South County Habitat Restoration Program

Santa Cruz County, CA



Initial Study with proposed Mitigated Negative Declaration

Prepared for

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County of Santa Cruz

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CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)
INITIAL STUDY/ENVIRONMENTAL CHECKLIST

Date: January 5, 2026

Application Number: 261034

Project Name: South County Habitat Restoration Program

Contact: Mark Connolly, Environmental Coordinator

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: Resource Conservation District

APN(s): Please see Project Location.

OWNER: N/A

SUPERVISORIAL DISTRICT: 4

PROJECT LOCATION: The Program is located in the southern portion of Santa Cruz County. Santa Cruz County is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay and the Pacific Ocean. The Program Area incorporates Day Valley, Pleasant Valley, and portions of Corralitos to the north and northeast. From Amesti Road in the east, the Program Area boundary cuts through agricultural fields to the junction of Freedom Blvd and Buena Vista Drive, the southeast corner of the Program Area to extend to the intersection of Manfre Road with State Route 1, the southern corner of the Program Area. State Route 1 forms the southwestern boundary of the Program Area, capturing the Larkin Valley-Aptos Hill communities east of the highway (Figure 1).

SUMMARY PROJECT DESCRIPTION:

The Resource Conservation District of Santa Cruz County (RCD) proposes the implementation of the South County Habitat Restoration Program (the Program). The comprehensive program includes the large-scale removal of eucalyptus within the 11,585 acre Program Area in South Santa Cruz County (South County) to reduce the risk of catastrophic wildfire and property damage and the restoration of native habitat to aid the recovery of the Santa Cruz long-toed salamander (SCLTS) and other endemic wildlife.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: *All of the following potential environmental impacts are evaluated in this Initial Study. Categories that are marked have been analyzed in greater detail based on project specific information.*

- ☐ Aesthetics and Visual Resources
- ☐ Agriculture and Forestry Resources
- ☐ Air Quality
- ☒ Biological Resources
- ☐ Cultural Resources
- ☐ Energy
- ☐ Geology and Soils
- ☐ Greenhouse Gas Emissions
- ☐ Hazards and Hazardous Materials
- ☐ Hydrology/Water Supply/Water Quality
- ☐ Mineral Resources
- ☒ Noise
- ☐ Population and Housing
- ☐ Public Services
- ☐ Recreation
- ☐ Transportation
- ☐ Tribal Cultural Resources
- ☐ Utilities and Service Systems
- ☐ Wildfire
- ☒ Mandatory Findings of Significance

DISCRETIONARY APPROVAL(S) BEING CONSIDERED:

- ☐ General Plan Amendment
- ☐ Land Division
- ☐ Rezoning
- ☐ Development Permit
- ☐ Sewer Connection Permit
- ☐ Coastal Development Permit
- ☐ Grading Permit
- ☒ Riparian Exception
- ☐ LAFCO Annexation
- ☐ Other:

OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED (e.g., permits, financing approval, or participation agreement):

Permit Type/Action	Agency
• Habitat Restoration and Enhancement Act Approval • Master Lake and Streambed Alteration Agreement	CDFW
• Nationwide Permit 13,27, or 33 • Multi-Agency Implementation of Aquatic, Riparian, Floodplain and Wetland Restoration Projects to Benefit Fish and	USACE

Wildlife in California (PBA) (FWS Reference: 2022-0005149-S7)	
• Incidental Take Permit • Programmatic Biological Opinions for Special-status Species and Geographic Regions (i.e ., California Red-legged Frog, 08EVEN00-2020-F-0226 and 08EVEN00-2020-I-0292)	
• Multi-Agency Implementation of Aquatic, Riparian, Floodplain and Wetland Restoration Projects to Benefit Fish and Wildlife in California (PBA) (FWS Reference: 2022-0005149-S7)	USFWS
• Programmatic Biological Opinion • NOAA Restoration Center Programmatic Biological Opinion (WCR-2015-3755) • Incidental Take Permit	NOAA
• Federal Clean Water Act Section 401 Water Quality Certification or Waste Discharge Requirement • Clean Water Act Section 401 Water Quality Certification for Small Habitat Restoration Projects • Order for Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for Restoration Projects Statewide	RWQCB

CONSULTATION WITH NATIVE AMERICAN TRIBES: *Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?*

No California Native American tribes traditionally and culturally affiliated with the area of Santa Cruz County have requested consultation pursuant to Public Resources Code section 21080.3.1.

DETERMINATION:

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

DocuSigned by:
Mark Connolly
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Environmental Coordinator

1/28/2026

Date

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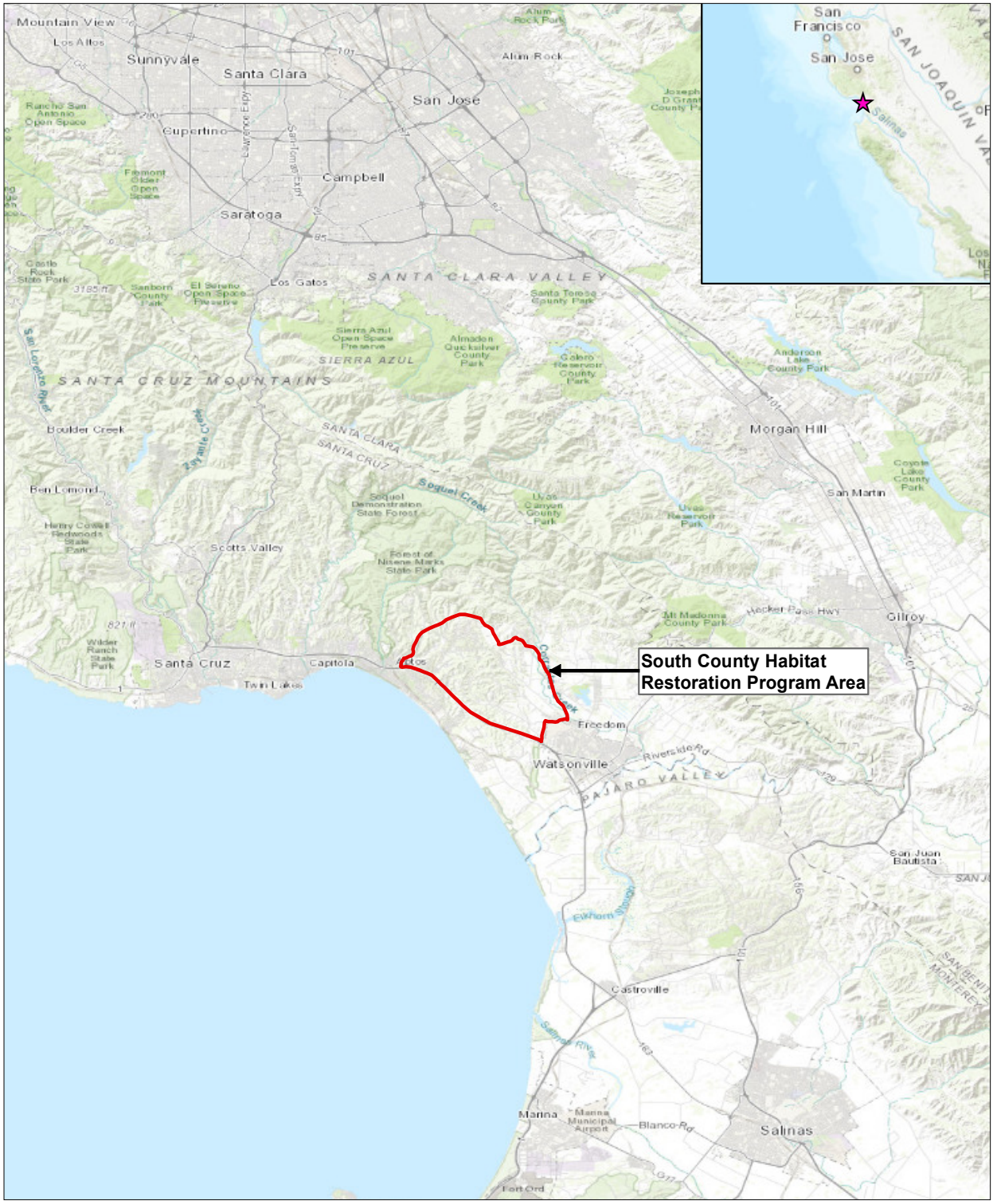


Figure 1 Project Location

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II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS:

Parcel Size (acres):	11,585 acres
Existing Land Use:	R-R, R-UVL, AG, C-C, C-N, C-O, O-R, P, O-C, O-l, O-U
Vegetation:	Eucalyptus, Redwood Forest, native/non-native grassland, coast live oak, mixed evergreen forest, coastal shrub, chaparral, riparian
Slope in area affected by project:	0 - 30% 31 – 100% N/A
Nearby Watercourse:	Corralitos Creek, Valencia Creek
Distance To:	N/A

ENVIRONMENTAL RESOURCES AND CONSTRAINTS:

Water Supply Watershed:	Santa Cruz Mid-County Basin, Pajaro Valley Basin	Fault Zone:	Zayante-Vergeles Fault
Groundwater Recharge:	Yes	Scenic Corridor:	Highway 1, Amesti Road, Corralitos Road, Buena Vista Drive
Timber or Mineral:	Present/MRZ-2	Historic:	Possible
Agricultural Resource:	Prime farmland, unique farmland, Williamson act farmland, county designated agricultural resources	Archaeology:	Possible
Biologically Sensitive Habitat:	Oak Woodland, Oak Savannah, Native Grassland,	Noise Constraint:	N/A

	Coastal Scrub, Chaparral, Riparian, Pond/Marsh, Creek, Wetland/Seep		
Fire Hazard:	H to VH	Electric Power Lines:	N/A
Floodplain:	A, AE, X	Solar Access:	N/A
Erosion:	Yes	Solar Orientation:	N/A
Landslide:	Yes	Hazardous Materials:	None
Liquefaction:	Yes	Other:	None

SERVICES:

Fire Protection:	Central Fire District, CSA 48, Pajaro Valley FPD	Drainage District:	Zone 6
School District:	Pajaro Valley Unified	Project Access:	N/A
Sewage Disposal:	N/A	Water Supply:	Pajaro Valley Water Management Agency

PLANNING POLICIES:

Zone District:	A, C-1, C-2, C-4, PA, PF, PR, RA, RR, TP	Special Designation:	None
General Plan:	R-R, R-UVL, AG, C-C, C-N, C-O, O-R, P, O-C, O-l, O-U		
Urban Services Line:	Inside	Outside (parts of the area is within while parts outside)	
Coastal Zone:	Inside	Outside	

ENVIRONMENTAL SETTING AND SURROUNDING LAND USES:

Natural Environment

Santa Cruz County is uniquely situated along the northern end of Monterey Bay approximately 55 miles south of the City of San Francisco along the Central Coast. The Pacific Ocean and Monterey Bay to the west and south, the mountains inland, and the prime agricultural lands along both the northern and southern coast of the county create limitations on the style and amount of building that can take place. Simultaneously, these natural features create an environment that attracts both visitors and new residents every year. The natural landscape provides the basic features that set Santa Cruz apart from the surrounding counties and require specific accommodations to ensure building is done in a safe, responsible and environmentally respectful manner.

The California Coastal Zone affects nearly one third of the land in the urbanized area of the unincorporated County with special restrictions, regulations, and processing procedures required for development within that area. The Program Area is not located in coastal zone. Steep hillsides require extensive review and engineering to ensure that slopes remain stable, buildings are safe, and water quality is not impacted by increased erosion. The farmland in Santa Cruz County is among the best in the world, and the agriculture industry is a primary economic generator for the County. Preserving this industry in the face of population growth requires that soils best suited to commercial agriculture remain active in crop production rather than converting to other land uses.

PROJECT BACKGROUND:

Introduction

The RCD proposes the implementation of the South County Habitat Restoration Program (the Program).

