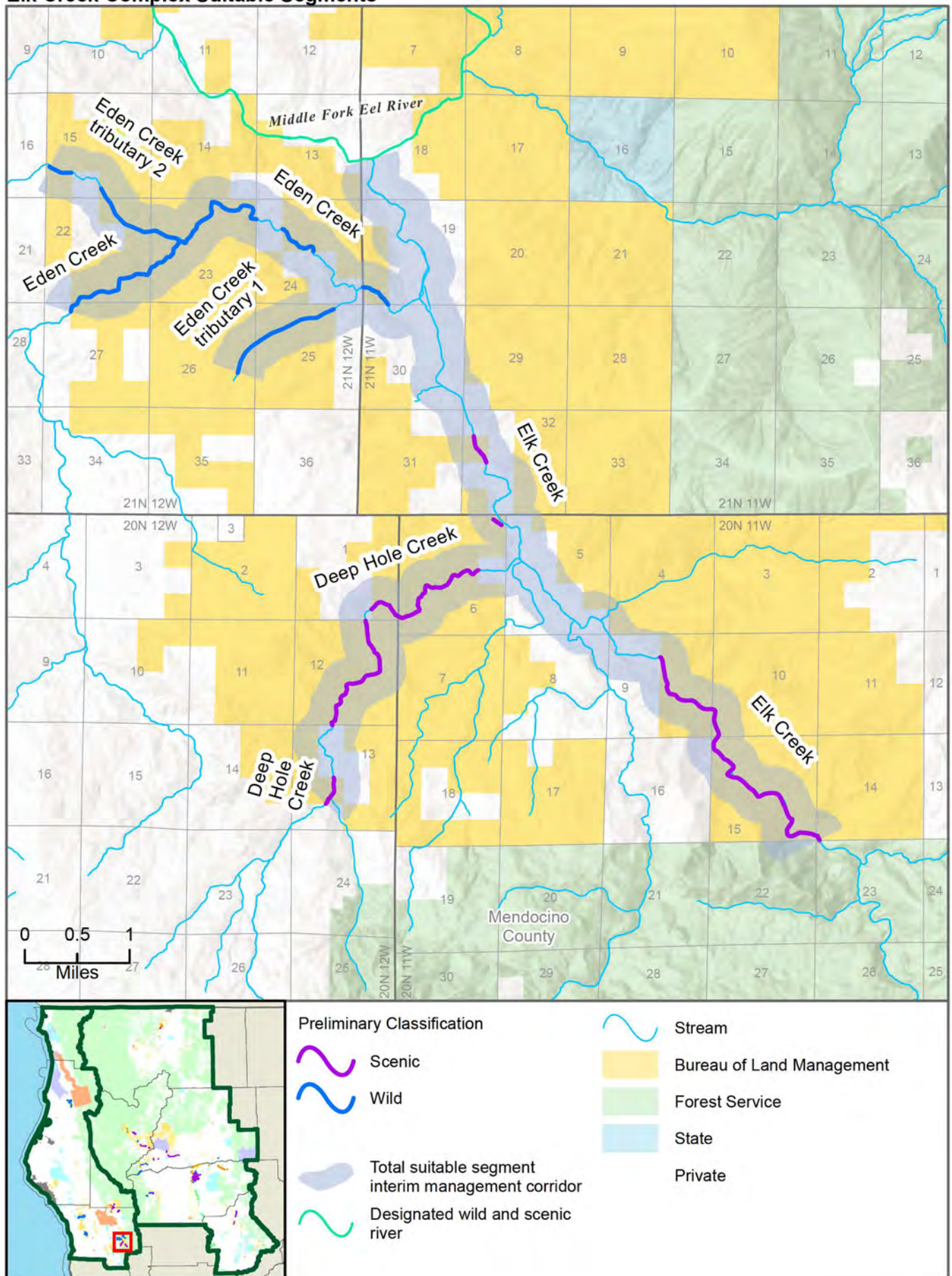
 Total suitable segment interim management corridor

 Designated wild and scenic river Stream

Bureau of Land Management
Private

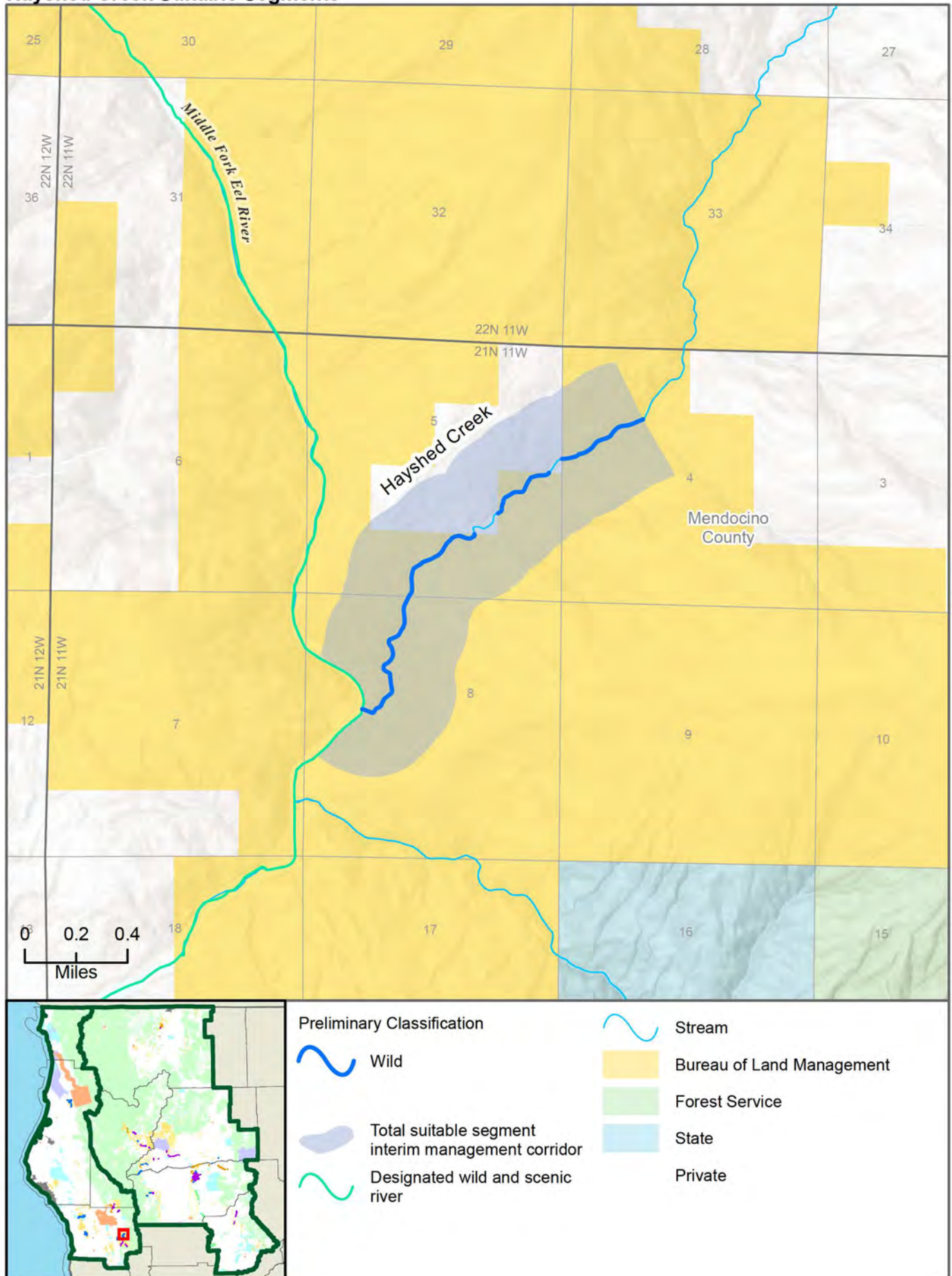
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**Map A-9:
Elk Creek Complex Suitable Segments**



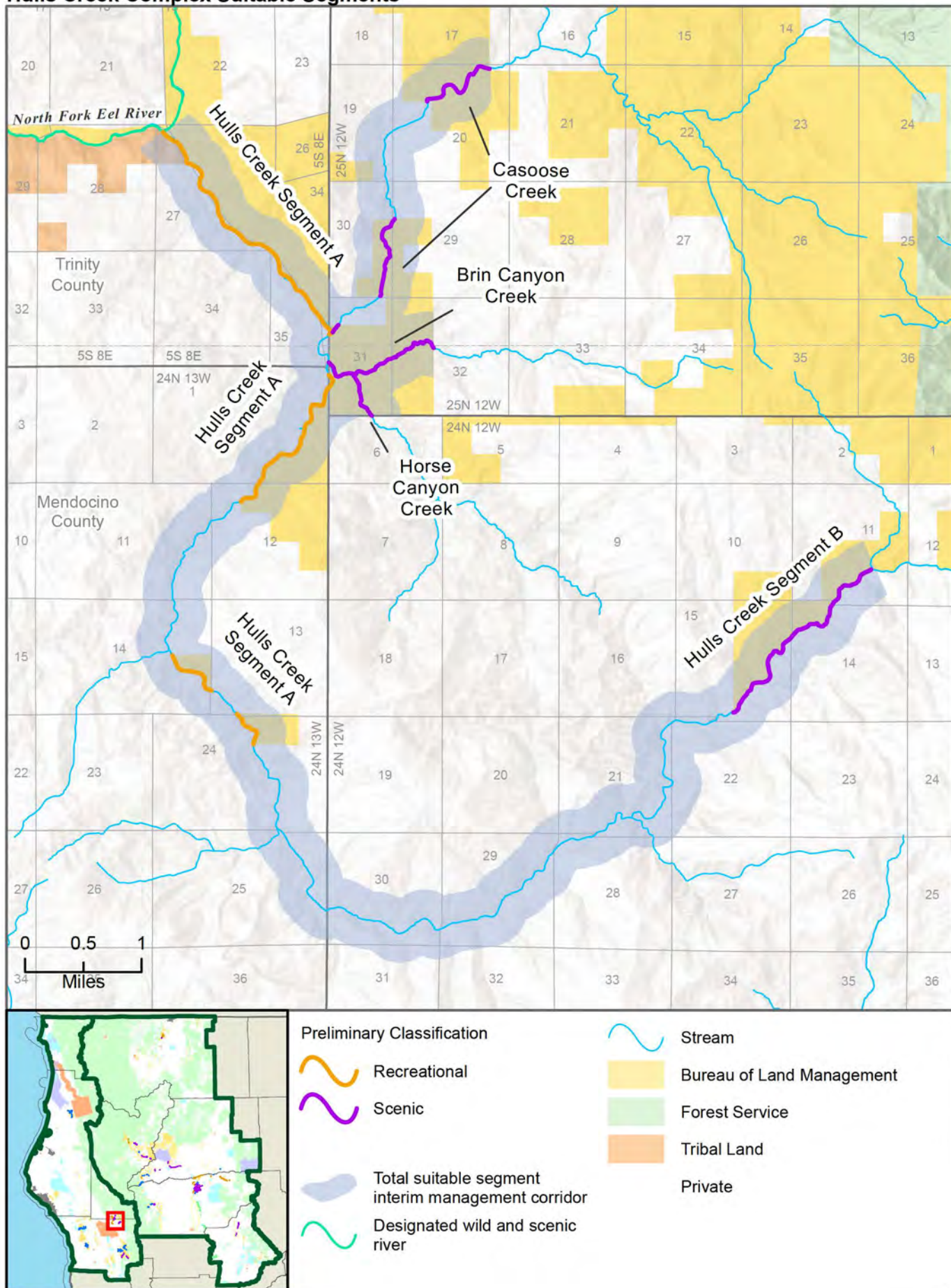
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**Map A-10:
Hayshed Creek Suitable Segments**