The comprehensive program includes the large-scale removal of eucalyptus in South County to reduce the risk of catastrophic wildfire and property damage and the restoration of oak woodland habitat to aid the recovery of the SCLTS and other endemic wildlife. The 11,585-acre Program Area is located in the unincorporated communities of Day Valley, Aptos Hills-Larkin Valley, and Corralitos (Figure 1). The Program Area is roughly bounded by Trout Gulch Road to the northwest and incorporates Day Valley, Pleasant Valley, and portions of Corralitos to the north and northeast. From Amesti Road in the east, the Program Area boundary cuts through agricultural fields to the junction of Freedom Blvd and Buena Vista Drive, the southeast corner of the Program Area to extend to the intersection of Manfre Road with State Route 1, the southern corner of the Program Area. State Route 1 forms the southwestern boundary of the Program Area, capturing the Larkin Valley-Aptos Hill communities east of the highway.

The Program proposes to work within "neighborhood" stands of eucalyptus within the greater 11,585-acre Program Area to remove full eucalyptus stands, which would reduce the effort

and cost of on-going maintenance, resulting in the restoration of large patches of habitat, and the increase in habitat connectivity. The RCD will be responsible for all aspects of the program, including but not limited to ensuring compliance with all regulatory permits, providing planning and technical oversight, cost share funding for Program participants interested in voluntarily improving the habitat on their property by removing eucalyptus trees that threaten property damage through wildfire, and the topping and breaking of limbs in high wind events. In addition to reducing risks to property, eucalyptus removal and subsequent restoration and/or enhancement of native habitats will support the re-establishment and expansion of native ecosystems, including for the recovery of the federally Endangered and State Fully Protected SCLTS.

The Program would not create new regulations or requirements for landowners removing eucalyptus on their own; rather, the Program is intended to provide technical and regulatory guidance and a streamlined regulatory mechanism for eucalyptus removal and native habitat restoration in the South County (Figure 1). The RCD would oversee implementation of the Program to ensure compliance with the California Environmental Quality Act (CEQA), local, state, and federal regulations, and permitting requirements. The Program, developed in concert with the County, would comply with all local regulations protecting biological resources. The RCD would assist with additional interagency coordination, as required, based on the presence of and potential impacts to sensitive environmental resources requiring state and federal agency consultation (e.g. aquatic features, state or federally-listed species, bat maternity roosts, and/or San Francisco dusky-footed woodrat houses).

Under the proposed Program, the County of Santa Cruz would issue a Master permit to the RCD to undertake the activities described in the Covered Program Activities section. The Master Permit identifies eligible projects, specifies criteria for planning, implementation and monitoring, lists information to be included in Programmatic Restoration plans, and establishes a set of conditions to be applied to each project. The Master Permit also prescribes the elements to be included in the project summaries provided by the RCD to the County during the pre-notification process each construction season. Annual reports would be prepared by the RCD describing the projects completed over the previous year, identifying how compliance with Master Permit conditions of approval have been attained. The programmatic permit will not create new regulations or requirements for landowners removing eucalyptus on their own; rather, it will guide work that is funded and/or managed by the RCD or other public agencies. We hope it will also be a valuable resource for landowners in the area who want guidance about best management practices (BMPs) for eucalyptus removal and habitat restoration. This program will be voluntary; participation is not mandatory for property owners within the Program Area footprint.

To analyze the environmental effects of implementing the Program and its component projects and activities, the RCD has prepared this programmatic ISMND (PIS). The "project" under

CEQA, analyzed by this PIS, is the multi-year program of work described in this environmental document.

A. Program Background Information

Overview

The Program is based on the model of the Santa Cruz Countywide Partners in Restoration Permit Coordination Program (PIR), which was developed in 2005 and has incentivized the implementation of more than 100 voluntary restoration projects in Santa Cruz County. As shown by PIR and other "streamlined" permitting programs across the state, these types of programs facilitate the rate in which conservation can be implemented and improve the quality of projects due to the thorough planning process and environmental protection measures built into the program.

The proposed Program for South County consists of covered program activities, including eucalyptus removal and eradication, biomass management activities, and habitat restoration. The proposed Program also consists of environmental protection measures, including project specific requirements (SPRs), best management practices (BMPs), and mitigation measures (MMs), all of which are integrated to establish the core of the project description. A suite of removal and restoration methods described are outlined in covered activities below. These methods will be applied to selected removal and/or restoration areas on a case-by-case basis, not as a one-size-fits-all approach. Selection methods will be based on multiple factors including site characteristics, size of trees, and restoration potential (Table 1). After extensive collaboration with the County and RCD, regulatory agencies will condition and authorize in advance the practices and issue multiple programmatic approvals and permits to the County as the lead agency of this project. Typically, these programmatic level permits outline criteria for eligible projects and establishes permit conditions for planning, implementation and monitoring.

Table 1 Strata of Restoration Potential for Programmatic Evaluation of Individual Project Areas, South County Eucalyptus Removal and Native Habitat Restoration Program Area, Santa Cruz County, California

Restoration Potential	Site Characteristics	Recommended Actions
High	• Minimal invasives (except eucalyptus) present; • Native trees (e.g. oaks) present in openings in or under the eucalyptus canopy; • Native understory (e.g. coffeeberry, blackberry, poison oak) present, especially in openings in eucalyptus canopy and adjacent to eucalyptus; • Intact native habitat adjacent (on two or more sides) (natural recruitment anticipated	• Remove eucalyptus; avoid native trees and understory wherever feasible; • Implement targeted invasive management as needed (i.e. if invasive plants colonize bare areas); • Allow natural recruitment from existing and adjacent habitats; limited need for active replanting; • Planting or seeding bare areas located greater than 200 feet I from native habitat may be required, depending on topography (e.g. ridgelines upslope from native habitat); • Utilize adaptive management approach to ensure restoration occurs.
Moderate	• Moderate levels invasives (e.g. broom) present in understory or adjacent to eucalyptus; • Native trees limited or absent within eucalyptus;	• Remove eucalyptus; • Implement targeted invasive management as needed;

Restoration Potential	Site Characteristics	Recommended Actions
	• Some native understory (e.g. coffeeberry, blackberry, poison oak) present; • Intact or partially intact native habitat adjacent (on one or more sides) (natural recruitment possible)	• Allow natural recruitment from adjacent habitats, where present; • Planting or seeding required in some or most areas to assist restoration; • Utilize adaptive management approach to ensure restoration occurs.
Low	• Dense almost monospecific eucalyptus with minimal openings for native plants; • Invasive species present or abundant; • Native trees absent; • Native understory minimal or absent; • Non-native or degraded native habitat adjacent (natural recruitment not anticipated).	• Remove eucalyptus; • On-going invasive management required; • Planting and seeding required; • Utilize adaptive management approach to ensure restoration occurs.

Source: Biotic Assessment, EcoSystems West

When private landowners seek assistance, the County and RCD will work with the landowners to access if the proposed activities meet all of the criteria established for the Program. If all the criteria are met, the landowner or RCD (with landowner's permission) would be able to implement the project activities under the Program guideline without the need to seek individual permits. The RCD will determine the removal methods used to implement the project, consistent with project objectives and applicable regulatory requirements, assist with individual project planning and design, and oversee monitoring for compliance with permit compliance and design standards, and fulfills reporting requirements to associated permitting agencies.

Team involved in developing this Plan

The Program was developed by the RCD, with the help of numerous qualified consultants. Ecosystem West conducted field assessment of stands of blue gum and/or Red River gum eucalyptus identified within the Program Area and assisted RCD in identifying the habitat type proposed for restoration and the restoration potential at each location based on site characteristic (Table 1). Additionally, Ecosystem West provided project management and environmental review services. Biosearch, a consultant that specializes in amphibians in the Santa Cruz County conducted the standalone Amphibian Site Assessment for California red-legged frog (CRLF), SCLTS, and California Tiger Salamander (CTS). Albion, a consulting firm specializing in cultural and natural resources in Santa Cruz, conducted the archaeological and cultural resources field reconnaissance and accessed potential project impact to these resources. In addition, the Program was reviewed by the County of Santa Cruz (County) Planning Department and California Department of Fish and Wildlife (CDFW).

Program terms

The RCD estimates that full implementation of the Plan will take approximately 10 years, with a reevaluation at the 5-year mark. However, implementation of the removal and/or restoration activities are largely dependent upon funding and private landowner participation. The Program will not expire, although it can be modified as conditions and priorities change. Whether the Plan is modified by RCD action in the future or not, future activities could require additional environmental review, an eventuality which is planned for in the structure of this PIS. There is no set term or expiration date associated with a programmatic environmental document under CEQA.

Permit needs

Implementation of the proposed Program will require formal adoption of the Program and this PIS by the County. Permits required for some future activities under the Plan are as follows:

- Burn permits from the Monterey Bay Air Resource District for prescribed burning of vegetative debris and landscape restoration units as proposed under the Program;
- Preparation of Smoke Management Plan in compliance with Title 17 and Monterey Bay Air Resources District (MBARD) smoke management program guidelines
- Title V permit could be required for use of air curtain burners if burning more than 35 tons per day
- Burn permits from CAL FIRE for prescribed burning occurring in-season;
- A limited amount of work would occur in creeks; as such, a CDFW Lake and Streambed Alteration Agreement (LSAA or "1600" permit) would be required;
- A 401 Water Quality Certification is required from the Regional Board whenever improvements are made within Jurisdictional Waters of the U.S.

- In the absence of a federal permit requirement, impacts to waters of the state, including wetlands, require a Waste Discharge Requirement (WDR) authorization from the Regional Board
- Any and all vegetation management work outside of County-owned lands would require landowner permission, and the execution of a Letter of Agreement between RCD and the affected landowner(s).
- 404 permit could be required under the Clean Water Act (CWA) if fill would be placed in wetlands or other waters of the U.S. The type of permit depends on the amount of acreage and the purpose of the proposed fill, subject to the discretion of the U.S. Army Corps of Engineers (USACE)
- For projects with federal involvement (i.e., funded, authorized, or carried out by a Federal agency), permits for "take" may be obtained through coordination and interagency consultation with the U.S. Fish and Wildlife Services (USFWS) pursuant to Section 7. Designated "Critical Habitat" for plants or animals, determined and published in the Federal Register as a formal rule, also receives protection under Section 7 of the ESA. For actions with no federal nexus, consultation with USFWS takes place under 10(a)(1)(B) of the federal ESA.

Environmental Impacts and Mitigations

LESS THAN SIGNIFICANT IMPACTS

In section III. of this PIS, preparers analyzed the environmental impacts of fully implementing the Program. This analysis, determined that either no impact, or no significant impact, would occur related to the following environmental resources or issue areas:

- Air quality – emission related impacts associated with vegetation management (e.g., chain saws, chippers, smoke) would be minor, temporary, and less than significant.
- Aesthetics - the impacts on scenic views would be less than significant or would be beneficial.
- Agriculture – the proposed Plan would have no impact on agricultural activities or on timberland.
- Cultural – surveys and design features built into the program would ensure impacts to cultural resources to be less than significant.
- Energy - the program would not use energy wastefully or in conflict with an adopted energy efficiency plan.
- Geology and Soils – the proposed Program would not affect, or be affected by, geological hazards such as seismic ground shaking, fault rupture, landslides, or subsidence.

- Greenhouse Gas (GHG) Emissions - the Program's influence on the production or sequestration of GHGs in the area would not be significant or adverse and would not conflict with an adopted GHG reduction or climate resilience plan.
- Hazards and Hazardous Materials – design features built into the program would sufficiently prevent the release of hazardous substances and would not expose the public to health hazards
- Land Use and Planning – the proposed Program would not alter existing land uses nor would it conflict with County General Plan policies
- Mineral Resources - the Program would not cause any changes in the availability of any mineral resource
- Population and housing – implementation of the Program would not affect population growth
- Public services – implementation of the Program would not significantly affect the amount and availability of fire, police, school, or park services
- Recreation - implementation of the Program would neither develop new recreational opportunities or infrastructure that could harm the environment, nor will it have a significant adverse impact on existing recreational opportunities or infrastructure
- Transportation - implementation of the Program would not have a significant adverse impact on existing transportation networks, access, or evacuation; the impact of additional traffic or delays associated with work crews performing vegetation management near local roadways and intersections would be minor and localized
- Tribal Cultural Resources- surveys and design features built into the program would provide a clear and explicit framework for government-to-government collaboration between the County and local Tribes to sufficiently protect tribal cultural resources.
- Utilities and service systems – the Program would not significantly affect, or cause a significant demand for, water supply, waste treatment, wastewater treatment, or drainage facilities

POTENTIALLY SIGNIFICANT IMPACTS THAT CAN BE MITIGATED TO BELOW A LEVEL OF SIGNIFICANCE

The analysis determined that implementation of the Program over many years could result in a potentially significant impact related to the following environmental resources or issue areas, but that these impacts could be mitigated to below a level of significance:

- Biological Resources – impacts to wildlife movement, sensitive habitats, and sensitive wildlife and plants species would be less than significant with the implementation of mitigation measures MM BIO-1 through MM BIO-4.

- Noise – noise impacts related to vegetation management (i.e., chain saws, chippers) would be temporary, localized, and less than significant with the implementation of mitigation measures MM NOI-1 through MM NOI-4

CUMULATIVE IMPACTS AND POTENTIALLY SIGNIFICANT IMPACTS REMAINING AFTER MITIGATION

After mitigation, the County concludes that no cumulative impacts nor potentially significant impacts would remain.

SIGNIFICANT UNAVOIDABLE IMPACTS AND IRREVERSIBLE IMPACTS

Because the "project" in this case is approval of a Program, CEQA requires the County to disclose any significant unavoidable impacts and any significant impacts that would be irreversible (§21100(b)(2)). Since the County finds no significant impacts would remain after mitigation, there are no irreversible nor unavoidable significant effects.

B. Background on the Document

California Environmental Quality Act

CEQA Guidelines Section 15002(a)describes the basic purposes of CEQA which are to:

1. Inform government decision makers and the public about the potential, significant environmental effects of proposed activities.

2. Identify ways that environmental damage can be avoided or significantly reduced.

3. Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures.

4. Disclose to the public the reason why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The adoption of the Program is considered a project under CEQA (CEQA Guidelines Section 15378(a)(1)). Pursuant to Section 15063 of the CEQA Guidelines, the County has prepared this IS/MND to determine if the project may have a significant effect on the environment. If the analysis in this IS/MND determines there is substantial evidence that any aspect of the project, either individually or cumulatively, may have a significant effect on the environment despite the implementation of standard project requirements and mitigation measures, the County shall prepare an Environmental Impact Report (EIR). The County may prepare a Negative Declaration (ND) or a Mitigated Negative Declaration (MND) for the project if the Initial Study determines there is no substantial evidence that the project, or any of its aspects, may have a significant effect on the environment or significant effect can be reduced to a less tan significant level with the implementation of standard project requirements and mitigation measures.

Programmatic Environmental Document

This IS serves as a programmatic IS for adoption of the Program. Adoption of the Program and its program of work is the "project" evaluated by this PIS. In other words, this PIS analyzes what environmental impacts could result if the Program were fully implemented, and it specifies how those impacts will be reduced to the lowest level possible. Activities proposed in the Program receive general environmental review in this ISMND, e.g. analyzing their cumulative impacts as a program after considering their standard project requirements, and then spelling out mitigation measures (if needed) that would be expected to reduce their environmental impacts below a threshold of significance based on the particular resources known or expected to be found in the treatment areas.

Future projects or activities covered by the Program, as they are designed, will undergo additional, site- specific review. If the County finds that a future activity would have effects that were not examined in this programmatic IS, a new initial study would need to be prepared leading to either an EIR or a negative declaration. The determination as to whether an ND, MND, or EIR is required for impacts that are not within the scope of this PIS is subject to the "fair argument" standard. (Under this standard, an EIR is required when there is a fair argument, based on substantial evidence in the record, that the proposed project may have a significant effect on the environment.) If a later analysis is required, it may tier from the PIS where additional analysis is not required as provided in State CEQA Guidelines Section 15152. Whether the project is considered within the scope of this Program is discussed in the "Program Eligibility" section.

If, however, the County finds that pursuant to CEQA Guidelines §15162, no new effects could occur or no new mitigation measures would be required, then the County can approve the activity as being within the scope of the programmatic IS, and no new environmental document would be required (§15168(c)(1) and (2)).

Even if they are within the scope of this PIS, later treatment activities could still require permits or approvals from other state, regional, or local agencies (e.g., CDFW, Department of Water Resources), which are described in "Permit Needs" of the PIS. Permits or approvals will need to be secured before implementation of Program activities.

C. Detailed Project Description

Program Location

The 11,585-acre Program Area is located in the unincorporated communities of Day Valley, Aptos Hills-Larkin Valley, and Corralitos (Figure 1). The Program Area is roughly bounded by Trout Gulch Road to the northwest and incorporates Day Valley, Pleasant Valley, and portions of Corralitos to the north and northeast. From Amesti Road in the east, the Program Area boundary cuts through agricultural fields to the junction of Freedom Blvd and Buena Vista Drive, the southeast corner of the Program Area to extend to the intersection of Manfre Road with State Route 1, the southern corner of the Program Area. State Route 1 forms the

southwestern boundary of the Program Area, capturing the Larkin Valley-Aptos Hill communities east of the highway.

Purpose and need

The purpose of the Program is to provide a streamlined permitting process and financial assistance through cost-sharing for eucalyptus removal and habitat restoration on private lands within the Program Area. Program activities are designed to prevent catastrophic wildfire by reducing fuel load, restore habitat for native and endemic species, focusing on San Andreas Oak Woodland which provides habitat for the SCLTS, and increase groundwater availability. The Program would not create new regulations or requirements for landowners removing eucalyptus on their own; rather, it is intended to provide guidance and resources for landowners in the Program Area that seeks guidance in eucalyptus removal and habitat restoration. This Program will be voluntary; participation is not mandatory for property owners within the Program Area footprint.

As rural landowners become increasingly interested in removing non-native eucalyptus to reduce wildfire risk, increase groundwater availability, and enhance habitat on their lands, they are faced with the challenges posed by the associated costs and the complexity of the regulatory process. From the landowner's perspective, current agency review processes intended to protect natural resources values often act as disincentives to voluntary initiatives to restore native habitats. The Program arose out of the need to alleviate landowner's financial burden, facilitate project implementation, and streamline regulatory compliance.

Eucalyptus in the Program Area

Blue gum eucalyptus (Eucalyptus globulus) is a problematic exotic tree species in Santa Cruz County and throughout Central California. Endemic to Tasmania and southeastern Australia, this species was historically planted in the early 1900s as windbreaks and plantations with the expectation of producing fast-growing timber. Due to their rapid growth, ability to transpire water quickly, and the impact they have on soil and other plants through allelopathy, blue gum eucalyptus is now well established in Santa Cruz County, occupying nearly 2,600 acres (RCIS 2019), and is continuing to expand into other native vegetation communities.

Prior to the establishment of blue gum, the Program Area contained Coast Live Oak Woodland, a natural community type considered a "sensitive habitat" by the County of Santa Cruz (County), as well as redwood forest, native and non-native grassland, chaparral, and riparian forest. The County has a wide variety of sensitive habitat types, including San Andreas Oak Woodland, which occurs in portions of the program area. Mapped San Andreas Oak Woodland, is a designated special forest offered additional special protections in the County code. This type of habitat consists of relatively pure stands of coast live oak with a dense overstory canopy. This habitat type is restricted to the sandy, infertile soils on hillsides and canyons north of Watsonville in Larkin Valley and the Ellicott Slough National Wildlife Refuge.

Sensitive habitats provide refugia for plants and animals in danger of extirpation due to low numbers of individuals per population, a limited number of populations, or a highly limited, fragmented, or vulnerable habitat. In Santa Cruz County, one criterion for meeting the definition of "sensitive" is whether it provides habitat for plant or animal species or vegetation communities that are locally unique or are recognized by the state or federal resource agencies as being rare, threatened, endangered, or a species of special concern (County of Santa Cruz, 2024). Areas immediately adjacent to essential habitat for rare, threatened or endangered species may also be considered sensitive.

All oak woodlands play a critical role in healthy ecosystems, protecting soils from erosion and landsliding, regulating water flow in watersheds, and maintaining water quality in streams and rivers (Bernhardt 2001). Oak woodlands also have higher levels of biodiversity than virtually any other terrestrial ecosystem in California (Bernhardt 2001). As cited in Bernhardt 2001, at least 300 terrestrial vertebrate species, 1,100 native vascular plant species, 370 fungal species and an estimated 5,000 arthropod species are associated with California oak woodlands.

Oak woodlands are known for their high biodiversity, providing habitat for a greater variety of flora and fauna compared to eucalyptus monocultures. Oak woodlands play a crucial role for species like the Santa Cruz long-toed salamander and many other animals that rely on oak habitats for food and shelter. The canopy of oak woodlands allows more sunlight to reach the forest floor, promoting a diverse and lush understory that benefits many species.

Redwood forests also provide benefits that eucalyptus groves do not. Redwood forests often support plants like redwood sorrel, sword fern, and bracken fern (RCIS 2019) and a variety of vertebrates and invertebrate species. Their large branches and at times complex trunk cavities can provide valuable nesting habitat for raptors and rare birds like marbled murrelets. Coast redwoods are also adapted to recurring fire; their bark enables them to survive fire events (RCIS 2019).

Coastal prairies support "diverse assemblages of native forbs" as well as native grasses and shrubs, that do not occur in eucalyptus understories due to shade and litter production (RCIS 2019). Coastal prairies can support a wide variety of pollinators including native moths and bees, and keystone species like California ground squirrel, Botta's pocket gopher, and American badger (RCIS 2019).

Blue gum eucalyptus cause a variety of undesirable impacts to residents who live within and near these stands, including increased risk of catastrophic wildfire, depleted groundwater supplies due to high rates of water consumption through transpiration and evaporation and on-going conversion of native plant communities and understory vegetation.

Compared to native ecosystems, blue gum stands produce large amounts of highly flammable leaf litter and bark, and shed debris, which can create large amounts of fuel for wildfires. These trees also contribute to fire spread by shedding bark that readily catches fire and carries burning embers. This results in a fire hazard rating significantly higher than for native

vegetation types (Wolf & Ditomasso 2016). This was observed during the 2008 Trabing Fire, which destroyed 26 structures and burned a total of 630 acres after spreading into a "large standing eucalyptus grove", as noted at the April 2009 County of Santa Cruz Board of Supervisors Meeting. Eucalyptus trees are also much taller than the oak trees they replace, increasing the risk of tops and limbs damaging property during high wind events.

The physical and chemical composition of eucalyptus leaf litter combined with the trees' tall stature suppress the development of native understory vegetation, reducing wildlife and plant species abundance and diversity (Wolf & Ditomasso 2016). Eucalyptus trees shed litter profusely, and the litter accumulates on bare ground and vegetation underneath the trees. This litter can physically block photosynthesis from occurring by covering up or burying the leaves of shorter plants, restricting sunlight from reaching them. Eucalyptus trees grow taller and more densely than the oak trees that are native to the area, and the resultant shading of the understory further restricts native plant germination and growth.

A number of sensitive bird and amphibian species are affected by the conversion of oak woodland into eucalyptus. For example, oak titmouse and Nutall's woodpecker, two bird species highly associated with oak trees, are not likely to be found in eucalyptus groves. Santa Cruz Long-Toed Salamander, which also inhabits primarily oak woodland habitat, are not usually found in eucalyptus groves. Biosearch found in 2014 that significantly fewer burrowing mammals live in dense eucalyptus than oak woodland habitat, and Santa Cruz Long-toed salamander live in mammal burrows in oak woodland habitat. Other CESA and ESA-listed species and endemic wildlife, such as California red-legged frog, are also harmed by eucalyptus presence, as the conversion of oak woodland to eucalyptus groves has undoubtably reduced suitable habitat.

While complete eradication of eucalyptus trees in California is likely impractical and controversial, focused eucalyptus removal is possible and is being implemented across the state to address fire risks and to restore natural ecosystem processes.

The RCIS (2019) recommends strategically removing eucalyptus in riparian and floodplain habitats to restore native tree species, reduce fire risk, and reduce water use. Where appropriate, downed eucalyptus can be re-used for instream large wood projects (with measures to avoid resprouting).