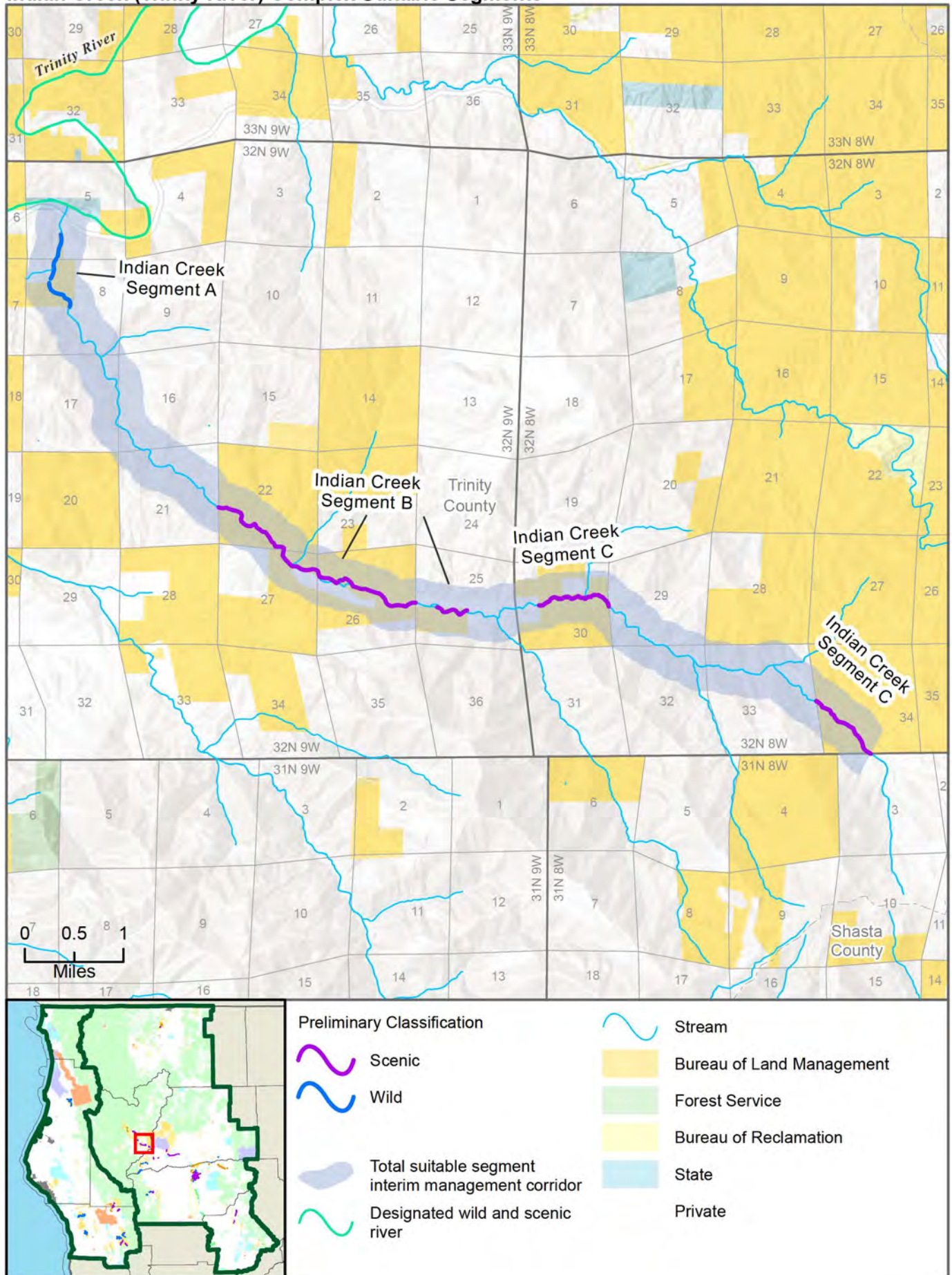
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**Map A-11:
Hulls Creek Complex Suitable Segments**



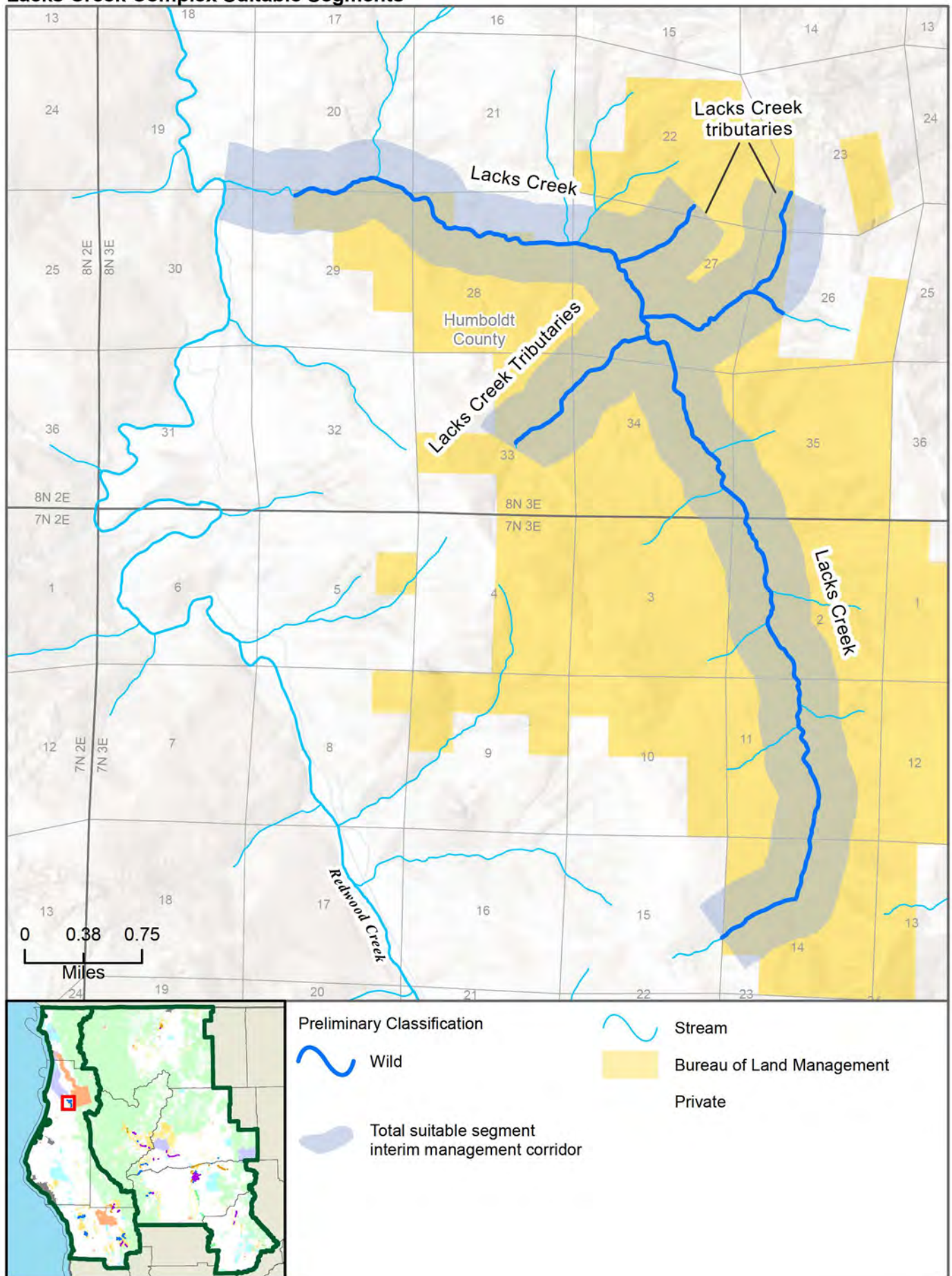
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**Map A-12:
Indian Creek (Trinity River) Complex Suitable Segments**



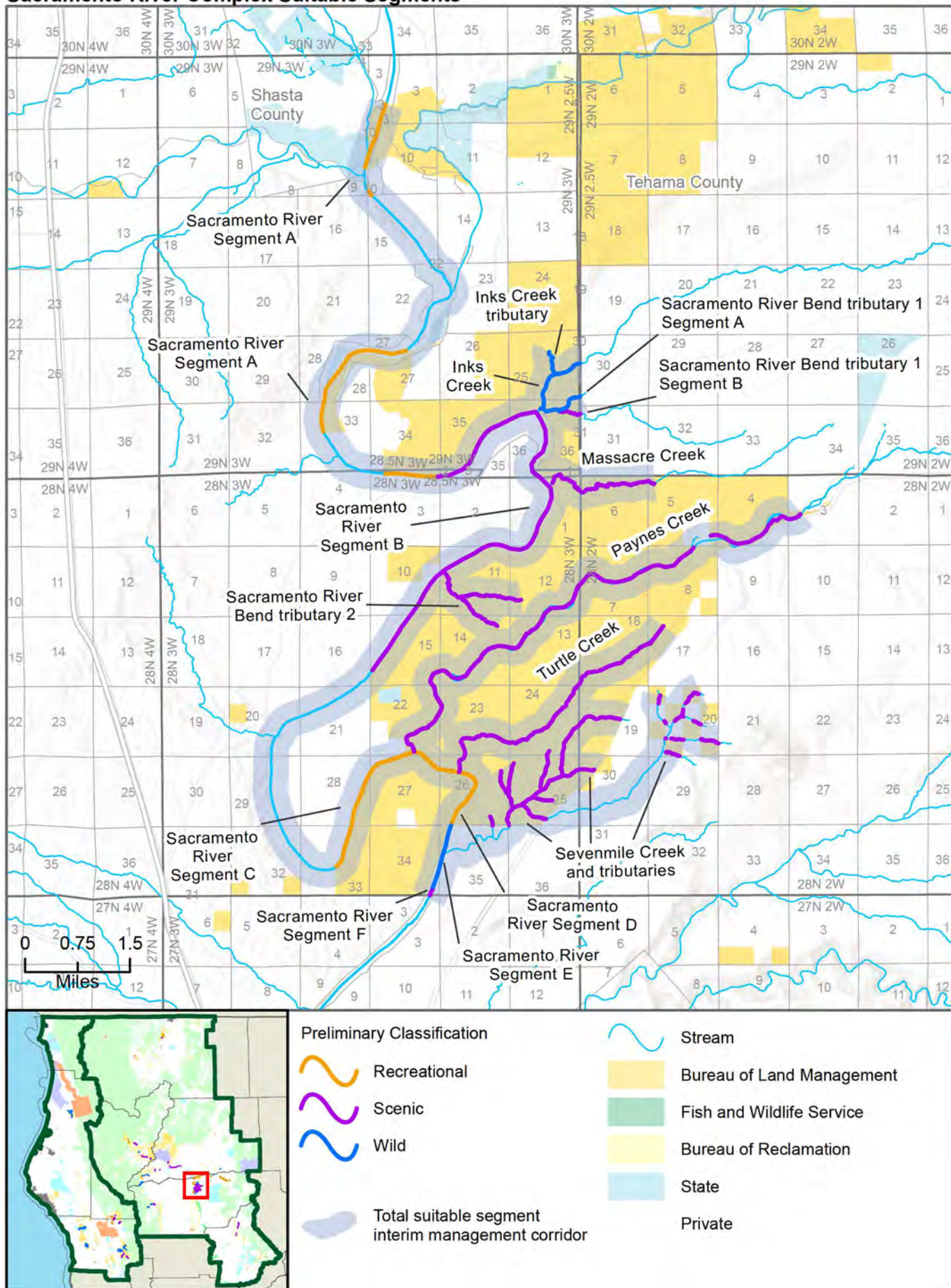
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**Map A-13:
Lacks Creek Complex Suitable Segments**