The RCIS (2019) also notes the effect of eucalyptus on pond, lakes and reservoirs, noting that eucalyptus trees surrounding wetlands take up greater amounts of freshwater than native oaks and thus cause dry down of wetlands earlier in the season, preventing native amphibians from achieving metamorphosis. Lastly, the RCIS (2019) notes habitat degradation due to the colonization of eucalyptus in grasslands, oak woodlands, and maritime chaparral communities and recommends their removal where natural community structure and species composition can be restored.

Replacing eucalyptus, a non-native species, with native oak woodlands, redwood forests and other native habitat, allows the natural ecosystem to flourish, supporting a wider range of plant and animal species adapted to the local climate.

EUCALYPTUS

Eucalyptus groves, primarily dominated by blue gum (*Eucalyptus globulus*), are cultivated non-native forested habitats that were established for windbreaks, erosion control, or historic timber production. Eucalyptus stands tend to occur on slopes and terraces with moderately well-drained soils and may be adjacent to numerous habitat types. Within the Program Area, Red River gum (*Eucalyptus camaldulensis*) and red iron bark (*Eucalyptus sideroxylon*) are also present, although widely scattered and occasionally solitary.

These forested eucalyptus stands comprise a dense overstory that produces a thick layer of understory leaf litter (duff). The eucalyptus trees produce allelopathic effects from leaf oils and root exudates that may inhibit native understory growth and facilitate the development of monospecific stands. Understory species composition is likely correlated to resistance to allelopathic effects, adjacent habitat types, and the prevalence of canopy openings. Within the Program Area, the understory supports native species associated with relictual coast live oak woodland, coastal scrub, mixed evergreen forest, and native prairie grassland habitats including coast live oak (*Quercus agrifolia*), Douglas fir (*Pseudostuga menziesii*), poison oak (*Toxicodendron diversilobum*), coffeeberry (*Frangula californica*), coyote brush (*Baccharis pilularis*), California blackberry (*Rubus ursinus*), wild rose (*Rosa californica*), Yerba santa (*Eriodictyon californicum*), sticky monkey flower (*Diplacus aurantiacus*), hazelnut (*Corylus cornuta ssp. californica*), goldenrod (*Euthamia occidentalis*), Douglas iris (*Iris douglasii*), purple needlegrass (*Stipa pulchra*), and California brome (*Bromus sitchensis var. carinatus*). Additionally, within the canopy openings, non-native species are locally abundant including Eurasian grasses, forbs, and shrubs. Several of the non-native plant species in this habitat type are classified as moderately to highly invasive by the California Invasive Plant Council (Cal-IPC) and USDA including, but not limited to, jubata grass (*Cortaderia jubata*), French broom (*Genista monspessulana*), scotch broom (*Cytisus scoparius*), Italian thistle (*Carduus pycnocephalus*), English ivy (*Hedera helix*), periwinkle (*Vinca major*), and Cape ivy (*Delairea odorata*).

Based on site assessments by qualified biologists, three broad categories of eucalyptus encroachment have been identified. The categories are stratified by restoration potential, taking into account factors such as the presence or absence of native and invasive plant species in the eucalyptus understory; the presence or absence of native trees interspersed with or growing underneath the eucalyptus canopy; and the presence of intact native habitat adjacent to the area of eucalyptus encroachment. The table below describes the categories in more detail. Treatment methods and objectives will differ based on the restoration potential of each site. The differences between these methods and objectives is described in more detail in the following section.

Methods and Outcomes

This section will describe the expected methods and desired removal and restoration outcomes across the project area and in each of the three types of sites. Methods mentioned in this section will be described in more detail in the Covered Activities section.

To the extent feasible, the Program proposes the complete removal of blue gum eucalyptus from the Program Area and enhancement and/or restoration of the removal sites to functional native ecosystems. Removal would take place at a rate of no more than 90 acres per year, with the acreage distributed across sub-watersheds. The maximum amount of treatment allowed per year in a given HUC 12 watershed is 45 acres. The County of Santa Cruz could approve variance to this acreage on a case-by-case basis. The Program would continue for a minimum of 10 years. The Program will be reevaluated at the five-year mark to assess restoration and removal goals. The Program timeline and phasing will depend on landowner participation, funding, and an evolving regulatory landscape. (E. globus), but restoration work may extend beyond the footprint of these stands.

Management and restoration may occur on properties with eucalyptus and on adjacent properties that facilitate access.

SITES WITH HIGH RESTORATION POTENTIAL

Sites with high restoration potential are characterized by a high proportion of native vegetation within eucalyptus stands and immediately adjacent, and minimal to no presence of non-eucalyptus invasive plants. In sites with high restoration potential, removal methods should minimize ground disturbance and damage to residual native trees and native understory.

Mastication and mechanical felling may be used. Where possible, equipment should stay on existing access roads and reach off of the road with an arm to masticate or fell eucalyptus. Otherwise, project managers may designate skid trails from which equipment can operate, preferably following a “herring-bone” access pattern where most activity is concentrated on one central skid trail and limited excursions are conducted off of the skid trail. If native vegetation must be altered to construct a skid trail, limbing should be favored over outright removal.

Hand felling may also be used to eradicate eucalyptus, with care taken to fell eucalyptus away from existing oaks and mature perennial understory vegetation. If there is no path to fell a eucalyptus without causing significant damage to native trees, girdling may be employed and eucalyptus snags may be left standing. Herbicide treatments will be used; painting and daubing immediately following low-stumping should be prioritized over foliar spray in the following growth year to minimize drift and potential damage to nearby native vegetation.

Biomass management in sites with high restoration potential should prioritize methods that limit ground disturbance. Material that may be reached from an existing access road, or a skid trail in the aforementioned “herring-bone” fashion, with an excavator or skid steer may be

loaded onto trucks and hauled offsite for firewood, incineration in an air curtain burner, use in a biomass facility, or other reasons. Material may also be brought to a chipper and chipped into a truck to be hauled offsite. Otherwise, material will need to be lopped and scattered on site or piled and burned in locations that will not substantially damage native vegetation. Any slash left on site should be brought into ground contact and be no taller than 12" off the ground.

Active replanting needs should be minimal in sites with high restoration potential. Natural recruitment from surrounding landscapes may suffice. If the site includes pockets that lack native vegetation and are more than 200 feet from intact native vegetation, these pockets may require active revegetation.

In sites with high restoration potential, it may be the case that some standing eucalyptus will remain on site, whether girdled or living, following treatment activities, as long as native ecosystem function is not impaired (ie, there is contiguous oak canopy, shrub cover, or grassland also on site featuring the expected variety of native plants and animals). If native ecosystem function seems intact, it may be decided that disturbing the habitat may not be worth removing a select few large or highly inaccessible eucalyptus trees. Any residual living eucalyptus trees should be monitored for seedling production; seedlings should be eradicated.

The reintroduction of prescribed fire in the form of broadcast burning may be used to achieve biomass management and restoration goals.

SITES WITH MODERATE RESTORATION POTENTIAL

Sites with moderate restoration potential have some native understory present beneath the eucalyptus canopy, but few to no native trees. Some non-eucalyptus invasive species are present on the site. Intact or partially intact habitat is present on one or more sides of the site.

Mastication may be used on eucalyptus trees up to 12" DBH. Rubber or metal tracked masticators may be used throughout the project area. Islands of native understory vegetation may be flagged for retention; mastication will not occur in these areas. Mechanical felling may also be used on eucalyptus up to 35" DBH. Native understory vegetation should be avoided to the extent feasible. Extremely large trees that are not proximate to infrastructure, or trees that are especially difficult to access or fell due to topography, may be girdled and left standing. Other invasive plants may be hand pulled, cut and painted, or masticated and sprayed with a foliar solution in the following growth year.

Herbicide treatments will be used; painting and daubing immediately following low-stumping should be prioritized over foliar spray in the following growth year in areas that are immediately adjacent to intact understory vegetation, but either method may be used in areas with little to no native understory.

Biomass management in sites with moderate restoration potential should balance covering bare areas for erosion control and to prevent further colonization by invasive plants with leaving space for native plants to be actively re-seeded or expand into the site from nearby

areas of intact or partially intact native habitat. Logs 12" DBH and greater should be no closer than 10' from each other; logs may need to be hauled off site to achieve this.

Initial restoration should focus on native tree replanting, while relying on natural recruitment for native understory species. Further active restoration may be needed if native understory plants are not thriving in following years. Targeted invasive management will be needed until invasive understory plants are no longer present on the site. Because sites with moderate restoration potential do not have widespread non-eucalyptus invasive presence on site, it may be possible to take a very aggressive approach to invasive species eradication simultaneous to the eucalyptus removal project, with the aim of complete eradication of the currently sprouted population, and then focus on hand pulling/flaming/foliar spray of seedlings and resprouts in following years.

Prescribed fire in the form of broadcast burning may be reintroduced to select sites with moderate restoration potential if biologists and land managers determine that residual native trees and other perennials within those sites will be able to withstand moderate to low severity fire within the 10-year timeframe of the program.

SITES WITH LOW RESTORATION POTENTIAL

Sites with low restoration potential are nearly fully colonized with eucalyptus and other invasive plants, with little to no native vegetation present. Intact native habitat does not occur adjacent to the site; in fact, there may be significant weed pressure immediately outside the site.

Mechanical treatment options like mastication and mechanical felling should be used to the greatest extent feasible with respect to standard slope and weather restrictions. Tracked equipment may be used throughout the project area. Extremely large trees that are not proximate to infrastructure, or trees that are especially difficult to access or fell due to topography, may be girdled and left standing, but restoration crews will have to frequently access the site over the 5-10 years following the work, so special care should be taken to not create undue hazards. If a tree that is too large or complex to be felled safely occurs within an area that will be accessed frequently for restoration, it may be necessary to leave that tree alive for the safety of future restoration crews. Other invasive plants may be hand pulled, cut and painted, or masticated and sprayed with a foliar solution in the following growth year.

Biomass management in sites with low restoration potential will need to contend with a high level of eucalyptus and other invasive biomass. If a site is fully managed by mastication, some areas of masticated material may need to be hauled away during the restoration phase to allow space for native vegetation to be planted. Some larger logs will likely need to be hauled offsite and managed by air curtain burner, taken to the dump, sold as firewood, or processed at a bioenergy facility in order to facilitate access for restoration crews. Stump grinding may need to be utilized if the stumps themselves cover more than 70% of total ground area in the site.

Pile burning could be an appropriate partial solution for sites with low restoration potential, but biomass will likely be too voluminous to be managed by pile burning alone.

Restoration will need to be highly active and well-monitored on these sites. Follow up for invasive species management will likely be required throughout the ten years of the Program. Non-eucalyptus invasive species may be so abundant that it will be necessary to manage populations using the strategy of working from the edges inward; this means that existing invasive plant populations may not be treated immediately, but would be reduced in phases over time until the population is eliminated.

It will likely not be appropriate to perform broadcast burns in these sites after native replanting has taken place, as newly-replanted native trees will likely not be able to survive the reintroduction of fire within the ten year span of the Program.

Covered Program Activities

EUCALYPTUS REMOVAL AND ERADICATION

Eucalyptus removal and eradication can be achieved by ways of mastication, hand-felling, mechanical felling, girdling, or herbicide application. The RCD will determine the removal methods used to implement the project, consistent with project objectives and applicable regulatory requirements.

Mastication

Mastication is achieved by way of a grinding head mounted on a piece of equipment that can be as small as skid steer or as large as an excavator. Masticators may be steel-tracked, rubber-tracked, or wheeled. The grinding head may be mounted horizontally or attached to an arm to achieve vertical mulching. Eucalyptus trees up to 12" measured at diameter at breast height (DBH) may be masticated, either while standing or after felling by other means. Masticators may operate on slopes up to 40%; grinding heads mounted on an arm may reach into steeper areas.

Stumps of all masticated eucalyptus greater than 3" DBH must be low-stumped and painted or daubed with herbicide. Stumps of masticated eucalyptus less than 3" DBH may be left until the following growing season, when foliar herbicide may be applied. Further information is included in the Herbicide section below.