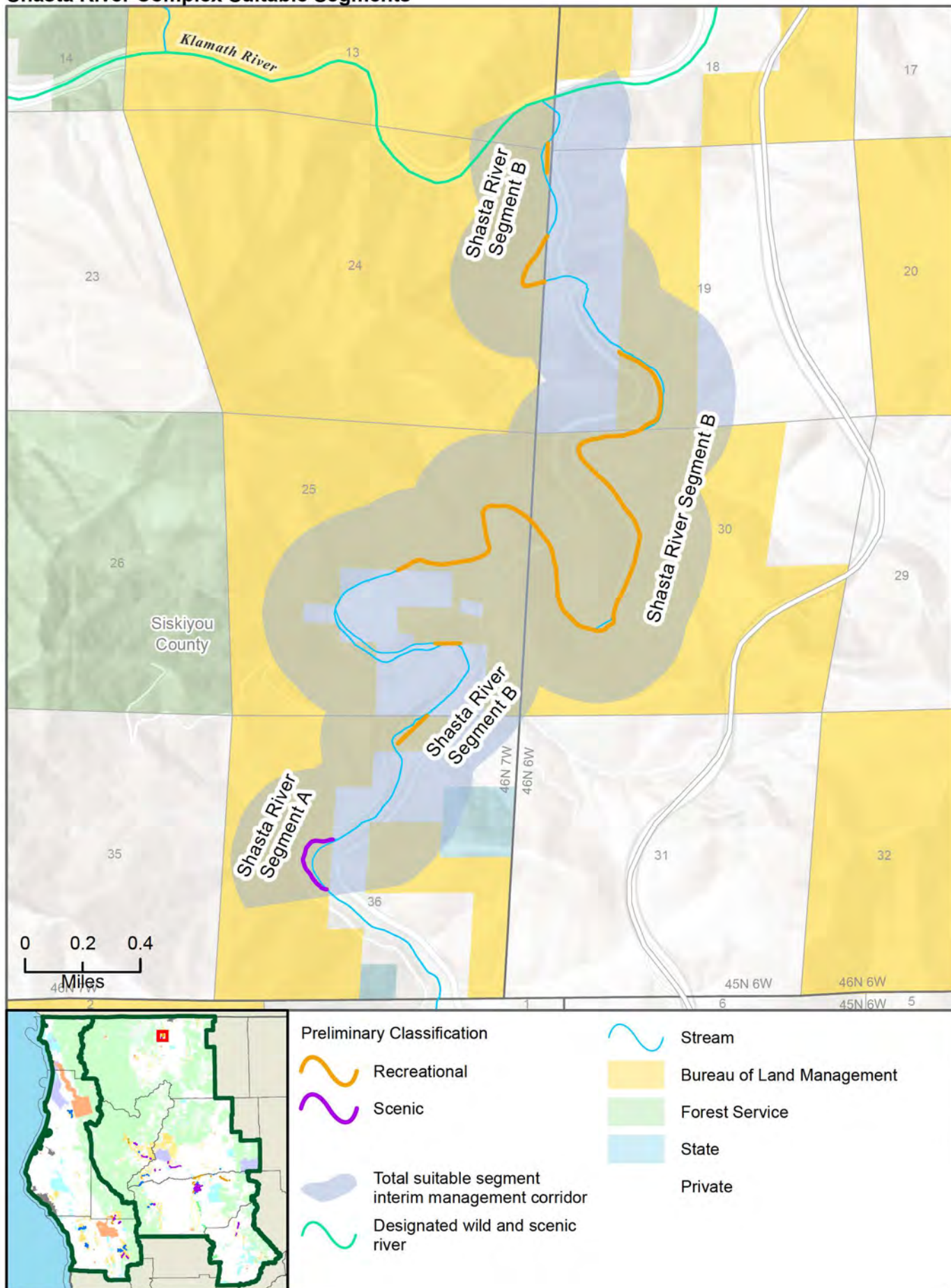
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**Map A-14:
Sacramento River Complex Suitable Segments**



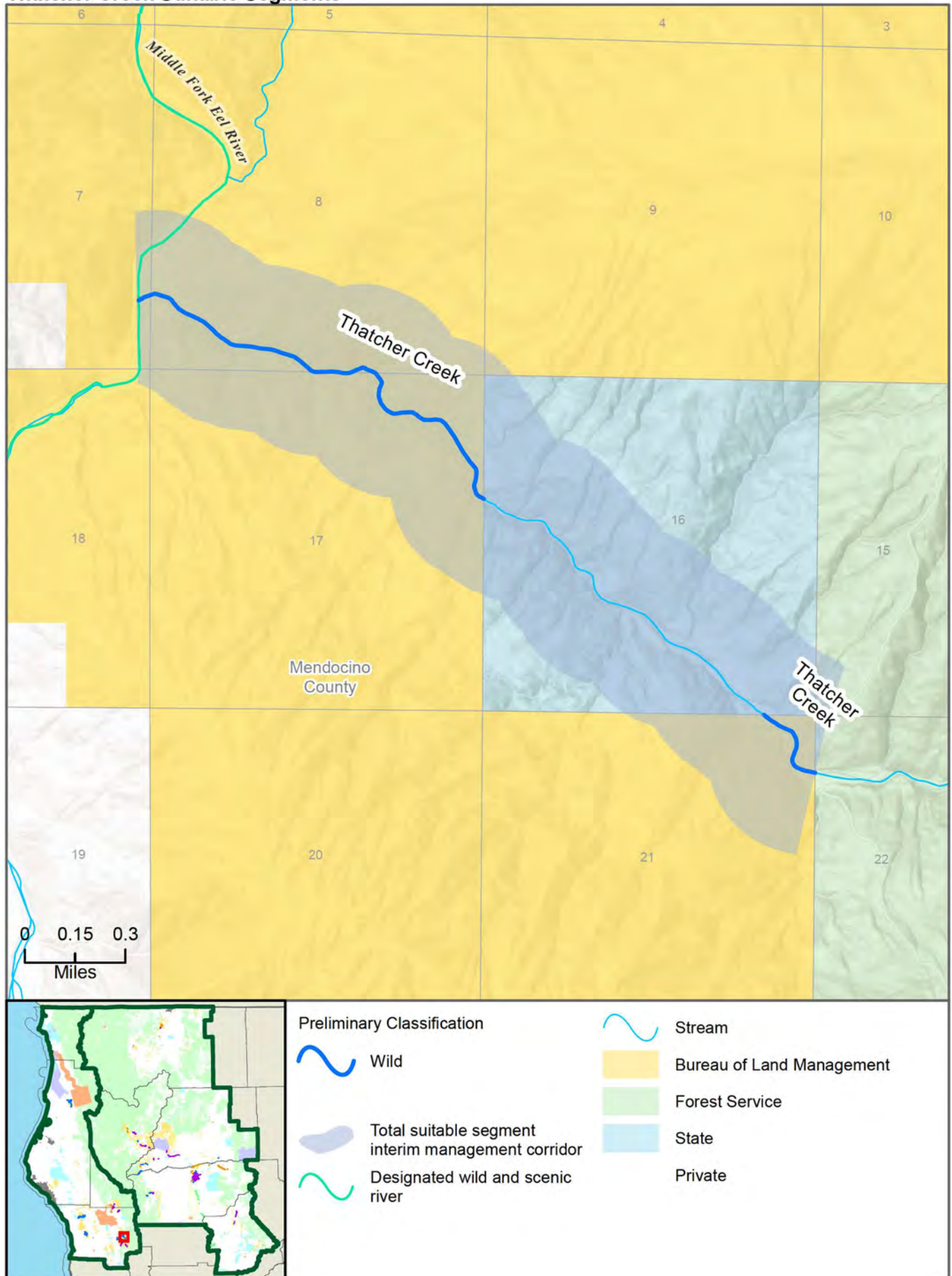
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Map A-15:
Shasta River Complex Suitable Segments