Mechanical Felling

Mechanical felling may be achieved with a wheeled or rubber- or metal-tracked harvester such as a feller buncher. Harvesters fell trees with arm-mounted heads that include a gripping implement and a felling implement, such as a chainsaw. Harvesters may operate from an established skid road or paved road or they may operate off trail. Harvesters may be used to fell eucalyptus up to 35" DBH. Harvesters capable of felling trees that large may be too heavy to operate off trail and may need to be situated on a road. Mechanically felling trees may not be cost effective for trees that are too small (less than 12" DBH).

A crane may be used to assist felling of eucalyptus that is greater than 35" DBH. Cranes are generally wheeled and can only be operated on paved or compacted dirt roads. As the project does not propose building new graded roads, cranes may only be operated on existing roadways.

Ropes, winches, or other directional felling devices may also be used to assist in mechanical felling.

Stumps of all eucalyptus that are felled mechanically must be low-stumped and daubed or painted with herbicide immediately following low-stumping. Further information is included in the Herbicide section below.

Hand-Felling

Eucalyptus of any size may be hand-felled with a chainsaw, pole saw, or hand saw. Sawyers will utilize directional felling techniques, such as ropes, winching, or bottle jacks to guide the location the tree is felled. Trained professionals may need to climb larger eucalyptus in order to fell them.

Girdling

Eucalyptus that possesses exceptional habitat features such as cavities, extreme height, substantial diameter, and/or robust upper branches; or would cause substantial damage to intact native habitat if dropped; and which are not in proximity to infrastructure, may be girdled instead of felled. Girdling is achieved by damaging the cambium of a living tree using chainsaws, other mechanical means, or herbicide such that the tree can no longer transport water and nutrients from its roots to its branches, ultimately leading to the death of the tree. Girdling creates snags, which are important habitat features, while addressing the issue of eucalyptus litter production. Herbicide may need to be applied to girdled trees to ensure their death.

Herbicide

Herbicides are a valuable tool in their restoration toolbox, and critical for non-native species such as eucalyptus (and acacia) that stump sprout to regenerate when cut. Many Eucalypti resprout for multiple years after removal. The length of time that re-treatment is required is site dependent and can be influenced by a number of factors including the timing of herbicide application after the trees are initially cut, timing of tree removal, drought, rainfall patterns, and the effectiveness of herbicide translocation within the cambium layer. Once the trees are initially cut, the stumps will receive a localized herbicide application, applied directly to the cambium layer. The herbicide is most effective in limiting re-sprouts when the herbicide is applied within minutes of tree removal by a licensed herbicide applicator. If herbicide cannot be applied within 5 minutes of cutting the tree, the tree stumps can be re-cut and then the freshly cut stumps can be hand painted with herbicide. No adjuvant is necessary and no foliar application is used for this activity.

The preferred herbicide is glyphosate with no pre-mixed surfactant. Products potentially used would be Aquamaster© Rodeo© or Roundup Custom for Aquatic Habitats©. Triclopyr is also an effective herbicide. All cut and paint activities would occur between August 1 and October 15 or 48 hours prior to any forecasted rain.

The use of glyphosate, triclopyr, and other herbicides that are effective in managing eucalyptus and other invasive plant species is subject to consultation with USFWS.

Stump Removal

Stumps may be pulled out of the ground with an excavator or ground with a stump grinder. Stumps may be taken to the dump or another facility that is able to manage them.

BIOMASS MANAGEMENT ACTIVITIES

The proposed removal and eradication activities would generate woody biomass (saplings, small tree limbs, whole trees, logs, leaves etc.). Depending on the size of cut materials and debris and the work location, the material could be processed through chipping, burning, using air curtain burner, or remain on-site. The byproduct of biomass processing could include biochar, bioenergy, and firewood, depending on the selected methods.

Chipping

Biomass up to 16”DBH may be processed using a tracked or tow-behind chipper. In most locations, chips will need to be blown into a container and hauled off site. Chips may also be spread in limited circumstances on roads or skid trails to aid in erosion control.

Pile Burning

Biomass may be gathered into burn piles and burned during appropriate seasons. Piles will need to be well-constructed by hand or machine. Fine fuels should be stacked in the center first and larger fuels added to the outside to increase efficiency of combustion. Piles should be no larger than 10’ x 10’ x 10’. Green material placed in piles should cure for no shorter than 3 months. Piles that will be burned in the wet season or that will overwinter should be covered with a tarp or wax paper to maximize drying and minimize smoke impacts. No more than 90 piles will be burned in one day. All burns will conform to MBARD guidelines.

Piles can be lit with a drip torch or with a lighter. Drip torch use should be minimized where feasible to decrease the amount of fuel that is introduced into the environment.

Air Curtain Burner

An air curtain burner is a large container that uses a gas-powered generator to combust woody material of any diameter. The container includes a layer of air blown across the top that increases the efficiency of combustion. Air curtain burners produce little to no smoke, but they do produce other emissions that may be restricted by MBARD. The use of an air curtain burner may be most appropriate for the disposal of large volumes of material that is too large to be chipped or masticated (<16" DBH) and cannot otherwise be left on site. Air curtain burners generally need to be operated from a landing that is located next to a log deck. Air curtain burners need to be loaded by an excavator. They are most efficient when operated constantly as it takes time for them to power on and off. This can mean increased costs as contractors need to pay workers in shifts throughout the day and night, and it also means increased potential for noise impacts and other disturbances.

Biochar Production

Some air curtain burners produce biochar as a byproduct. Emissions may be reduced by producing biochar instead of completely combusting material, as by definition a small amount of carbon remains. Air curtain burners that produce biochar at scale may require access to a constant source of water to cool the resulting biochar. This in turn requires management of runoff to maintain nearby water quality. Biochar may theoretically be sold, which would offset operational costs. If biochar cannot be sold, it can be hauled off or scattered on site.

Bioenergy Production

Some air curtain burners produce electricity as a byproduct. The energy is stored in a battery module that can be used to charge electric vehicles and other devices. Production of electricity from an air curtain burner could turn biomass processing into a carbon neutral activity. It is unclear if this technology can be connected to the grid. Air curtain burners that can produce bioenergy are not common and are relatively new technology, so tests of them at scale have not been robust.

Large Woody Debris Retention

Material larger than 16" DBH may be left on site in full ground contact. Material this large generally does not pose a fire hazard when fully in contact with the ground and may provide habitat for amphibians and other small animals.

Downed logs may be reoriented from the position they originally fell in within ~300 feet of breeding ponds. Orientation near breeding ponds should be considered on a case by case basis depending on the number of trees involved. Elsewhere the orientation of downed logs may be somewhat random, again depending on the specific site considering numbers of trees, topography, distance to nearest SCLTS breeding site, etc.

Downed eucalyptus logs could persist for decades. Efforts should be made to remove as many as possible.

Creation of Firewood

Material of any size may be processed into firewood onsite or off hauled whole for the purpose of being processed into firewood. Firewood may be sold or donated.

RESTORATION ACTIVITIES

Management of Eucalyptus Resprouts and Seedlings by Herbicide and Hand Pulling

To treat re-sprouts in subsequent years, there are a number of methods that can be used. Recutting the tree stump and re-painting the freshly cut stump herbicide is effective but time consuming for large scale eucalyptus removal. A quick and efficient method, known "chop and squirt", involves a ~4'inch cut on the top of the tree stump with an ax followed by an immediate squirt of herbicide into the cut in the spring. Another effective method is foliar application of herbicide, which involves spraying herbicide directly onto the leaves and stems of the target plants when the sprouts reach 1-2 ft tall. This method becomes less effective as the percentage of foliage increases. An adjuvant or surfactant is often needed to aid penetration through the plant cuticle. This method is best used during the growing season when plants are actively transpiring. Foliar herbicide sprays can be effective for controlling eucalyptus resprouts, especially when targeting young, actively growing foliage. While not as effective as direct stem treatments, foliar application can still provide good control, particularly when combined with proper application techniques and herbicide selection. With foliar application, there will be limited impacts to vegetation surround the tree stump. Eucalyptus seedlings will be hand pulled to deplete the seed bank.

As noted above, the percentage of eucalyptus re-sprouts will vary based on site conditions. However, in general, it is expected that the re-sprouts will be highest in Year 2, tapering down to 1-5% by Year 5 (Table 2). The percentage of seedlings is anticipated decline from to less than 5% by Year 4.

Table 2 Percent Cover of Eucalyptus Resprouts and Seedlings

Percent cover	Year 1	Year 2	Year 3	Year 4	Year 5
Eucalyptus globulus (resprouts)	20%	30%	20%	10%	1-5%
Eucalyptus globulus (seedlings)	10%	10%	10%	<5%	<5%

Management of Other Invasive Plants by Herbicide and Hand Pulling

Herbicide can also be an effective tool to address large stands of other existing non-native species within or adjacent to the eucalyptus grove and treatment will prevent such non-natives from colonizing recently disturbed soils within treatment and staging areas, and temporary access roads. Other methods, such as hand pulling, mowing, weed whipping, solarization, etc., will be preferred method of control and herbicide will only used to manage other invasive species when other methods are determined to be ineffective or would create greater environmental impacts than chemical control. Herbicide use will be evaluated on a project-by-project basis, with consideration of (and preference given toward) IPM strategies wherever possible. However, where it is necessary to use herbicides to control established stands of exotics, the minimum amount of herbicide that will effectively control these non-native species will be used, only the minimum area necessary for effective control will be treated, and all other best management practices, as described below, will be adhered to.

To control jubata/pampas grass, small clumps will be removed by hand. Larger areas of infestation may be removed with equipment or sprayed with Aquamaster©, Rodeo©, or Roundup Custom for Aquatic Habitats©. When herbicide application is used, a non-ionic surfactant would be added that does not contain nonylphenol and mixed according to the label directions. A non-toxic blue dye would be added to ensure full coverage of each plant. When feasible, floral stalks will be removed and bagged prior to herbicide application. Applications of herbicide spray are most effective when applied in the mid to late spring. However, the timing of application will be dependent on species presence and will be developed in partnership with wildlife agencies including CDFW and the Service.

Small infestations of bermuda and kikuyu grass can be hand pulled, but spot spraying larger areas with Aquamaster©, Rodeo©, or Roundup Custom for Aquatic Habitats© is an effective tool to manage these persistent grasses. When herbicide application is used, a non-ionic surfactant would be added that does not contain nonylphenol and mixed according to the label directions. A non-toxic blue dye would be added to ensure full coverage. Applications of herbicide spray are most effective when applied in the mid to late spring. However, the timing of application will be dependent on species presence and will be developed in partnership with wildlife agencies including CDFW and the Service.

Small infestations of bull thistle, poison hemlock and French broom can be hand pulled, however, herbicide application (spot spray) of French broom seedlings is an effective management technique for larger populations. When herbicide application is used, a non-ionic surfactant would be added that does not contain nonylphenol and mixed according to the label directions. A non-toxic blue dye would be added to ensure full coverage. Applications of herbicide spray are most effective in late winter/early spring during a dry period of at least 4 days. However, the timing of application will be dependent on species presence and will be developed in partnership with wildlife agencies including CDFW and the Service.

Glyphosate is an effective herbicide that does not have residual soil activity which would lead to reductions in native plant species recruitment, has a proven effectiveness in cut and paint treatments of Eucalyptus and Acacia, and has a low toxicity when used properly with non-ionic surfactant. Other herbicides, Aminopyralid and Triclopyr, are also effective except for grasses.

Replanting of Native Vegetation from Seed or with Saplings

Proposed Project Areas will be evaluated using a three-tiered classification system and assigned a restoration potential ranking using the methods described above in Table 1. The assigned strata are defined as High, Moderate, or Low Potential, based on site-specific ecological conditions. Factors that determine the site-specific restoration potential include the density of eucalyptus within the stand, presence and cover of native trees (in openings in or under the eucalyptus canopy), abundance native understory species, extent and composition of invasive plant cover, and connectivity to adjacent intact native habitats.

Based on restoration potential, active replanting may be needed to ensure restoration of native habitat. Project Restoration Plans will be developed before implementation that identify restoration potential within different project areas.

To support consistent and ecologically appropriate restoration, a set of Reference Planting Palettes is provided below. These are organized by the anticipated target habitat types most likely to result from eucalyptus removal across the Program Area. Each palette includes native species appropriate for the structural and functional attributes of the habitat type, such as canopy trees, shrubs, graminoids, and herbaceous species.

Habitat types with associated planting palettes include: oak woodland, mixed evergreen forest, redwood forest, native grassland (prairie), coastal scrub, chaparral, riparian, and wetland.

Refer to Table 6 through 13 of the Biotic Assessment (BA) for planting palette associated with each habitat type found within the program area. These palettes are provided for guidance only. Final species selections should reflect local site conditions, soil and hydrologic factors, and restoration goals. All species must be locally appropriate and free of invasive or non-native species.

Broadcast Burning

According to the US Forest Service Fire Effects Information System (FEIS) entry on Coast live oak (*Quercus agrifolia*), fire has mixed effects on coast live oak woodlands. Where oak woodland is adjacent to chapparal or coastal scrub habitat, fire exclusion can produce a dense oak canopy that may be similar to ideal conditions for San Andreas oak woodland and may prevent conversion to coastal scrub. However, adherence to a historical fire return interval of more frequent fire (from 1 – 30 years, according to the FEIS information) can help prevent conifer encroachment where coast live oak woodlands experience conifer pressure. Broadcast burning could be a valuable restoration tool in certain locations. A California Registered Burn

Boss would develop a burn plan based on specific project objectives on a case-by-case basis. Use of prescribed fire would conform to all applicable rules and regulations. Smoke impacts would depend on the season of the burn and would be analyzed in the burn plan.

Restoration Program

Native habitat restoration is the primary and defining component of the Program and is designed to promote long-term ecosystem recovery and the restoration of native habitat functions and values. Program activities focus on the establishment, restoration, and enhancement of oak woodland and other native habitats, including native grassland, mixed evergreen forest, redwood forest, among others. These habitat types provide essential upland habitat and landscape connectivity that support the recovery of the Santa Cruz long-toed salamander (SCLTS) and a diverse suite of native plant and wildlife species by facilitating movement, dispersal, and genetic exchange. In addition to ecological benefits, restoration of native habitats reduces wildfire and high-wind risks to landowners and improves public safety by replacing structurally hazardous eucalyptus stands with more stable native vegetation.

The Program establishes a programmatic framework that guides the preparation and implementation of Project-Level Restoration Plans. All participating landowners will prepare a Project-Level Restoration Plan in coordination with the Resource Conservation District (RCD), the County, and the California Department of Fish and Wildlife (CDFW). These plans translate Program objectives into site-specific restoration actions by identifying appropriate restoration strategies, guiding post-removal activities, and establishing performance criteria and adaptive management measures. Restoration implementation, monitoring, and reporting will be conducted by the RCD or its qualified agents to ensure that restoration objectives are achieved and to allow for adaptive management where necessary.

Proposed Project Areas will first be evaluated using a three-tiered restoration potential ranking system (High, Moderate, or Low), as described in the Methods and Outcomes section and summarized in Table 1. This ranking informs the level of restoration effort required at each site, ranging from passive natural recruitment to more intensive planting and invasive species management. Restoration planning will then be initiated by identifying adjacent native habitat types that serve as reference conditions for restoration. Target habitat types and associated plant species will be determined during project-level planning based on site-specific factors, including soils, hydrology, topography, slope, aspect, and surrounding habitat context. All plant species used in restoration must be locally appropriate and free of invasive or non-native species.

Each Project-Level Restoration Plan will include, at a minimum: (1) a description of pre-treatment conditions, including adjacent habitat types and sensitive plant and wildlife species; (2) characterization of physical site conditions; (3) restoration goals and methods, including eucalyptus removal techniques, target habitat types, restoration methods, planting palettes, invasive species control, soil preparation, and restoration timelines; and (4) performance criteria, monitoring, reporting, and adaptive management measures. Together, these

components ensure that individual projects contribute to long-term ecological recovery and the protection and enhancement of native habitat functions and values across the Program Area. A complete description of the restoration program, including detailed guidance and reference planting palettes by habitat type, is provided in Attachment D, which guides the preparation of all Project-Level Restoration Plans.

Standard Project Requirements

Standard Project Requirements (SPRs) are best management practices embedded into the design of covered program activities. They form the foundation for environmental analysis and are intended to streamline future eucalyptus removal and restoration projects by facilitating more efficient environmental review. SPRs essentially define which activities and impacts need to be analyzed, and to what extent.

In contrast, Mitigation Measures (MMs) are developed after environmental analysis and are intended to reduce or avoid the potential impacts identified during that process.

This Programmatic Initial Study (PIS) evaluates the reasonably foreseeable environmental impacts of implementing the Program, assuming that all relevant SPRs are incorporated into each future activity or project. Prior to approving any future activity, the County will review the activity description to confirm that it falls within the scope of this PIS. As part of this review, the County will verify that all applicable SPRs are integrated into the project design.

If the County determines that a future activity is entirely within the scope of this PIS, no additional environmental documentation is required (per CEQA Guidelines §15168(c)(1) and (2)). However, if any portion of the activity falls outside the scope of this PIS—such as when relevant SPRs are not, or cannot be, incorporated into the project—then a new environmental document (e.g., a Negative Declaration or Environmental Impact Report) will be prepared to address those elements.

Attachment A provides a complete list of SPRs developed for this Program.

Procedures for Review and Approval

To accomplish the goals associated with the Program, qualified RCD staff and/or professional consultants will complete habitat assessments, project planning, and other state and federal permits, as necessary, for each individual project. Cultural resource assessments will be conducted by professional archeologists, along with on-site monitoring during implementation as required for individual project sites.

Qualified staff (as approved by CDFW and/or the Service) and/or professional consultants will conduct pre-implementation surveys and on-site monitoring during implementation. Tree removal will be completed by a Class C61/D-49 Tree Contractor License issued by the Contractor's State License Board, other appropriate license classification such as a valid Type "A" Licensed Timber Operator (LTO), or other appropriate license classification California licensed contractor. Herbicide application will be completed by licensed herbicide applicators

and will comply with all state and federal regulations and BMPs protecting sensitive habitats, aquatic features, and sensitive wildlife species. Revegetation, erosion control, and the on-going removal of other non-native invasive species within the project site (i.e., French broom, thistles, etc.) will be completed by RCD staff, professional consultants, and/or by property owners.

Annual monitoring will be completed by RCD staff and/or qualified resource professionals. The RCD will be responsible for all activities associated with the Program, including submitting annual notifications to the County and annual reporting for compliance with CEQA and county permits.

The RCD will administer the Program using Procedures for Complying with Multiple Permits: A Guide for Conservation Planners, a manual designed specifically customized for this Program. This manual will be prepared once the Programmatic Restoration Permit has been finalized by the County. The manual will contain the final permit conditions (as described in this Programmatic Restoration Permit and all of the final approvals issued by the other regulatory agencies) and will be used by the RCD to develop and implement the projects to be carried out under the Programmatic Restoration Permit. The guidebook will specify the process for ensuring individual projects qualify for the Program; list design and implementation criteria and conditions required by the agencies in their individual permits; provide information on endangered species habitat; and detail the monitoring and reporting requirements of the Program.

PROGRAM ELIGIBILITY

In order to be eligible to be covered by the Program, projects must meet the following criteria:

- Projects must be located within the Program Area (Figure 1)
- Projects must include eucalyptus removal as a primary component, though they may also include removal of other invasive species on a given property
- Projects must only include activities that are described in the Covered Program Activities Section
- Projects must include restoration of the eucalyptus removal area to native habitat

COMPLIANCE AND NON-COMPLIANCE

Prior to implementation of the conservation practices, the RCD will notify the landowner of the Program's SPRs, mitigation measures, and all permit conditions through a signed agreement. If the work carried out is not consistent with design standards and specifications, including the SPRs, mitigation measures, and all permit conditions, RCD staff will notify the landowner and work directly with them to resolve the problem.

The RCD has found this approach to be successful in most cases. In the unlikely event that a landowner still fails to conform, the RCD will notify the landowner in writing that their activities are inconsistent with the Program or the cost-share contract and that their actions

are no longer covered by the Program's permits and agreements. The landowner will then be responsible for obtaining individual permits from the appropriate regulatory agency and will be held liable for all violations.

NOTIFICATION AND REPORTING

All projects are closely monitored during implementation to ensure compliance with the project's design, SPRs, mitigation measures, and additional required permit conditions. Effective functioning of the best built management practice, however, is only as good as the maintenance the system receives after it is installed. Maintenance of practices is the responsibility of the landowner, but RCD will perform status reviews until the practices are functioning as planned for all projects constructed under the Program. The purpose of the status reviews is to determine if each project meets design standards and is serving its intended purpose, and if it is not, to determine whether and what corrective action may be needed. Status reviews include an examination of the practices' current condition, a comparison of as-built conditions with the original plans (including all plantings and other vegetation), and recommendations for resolving any problems encountered.

Each spring, the RCD will submit to the County a list of projects for that year as part of a Preliminary Pre-Construction Notification (PCN). County staff will review the submitted information to verify that the projects qualify under the Program and will notify the RCD if County staff determines there are projects that need to be reviewed in greater detail. The County will make every attempt to contact the RCD, meet if needed, and resolve any outstanding issues within the time frames provided in the permit. County staff may conduct pre-construction site inspections during this review period (or at other times), if necessary. The RCD will then submit a Final PCN incorporating any project revisions required by the County or other agencies, if changes are requested.

If no changes are requested, the draft PCN becomes final. No additional County approval is needed for projects that qualify under the Program.

On a project-by-project basis, the RCD will coordinate with applicable state and federal regulatory agencies that have jurisdiction over natural resources that may be impacted by the Program. The regulatory approval mechanisms for state and federal agencies will vary. A description of agency jurisdiction and a summary of permitting mechanisms (Table 3) is provided below.

End-of-season Annual Reports will be prepared and submitted for review to the County by the RCD, describing the status of all environmental enhancement projects carried out under the Program until projects are functioning according to design standards and serving their intended purpose, and until all mitigation measure installment, monitoring obligations and success criteria, are met. This provides the agencies with the opportunity to review the status and progress of projects implemented under the Program and to determine whether further

clarification and/or minor project modifications may be necessary to meet program objectives and/or meet the terms of the Programmatic Restoration Permit.

Table 3 Permitting Mechanisms for State and Federal Agencies for Projects Permitted under the Programmatic Restoration Permit for the South Santa Cruz County Eucalyptus Removal and Native Habitat Restoration Program

Agency	Regulatory Mechanisms
California Dept. of Fish and Wildlife (CDFW)	• 1600 Streambed Alteration Agreement • 1652 or 1653 approval under the Habitat Restoration and Enhancement Act (HREA)
U.S. Army Corps of Engineers	• Regional General Permit, Section 404 and Section 10 of the Federal Clean Water Act Clean Water Act 2022 - Nationwide Permits such as 13, 27 and 33 • Multi-Agency Implementation of Aquatic, Riparian, Floodplain and Wetland Restoration Projects to Benefit Fish and Wildlife in California (PBA) (FWS Reference: 2022-0005149-S7)
U.S. Fish and Wildlife Service	• Biological Opinion under Section 7 of the Federal Endangered Species Act • Habitat Conservation Plan under Section 10 of the Federal Endangered Species Act • Programmatic Biological Opinions for Special-status Species and Geographic Regions (i.e.., California Red-legged Frog, 08EVEN00-2020-F-0226 and 08EVEN00-2020-I-0292) • Multi-Agency Implementation of Aquatic, Riparian, Floodplain and Wetland Restoration Projects to Benefit Fish and Wildlife in California (PBA) (FWS Reference: 2022-0005149-S7)
NOAA Fisheries	• Federal Endangered Species Act Section 7 Consultation Biological Opinion under Section 7 of the Federal Endangered Species Act

Agency	Regulatory Mechanisms
	• Habitat Conservation Plan under Section 10 of the Federal Endangered Species Act • NOAA Restoration Center Programmatic Biological Opinion (WCR-2015-3755)
Regional Water Quality Control Board	• Federal Clean Water Act Section 401 Water Quality Certification or Waste Discharge Requirement • Clean Water Act Section 401 Water Quality Certification for Small Habitat Restoration Projects • Order for Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for Restoration Projects Statewide

FIVE-YEAR PROGRAM ASSESSMENT AND EVALUATION

The Programmatic Restoration Permit shall expire five (5) years after its effective date. This expiration date can be extended every five (5) years thereafter provided the Permittee requests (by letter) said time extension within four (4) years of the previous permit effective date.