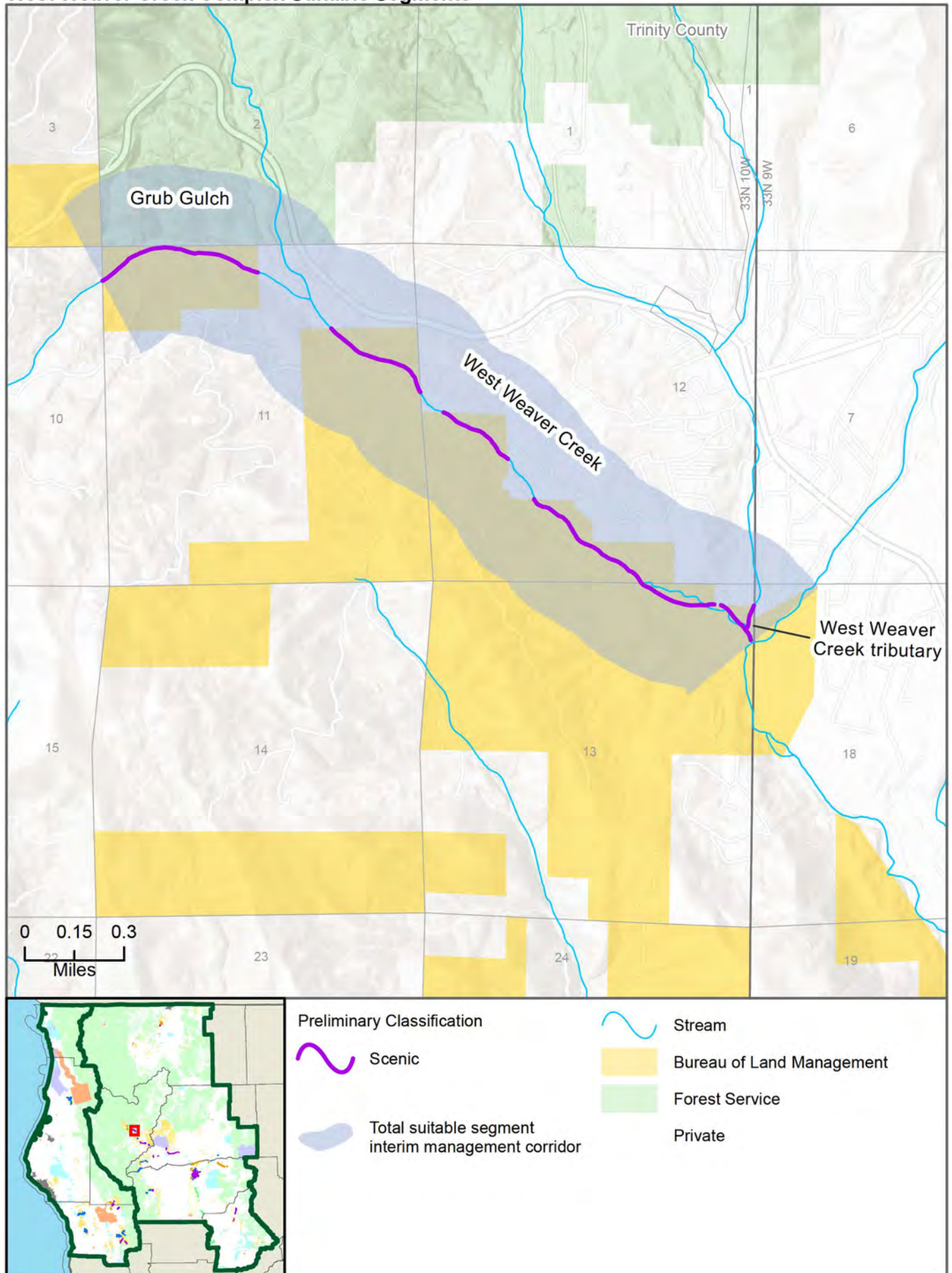
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**Map A-16:
Thatcher Creek Suitable Segments**



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

**Map A-17:
West Weaver Creek Complex Suitable Segments**



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

Appendix J

Land Tenure and Disposal

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Appendix J. Land Tenure and Disposal

This appendix identifies lands proposed for disposal from BLM ownership. Inclusion on this list signifies the BLM's preliminary evaluation that these lands meet the criteria for disposal established by the Federal Land Policy and Management Act (FLPMA) Sec. 203 [43 U.S.C. 1713]. These criteria are:

1. **Difficult and Uneconomical Management:** Lands that, due to location or characteristics, are too costly or impractical for the BLM to manage effectively, and are not a suitable fit for another federal agency.
2. **No Longer Needed for Original Purpose:** Lands acquired for a specific purpose that is no longer relevant to any federal agency's needs.
3. **Serving Important Public Objectives:** Lands whose disposal would significantly benefit the public, such as by supporting community growth or economic development, in ways that cannot be achieved on non-public lands. These benefits must outweigh the value of retaining the land for public recreation, scenic beauty, or other purposes.