All requests to extend the duration of the Programmatic Restoration Permit an additional five (5) years shall include data sufficient to evaluate the effectiveness of Programmatic Restoration Permit implementation, including an identification of potential modifications to improve Permit effectiveness and/or resource protection and enhancement. The five (5) year time extension will be granted on the condition that the Program operating under the terms of the Programmatic Restoration Permit and that any challenges have been adequately addressed. If there are outstanding issues, amendments to the Programmatic Restoration Permit may be required before the five (5) year extension is granted.

III. ENVIRONMENTAL REVIEW CHECKLIST

A. Aesthetics and Visual Resources

Regulatory Setting

STATE

California State Scenic Highway Program

Created by the Legislature in 1963, the California Scenic Highway Program preserves and protects areas of natural scenic beauty of State highways and adjacent corridors. A highway may be designated as scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the travelers' enjoyment of the view.

For a highway to be officially designated as a scenic resource, the local city or county must adopt a scenic corridor protection program and apply to California Department of Transportation (Caltrans) for official designation (Caltrans 2017). Without official designation and the attendant scenic corridor protection program, development and other activities can degrade scenic value despite the highway's "eligible" designation. Thus, the fact that a highway was at one time deemed eligible for the scenic highway designation does not mean that it retains its original scenic value. Implementation of treatments under the Program will require compliance with this program if treatments occur within and would affect vegetation within a state scenic highway.

California Coastal Act

Section 30251 of the Coastal Act sets forth the Act's aesthetic requirements. Under Section 30251, the scenic qualities of coastal areas must be considered and protected in the development process. Permitted development must be located and designed to protect the scenic and visual qualities of coastal areas. This includes protecting views to and along the ocean and scenic coastal areas, matching the visual character of surrounding areas, and, where feasible, restoring and enhancing visual quality in visually degraded areas. Pursuant to the Coastal Act, cities and counties within the Coastal Zone must develop local coastal plans. Portions of the treatable landscape lie within the Coastal Zone, and treatment activities may be subject to Coastal Act requirements in these areas. The Program is not subjected to coastal act because the Program Area is not in a coastal zone defined by the California Coastal Act.

California Wild and Scenic Rivers Act

The California Wild and Scenic Rivers Act (Public Resources Code Sec. 5093.50 et seq.) was passed in 1972 to preserve California's designated rivers possessing extraordinary scenic, recreation, fishery, or wildlife values. This act was patterned after the 1968 National Wild and Scenic Rivers Act, and both share similar criteria and definitions regarding the protection of rivers, the process used to designate rivers, and in the prohibition of new water impoundments on designated rivers. Unlike the national act, the California Wild and Scenic Rivers Act

provides protection only up to the first line of permanent vegetation and does not require a management plan for designated rivers. The California Legislature is responsible for classifying or reclassifying rivers by statute, though the Resources Secretary may recommend classifications. State designated rivers may be added to the federal system upon the request of the state Governor and the approval of the Secretary of the Interior. Adding state rivers to the federal system under this act does not require approval of the Legislature or Congress. State rivers added to the federal system are managed by the state. Implementation of treatments under the Program will require compliance with this Act if treatments occur within and would affect protected vegetation.

LOCAL

County of Santa Cruz General Plan/Local Coastal Program

The County of Santa Cruz General Plan (GP)/LCP is a comprehensive, long-term planning document for the unincorporated areas of the county and includes the County's LCP. The Conservation and Open Space Element of the County's existing GP/LCP includes objectives and policies that address visual resources. The following goals, policies, and objectives are applicable to the Program (Santa Cruz County 2024):

- Goal ARC-5 Visual Resources: Identify and protect the visual resource areas in the County that have regional public importance for their natural beauty or rural agricultural character.
- Policy ARC-5.1.1 Designation of Visual Resources: Designate on the GP/LCP Resources and Constraints Maps (Appendix F) and define visual resources as areas having regional public importance for their natural beauty or rural agricultural character. Include the following areas when mapping visual resources: vistas from designated scenic roads, Coastal Special Scenic Areas, and unique hydrologic, geologic, and palaeontologic features identified in Goal 6. Ocean views, agricultural fields, wooded forests, open meadows, ridgetops, and mountain hillside views are also public scenic assets that should be identified and considered during development review permit processes.
- Policy ARC-5.1.2 Development Within Visual Resource Areas: Recognize that designated visual resources of Santa Cruz County possess diverse characteristics that are worthy of protection. Require projects in visual resource areas to be evaluated against the context of their unique environments and regulate structure height, setbacks, materials, and design to protect these resources consistent with the objectives and policies of this section.
- Policy ARC-5.1.3 Protection of Public Vistas and Scenic Assets: Protect significant public vistas and public scenic assets as identified in Policy ARC-5.1.1, even those that are not mapped and designated as visual resource areas, scenic roads, coastal special scenic areas, or other unique features, by minimizing disruption of landform and aesthetic character caused by grading operations, timber harvests, utility wires and

poles, signs, inappropriate landscaping and structure design. Provide necessary landscaping to screen development that is unavoidably sited within these vistas. Proposed landscaping within public vistas should be sited and designed to retain existing public views of vistas and scenic assets especially for coastal designated visual resources.

- Policy ARC-5.1.4 Preserving Natural Buffers: Preserve the vegetation and landform of natural wooded hillsides that serve as a backdrop for new development. Also comply with Policy ARC-5.1.8 regarding protection of ridgetops and natural landforms.
- Policy ARC-5.1.5 Preserving Agricultural Vistas: Preserve the aesthetic value of agricultural vistas. Encourage development to be consistent with the agricultural character of the community. Structures appurtenant to agricultural uses on agriculturally designated parcels are considered compatible with the agricultural character of surrounding areas.
- Policy ARC-5.1.10 Restoration of Scenic Areas: Require on-site restoration of visually blighted conditions commensurate with the size and scope of the project as a mitigating condition of approval for new development permits. Provide technical assistance for restoration of blighted areas.
- Objective ARC-5.2 Scenic Roads: To designate roads in the County with significant public vistas as scenic roads and ensure that development and signage does not negatively impact the quality of the public viewshed visible from designated scenic roads.

Environmental Setting

EXISTING VISUAL CHARACTER OF THE SOUTH COUNTY AND THE PROGRAM AREA

The Program Area is located in South County and includes the unincorporated neighborhoods in Corralitos, along Freedom Boulevard, La Selva Beach, Larkin Valley, and Amesti Road. In south County, areas of single-family and lower-density residential development are commonly separated by agricultural lands under cultivation with in-ground crops, orchards, or greenhouses. Redwood and mixed conifer hardwood forests, oak woodlands, chaparral vegetation, and the topography of the inland foothills make up most natural landscapes in the area, with riparian areas extending to the coast. The Program Area is characterized by agricultural and natural landscapes on the Pajaro Valley floor situated before backdrops of the inland foothills and Santa Cruz Mountains. Visually scenic features include the varying topography of valleys and ridgelines, the Pajaro River and its tributaries traversing east-west across the valley floor, grassland meadows, ranches, and rural agricultural landscapes. Agricultural landscapes typically consist of open row crops and greenhouses (Santa Cruz County 2024).

Characteristics of the treatable landscape across the Program Area varies from developed and undeveloped private lands to public lands managed as parks and open space. Larkin Valley that takes up the majority of the Program Area is predominantly undeveloped privately own land that is rural in nature. These areas are composed of dense forests, grasslands, and other vegetation interspersed with private residences. Because these undeveloped areas are on private lands, no public access is permitted, and few trails or roadways are present. The visual character of the treatable landscape across private, undeveloped lands is defined by a variety of colors, textures, and patterns, including smooth rolling hills, large trees and dark forests, and natural colors in varying shades of greens, browns, grays, and blues. Although some residences, water tanks, equipment, and other signs of rural development and infrastructure may be present and contrast with the natural elements of the treatable landscape, there is generally little urban intrusion relative to the expanse of natural areas. For these reasons, private, undeveloped areas of the treatable landscape tend to exhibit high vividness, intactness, and unity as they primarily remain in their natural form with little human alteration. Overall, visual character and quality are considered moderate to high.

The rest of the Program Area is generally residential or a transition zone between residential commercial and agricultural uses. Although agricultural fields combined with views of the distant foothills provide a semi-rural character, residences and other buildings, roadways, transmission lines, and urban infrastructure are in some more developed areas of the treatable landscape. These are encroaching elements that have been constructed and can be visually discordant with the natural environment. Given the variety of colors, shapes, and patterns and presence of intervening urban elements, vividness, intactness, and unity of views in these areas tends to be low to moderate. Overall, visual character and quality are low to moderate.

SCENIC VIEWS AND RESOURCES

According to the proposed GP/LCP Agriculture, Natural Resources + Conservation (ARC) Element, scenic resources include redwood forests, coastal cliffs and estuaries, and rural agricultural fields and orchard areas (County of Santa Cruz 2024). Scenic resources also include rivers, streams, watersheds, reservoirs, special geologic formations such as sandhill outcroppings, and selected vegetative communities. Steep slopes and high elevations are identified for their potential to provide scenic vistas. Scenic roads and highways, such as Highways 1, 9, 17, 35, 152, and 236, afford public views of the Monterey Bay, agricultural fields, dense redwood forests, open meadows, and mountain hillsides (County of Santa Cruz 2024).

Open space lands within the county's state parks, including Manresa and Sunset state beaches in South County contribute both to the county's forested aesthetic and connection to the Pacific Ocean and are considered scenic resources according to the GP/LCP. As shown in Figure 2, scenic resources as defined in the GP/LCP are located along highway 1 within the Program Area.

Additionally, According the GP/LCP Policy ARC-5.2.1, the following roads and highways within the Program Area are valued for their vistas and the public vistas from these roads shall be afforded the highest level of protection:

- Highway 1 - from San Mateo County to Monterey County
- Amesti Road – from Varni Road to Browns Valley Road
- Corralitos Road – from Freedom Boulevard to Browns Valley Road
- Buena Vista Drive



Figure 2 Scenic Resources and Roads in the Program Area

LIGHT AND GLARE

For the purposes of this analysis, light refers to unnatural nighttime lighting, which may intrude into sky darkness when added to an area that currently contains little or no artificial lighting (also known as light pollution). Glare refers to unnatural light or reflected natural light that can be annoying or distracting. Lighting and glare levels tend to be much lower in undeveloped areas of the treatable landscape particularly as these areas occur further from developed areas. Lighting and glare are also lower near most trails and forested areas. Because the treatable landscape is in natural and vegetated areas, no substantial light or glare is currently generated from these areas. Urban areas in the vicinity of the treatable landscape contain varied light sources, such as streetlights, car head lights, and in more urbanized areas, sky glow may be present (sky glow is an area-wide illumination of the night sky from human-made light sources). Particularly within or near the where wildland and urban area intersect, light, glare, and urban sky-glow may be visible from the treatable landscape.

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following standard project requirements (SPRs), as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR LEDA-3 Protect Mature Trees: No mature, native, healthy trees will be removed from the project area.

SPR VEG-4 Restore Project Area with Native Plant Communities: Guidelines and in coordination with the RCD, the County, and CDFW. Restoration plans will be completed based on site-specific requirements. Native plant assemblages appropriate to the specific geographic area will be the prioritized source of planting materials for revegetation. Plants salvaged from the site, plants propagated vegetatively from on-site plants or plants very close to the site, or plants grown from seed collected from the site or plants very close to the site are preferred. Plant species that are native to the broader region (e.g., California Central Coast) can also be acceptable. Non-native, non-invasive plant species for erosion control (ie common barley) can also be used. Plants rated as invasive by Cal- IPC or designated as noxious weeds by California Department of Food and Agriculture are prohibited from use.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Except as provided in Public Resources Code section 21099, would the project:				
1. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐

Discussion: **Less than Significant**. As described in the Environmental Setting section, the Program Area is located in unincorporated neighborhoods of South County. The majority of the area lies within Larkin Valley, which is rural and undeveloped, featuring views of large trees, rolling hills, and dense forest. These areas are privately owned and offer limited or no public access. As a result, much of the Program Area is not visible to the general public. The remaining areas are developed with low-density residential uses and are semi-rural in character, with views of agricultural lands and distant vistas of the Santa Cruz foothills.