In addition to the FLPMA criteria, the BLM has assessed all parcels and has provided additional preliminary justification for all units proposed for disposal. It is important to note that this list has been compiled after a planning level review. Each proposed disposal will undergo a rigorous site-specific analysis consistent with statutory and regulatory requirements. This analysis may lead to adjustments or the removal of a parcel from further consideration as a disposal.

Table J-1 presents parcels identified for disposal within the NCIP planning area and the applicable criteria they meet which justify disposal under Section 203(a).

An overview map (**Map J-1**, Land Tenure) shows the lands identified for disposal within the planning area. On the map, the planning area is divided into 15 grid maps that display the NCIP disposal parcels within. **Map J-1, Extents 1-15** provide a closer view of parcels identified for disposal. **Table J-1** indicates which map extent the parcel is shown on.

Table J-1. Parcels Identified for Disposal Within the NCIP Planning Area

NCIP Parcel ID	Map	FLPMA Criteria 1	FLPMA Criteria 2	FLPMA Criteria 3	Justification(s)
All Parcels	Map J-1, Land Tenure (Overview Map)	-	-	-	-
BUT068	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
BUT070	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
BUT072	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
BUT073	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
BUT099	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; no public and/or administrative access
BUT212	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; disposal could resolve trespass related issues
BUT219	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
BUT220	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
BUT221	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
BUT224	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
BUT237	Map J-1, Extent 11	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
BUT238	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
BUT239	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
BUT241	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
BUT246	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands;

NCIP Parcel ID	Map	FLPMA Criteria 1	FLPMA Criteria 2	FLPMA Criteria 3	Justification(s)
BUT248	Map J-1, Extent 15	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
HUM108	Map J-1, Extent 3	Yes; disposal could support other public objectives	No	No	difficult or uneconomic to manage; disposal could resolve trespass related issues
HUM129	Map J-1, Extent 9	Yes; no public and/or administrative access	No	No	disposal could support other public objectives
HUM133	Map J-1, Extent 3	Yes; no public and/or administrative access	No	No	disposal could support other public objectives
HUM134	Map J-1, Extent 3	Yes; no public and/or administrative access	No	No	disposal could resolve trespass related issues
HUM140	Map J-1, Extent 9	Yes; disposal could support other public objectives	No	No	no public and/or administrative access
HUM151	Map J-1, Extent 3	Yes; disposal could support other public objectives	No	No	no public and/or administrative access
HUM186	Map J-1, Extent 3	Yes; no public and/or administrative access	No	No	disposal could support other public objectives
HUM188	Map J-1, Extent 3	Yes; disposal could support other public objectives	No	No	no public and/or administrative access
MEN103	Map J-1, Extent 12	Yes; disposal could support other public objectives	No	No	difficult or uneconomic to manage; disposal could resolve trespass related issues
MEN104	Map J-1, Extent 12	Yes; disposal could resolve trespass related issues	No	No	no public and/or administrative access
MEN109	Map J-1, Extent 12	Yes; no public and/or administrative access	No	No	disposal could support other public objectives
MEN179	Map J-1, Extent 13	Yes; no public and/or administrative access	No	No	no public and/or administrative access
SHA002	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA006	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA008	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; disposal could support other public objectives

NCIP Parcel ID	Map	FLPMA Criteria 1	FLPMA Criteria 2	FLPMA Criteria 3	Justification(s)
SHA013	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; no public and/or administrative access; surrounded by private lands
SHA039	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	Yes	difficult or uneconomic to manage; disposal could support other public objectives; surrounded by private lands
SHA044	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SHA046	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SHA091	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA092	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA094	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA095	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SHA111	Map J-1, Extent 8	Yes; no public and/or administrative access	No	No; disposal could resolve trespass related issues	difficult or uneconomic to manage; disposal could resolve trespass related issues
SHA112	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA114	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA118	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands;
SHA338	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage;
SHA377	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA392	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SHA409	Map J-1, Extent 5	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands

NCIP Parcel ID	Map	FLPMA Criteria 1	FLPMA Criteria 2	FLPMA Criteria 3	Justification(s)
SHA411	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SHA412	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SHA415	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SHA417	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA418	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SHA419	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	Yes	difficult or uneconomic to manage; disposal could support other public objectives
SHA420	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA422	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	Yes	difficult or uneconomic to manage; surrounded by private lands
SHA423	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA426	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SHA427	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA430	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	Yes	difficult or uneconomic to manage; surrounded by private lands
SHA431	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	Yes	difficult or uneconomic to manage
SHA433	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No; surrounded by private lands	difficult or uneconomic to manage
SHA434	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No; surrounded by private lands	difficult or uneconomic to manage
SHA435	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No; surrounded by private lands	difficult or uneconomic to manage; surrounded by private lands
SHA436	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No; surrounded by private lands	difficult or uneconomic to manage; surrounded by private lands

NCIP Parcel ID	Map	FLPMA Criteria 1	FLPMA Criteria 2	FLPMA Criteria 3	Justification(s)
SHA437	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No; surrounded by private lands	difficult or uneconomic to manage; surrounded by private lands
SHA438	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No; surrounded by private lands	difficult or uneconomic to manage; surrounded by private lands
SHA439	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No; surrounded by private lands	difficult or uneconomic to manage; surrounded by private lands
SHA441	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SHA442	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SHA443	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SHA444	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SHA445	Map J-1, Extent 8	Yes; difficult or uneconomic to manage	No	No; surrounded by private lands	difficult or uneconomic to manage
SHA447	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	Yes	no public and/or administrative access
SIS011a	Map J-1, Extent 4	Yes; difficult or uneconomic to manage	No	Yes	difficult or uneconomic to manage; disposal could support other public objectives
SIS063	Map J-1, Extent 2	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SIS071	Map J-1, Extent 1	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SIS104	Map J-1, Extent 2	Yes; difficult or uneconomic to manage	No	No; disposal could resolve trespass related issues	difficult or uneconomic to manage
SIS139	Map J-1, Extent 2	Yes; difficult or uneconomic to manage	No	Yes	difficult or uneconomic to manage; disposal could support other public objectives; disposal could resolve trespass related issues
SIS155	Map J-1, Extent 2	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SIS222	Map J-1, Extent 2	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage

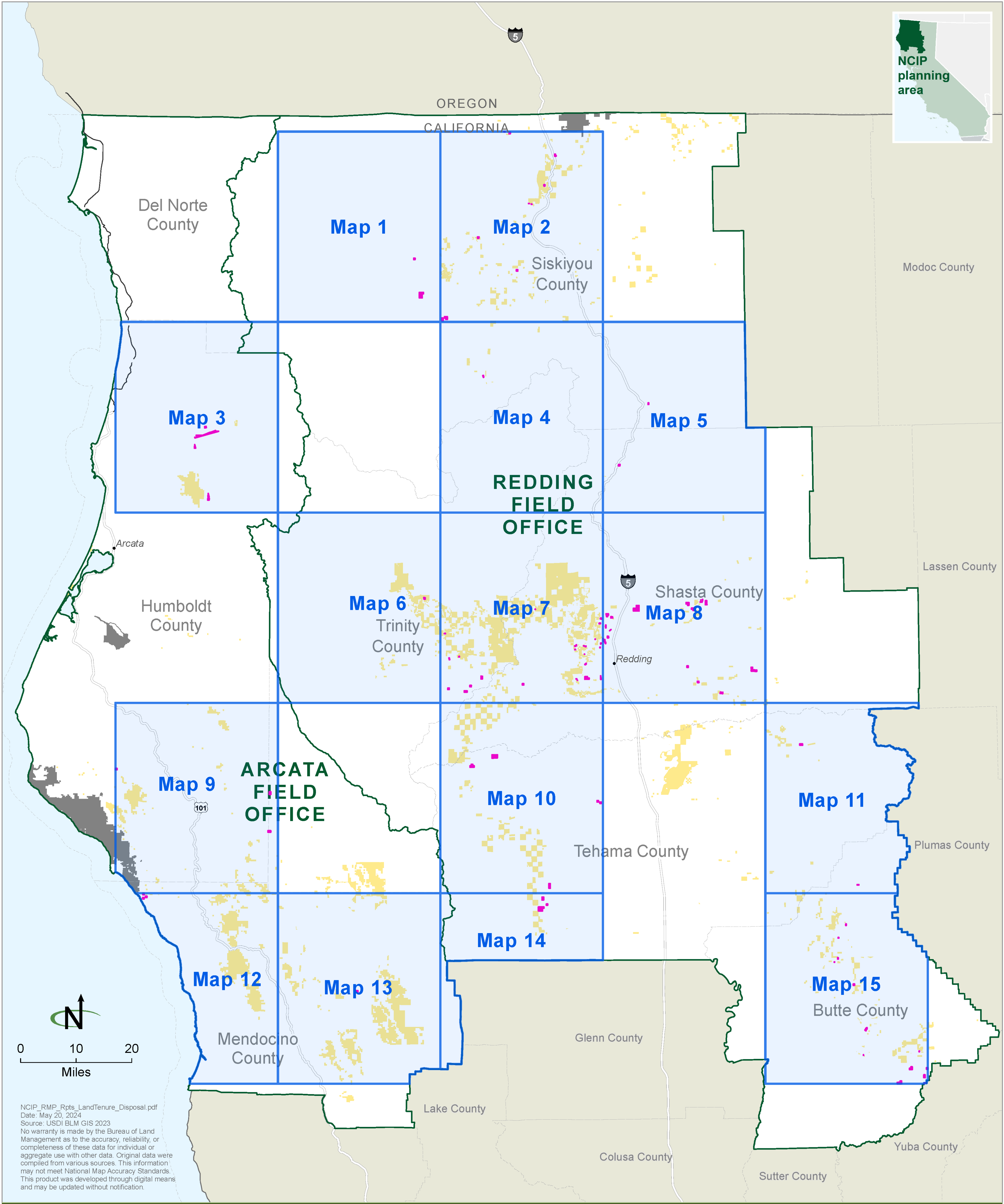
NCIP Parcel ID	Map	FLPMA Criteria 1	FLPMA Criteria 2	FLPMA Criteria 3	Justification(s)
SIS225	Map J-1, Extent 2	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SIS228	Map J-1, Extent 2	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SIS229	Map J-1, Extent 1	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
SIS235	Map J-1, Extent 5	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SIS236	Map J-1, Extent 2	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
SIS237	Map J-1, Extent 2	Yes; difficult or uneconomic to manage	No	No; disposal could resolve trespass related issues	difficult or uneconomic to manage; surrounded by private lands
TEH003	Map J-1, Extent 10	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
TEH029	Map J-1, Extent 10	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
TEH031	Map J-1, Extent 10	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands; surrounded by private lands
TEH081	Map J-1, Extent 10	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
TEH083	Map J-1, Extent 14	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
TEH084	Map J-1, Extent 14	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
TEH085	Map J-1, Extent 14	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
TEH204	Map J-1, Extent 11	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; no public and/or administrative access
TEH238	Map J-1, Extent 10	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage
TRI007	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
TRI008	Map J-1, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands

NCIP Parcel ID	Map	FLPMA Criteria 1	FLPMA Criteria 2	FLPMA Criteria 3	Justification(s)
TRI009	Map J-I, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
TRI013	Map J-I, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands
TRI032	Map J-I, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; surrounded by private lands; no public and/or administrative access
TRI226	Map J-I, Extent 7	Yes; difficult or uneconomic to manage	No	No	difficult or uneconomic to manage; disposal could resolve trespass related issues
TRI253	Map J-I, Extent 6	Yes; difficult or uneconomic to manage	No	No; disposal could resolve trespass related issues	difficult or uneconomic to manage; disposal could resolve trespass related issues
TRI302	Map J-I, Extent 9	Yes; no public and/or administrative access	No	No	no public and/or administrative access
TRI303	Map J-I, Extent 9	Yes; no public and/or administrative access	No	No	no public and/or administrative access; ;
TRI325	Map J-I, Extent 7	Yes; no public and/or administrative access	No; disposal could support other public objectives	Yes	no public and/or administrative access

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Map J-1 Land Tenure

- Lands identified for disposal
- Map extent
- Bureau of Land Management
- NCIP planning area
- BLM-administered land not included in the NCIP decision area



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