Project activities may result in temporary impacts to scenic vistas. Equipment and trucks may be visible along or near fuel reduction and invasive species removal zones, depending on staging locations. Additionally, if pile burning is conducted, smoke could temporarily affect visual quality. However, these impacts would be short-term and not substantial and would be offset by long-term aesthetic benefits associated with the Program.

Removal of eucalyptus trees may temporarily alter the visual character of the area as native vegetation becomes established (SPR VEG-4). Over time, this transition is expected to restore and enhance the area's visual character. While viewers may perceive a change in vegetation type—from eucalyptus groves to native oak woodland, shrub, and grass communities—the rural, vegetated nature of the landscape would be maintained. In fact, visual quality may improve, as native oak woodlands are generally shorter than eucalyptus trees, contributing to increased visual openness and a greater sense of spaciousness.

Based on these considerations, the impact to scenic vistas would be less than significant**,** and no mitigation is required**.**

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*	☐	☐	☒	☐

***Discussion*:**

Less than Significant. The Program Area contains or is adjacent to several county and state designated scenic roads, including Highway 1 and portions of Corralitos Road, Buena Vista Drive, and Amesti Road.

Program implementation could affect scenic resources along Highway 1, where groves of eucalyptus trees are present, as identified in the Biological Resources Assessment Report. Motorists on Highway 1 currently have views of landscape trees and distant views of the Santa Cruz foothills. Although viewers may notice a change in vegetation pattern from eucalyptus removal and native replanting, the high speed of travel along this corridor would reduce the visibility and perceptibility of such changes. Removed trees will be replaced with native vegetation. Potential impacts to scenic resources visible from Highway 1 would be less than significant.

Along Buena Vista Drive and Amesti Road, views consist primarily of rolling hills, agricultural fields, chaparral, and landscape trees, with limited to no visibility of eucalyptus groves. Therefore, tree removal in these areas would result in minimal to no visual impact for viewers.

Viewers on Corralitos Road currently experience a combination of distant views of eucalyptus groves and closer views of agricultural fields, residences, and mixed evergreen forest. As such, Corralitos Road may experience the greatest degree of visual change among the scenic roads in the Program Area. Removal of mature eucalyptus trees could result in a temporary reduction in visual screening or canopy density, leading to a short-term loss in visual quality while native vegetation becomes established. However, this effect would be temporary, and over time, the introduction of native oak woodland, shrub, and grass communities is expected to visually integrate with the existing landscape and restore the area's scenic quality.

Although the project would result in a shift in vegetation type, it would not substantially damage scenic resources. The replanting of native species would maintain the area's rural and vegetated character, and in the long term, may enhance scenic quality by introducing more open, ecologically appropriate landscapes. Based on these considerations, impacts to designated scenic roads from program implementation would be less than significant, and no mitigation is required.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐

Discussion: **Less than Significant**. In general, the proposed treatments are expected to enhance—rather than degrade—the aesthetic character of the area. While viewers within or adjacent to the Program Area may observe temporary visual impacts, such as piles of sawdust or slash awaiting chipping, burning, or removal, and long-term changes in vegetation patterns due to eucalyptus removal, these effects will be mitigated through planned revegetation. The project area will be restored with native plant species, and existing mature, healthy native trees will be preserved (SPR LEDA-3 and SPR VEG-4). Over time, these efforts will restore the visual character of the landscape to one more closely resembling its native condition. Additionally, the removal of tall eucalyptus groves will result in a more open landscape, offering broader views, as native forests and oak woodlands are generally shorter in stature. As such, the impact would be less than significant, and no mitigation is required.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Discussion: **Less than Significant**. Prescribed fire or pile burning activities could create a faint temporary glow on rare nights, but the glow will neither be substantial nor affect day or nighttime views of the area. As such, the impact would be less than significant, and no mitigation is required.

Cumulative impacts: The cumulative aesthetic impacts of the program are expected to be negligible or positive.

B. Agriculture and Forestry Resources

Regulatory Setting

FEDERAL

No federal laws or regulations related to agriculture and forestry resources are applicable to the project. The Program Area does not include federal land.

STATE

Farmland Mapping and Monitoring Program Agricultural Classifications

The California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP) prepares maps and statistical data for analyzing land use impacts on California's agricultural resources. The FMMP categorizes agricultural production potential based on a combination of physical and chemical characteristics of the soil and climate that determine the degree of suitability of the land for crop production. FMMP updates the agricultural data and maps for each county every two years. The most recent update occurred in 2016. The farmland classifications under FMMP are as follows:

- Prime Farmland: land that has the best combination of features for the production of agricultural crops;
- Farmland of Statewide Importance: land other than Prime Farmland that has a good combination of physical and chemical features for the production of agricultural crops but that has more limitations than Prime Farmland, such as greater slopes or less ability to store soil moisture;
- Unique Farmland: land of lesser quality soils used for the production of the state's leading agricultural cash crops;
- Farmland of Local Importance: land of importance to the local agricultural economy;
- or
- Grazing Land: existing vegetation that is suitable for grazing.

Williamson Act Contract Lands Farmland Classifications

The California Land Conservation Act (Williamson Act) recognizes the importance of agricultural land and includes provisions to protect and ensure the orderly conversion of agricultural land. The Williamson Act allows a property owner to commit, via contract with the County, to not developing a subject property in exchange for a guarantee that the property will be taxed at agricultural values under minimum 10-year rolling term contracts. The contracts may be cancelled to allow a limited number of public uses, such as open space and natural resource conservation, and a cancellation fee may apply. The process for exiting the contracts involves nonrenewal, which takes place over a 9-year period. According to DOC 2020-21 Status Report, more than 14 million acres of land were enrolled under Williamson Act Contract throughout the state in 2021 (DOC 2021). The Program Area includes land enrolled under Williamson Act in each of the designated farmland categories. The farmland classifications under Williamson Act are as follows:

- Prime Agricultural Land: Land which is enrolled under California Land Conservation

Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):
    - qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications;
    - qualifies for rating 80 to 100 in the Storie Index Rating;
    - supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre, as defined by the United States Department of Agriculture;
    - planted with fruit or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years, and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
    - has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.
- Non-Prime Agricultural Land: Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of Statewide Significance under the California Open Space Subvention Act. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.
- Farmland Security Zone: Enrolled parcels containing either Prime or Non-Prime agricultural land restricted by a 20-year contract pursuant to Government Code Section 51296.
- Mixed Enrollment: Enrolled lands containing a combination of Prime, Non-Prime, Open Space Easement, or other contracted or enrolled lands not yet delineated by the county.
- Non-Renewal: Enrolled lands for which non-renewal has been filed pursuant to Government Code Section 51245. Upon the filing of non-renewal, the existing contract remains in effect for the balance of the period remaining on the contract. During the non-renewal process, the annual tax assessment gradually increases. At the end of the 9-year non-renewal period (or 19-year non-renewal period if FSZ), the contract expires, and the land is no longer restricted.

LOCAL

County of Santa Cruz General Plan/Local Coastal Program

The County of Santa Cruz GP/LCP is a comprehensive, long-term planning document for the unincorporated areas of the county and includes the County's LCP, which was certified by the California Coastal Commission in 2024 (Santa Cruz County 2024). The Conservation and Open Space Element of the County's GP/LCP includes the following objectives and policies pertaining to agricultural resources that are applicable to the Program:

- Objective ARC-1.3 Prevent the Conversion of Commercial Agricultural Land: To prevent the conversion of Commercial Agricultural Land that is agriculturally viable to non-agricultural uses, in order to protect agricultural lands and support the local agricultural economy.
- Objective ARC-1.4 Resolving Land Use Conflicts to Protect Commercial Agricultural Land: To ensure the long-term viability of local commercial agriculture by minimizing land use and operational conflicts, carefully regulating residential uses, and resolving conflicts in favor of protecting commercial agricultural lands and supporting continued agricultural operations on commercial agricultural lands.
- Objective ARC-1.6 Non-Commercial Agricultural Land: To encourage and provide for a broad range of agricultural, agricultural support, low-intensity residential, open space, and other compatible uses on the agricultural lands in the County which are not designated as commercially viable. These uses may include small-scale agriculture, single-family residences, community gardens, and agro-tourism uses, in order to maintain a diversity of low-intensity land uses, farm and related supportive uses, as well as open spaces that contribute to rural character.

Santa Cruz County Code

The following chapters of the Santa Cruz County code (SCCC) outlines policies and regulations related to agriculture and forestry resources that are applicable to the Program:

- Chapter 13.10, Zoning Regulations, of the SCCC includes County of Santa Cruz Agricultural Zone Districts and Timber Production (TP) Zone Districts. The County's agricultural zone districts include Commercial Agriculture (CA), Agriculture (A), Agricultural Preserve (AP), and Agricultural Preserve and Farmland Security Combining (P). Approximately 54,487 acres of the county are zoned CA or A (County of Santa Cruz 2017). The intent of the CA zone district is to preserve commercial agricultural lands, while the A zone district provides for non-commercial agricultural uses, such as family farming and animal raising, and allows limited commercial agricultural activities. The AP zone district permits commercial agricultural and open lands under an agricultural preserve contract but is proposed to be removed as the P combining district is now used for agricultural preserve properties. In addition, the RA (Residential Agriculture) zone district is single family residential zone district where small-scale commercial agriculture, such as animal-keeping and specialty

crops, can take place in conjunction with the primary use of the property as residential. The intent of the TP zone district is to protect and maintain the county's larger tracks of timberland, and to preserve agriculture and other open space uses where they are compatible with timberland uses. Separate from the TP district are areas identified by the County as "Timber Resources."

- SCCC Chapter 16.50, Agricultural Land Preservation and Protection, designates and protects commercially viable agricultural land which exists within the county, and which is in the public interest to preserve and protect for exclusive agricultural use. This chapter seeks to enhance and encourage agricultural operations within the county, and acknowledges certain agricultural land in the county, not presently of commercial value, that also merit protection.
  Agricultural lands in the County are categorized into the following:
  - Type 1A Viable Agricultural Land: comprise areas of known high productivity which are not located in any utility assessment district for which bonded indebtedness has been incurred. These lands essentially meet the U.S. Department of Agriculture Soil Conservation Service and the California Department of Food and Agriculture (CDFA) criteria for "prime" and "unique" farmland and "prime" rangeland.
  - Type 1B Viable Agricultural Land in Utility Assessment Districts: This type includes viable agricultural lands, as defined above, which are within a utility assessment district for which bonded indebtedness has been incurred, except agricultural preserves.
  - Type 2A Limited Agricultural Lands in Large Blocks: These lands are in large blocks, are not in any utility assessment district which has incurred bonded indebtedness and are not subject to agricultural-residential use conflicts.
  - Type 2B Geographically Isolated/Limited Agricultural Lands: This category includes agricultural lands with limiting factors which are geographically isolated from other agricultural areas. These lands are not in a utility assessment district which has incurred bonded indebtedness and are not subject to agricultural-residential use conflicts.
  - Type 2C Limited Agricultural Lands in Utility Assessment Districts: This type includes agricultural lands with limiting factors which are in a utility assessment district which has incurred bonded indebtedness.
  - Type 2D Limited Agricultural Lands Experiencing Use Conflicts: These are agricultural lands with limiting factors which are experiencing extreme pressure from agricultural-residential land use conflicts such as pesticide application, noise, odor or dust complaints, trespass, or vandalism.
  - Type 2E Vineyard Lands
  - Type 3 Coastal Zone Prime Agricultural Land

- SCCC Chapter 16.52, Timber Harvest Regulations, determines, protects, and maintains county timberlands through regulation of timber harvesting. The chapter encourages the continued production of forest products in compliance with performance standards, which emphasize protection of environmental and open space values while fostering increased productivity of forest land. This regulation also serves to protect, maintain, and improve the forest land of Santa Cruz County.

Environmental Setting

AGRICULTURAL LAND IN THE COUNTY AND PROGRAM AREA

Agriculture has a long history in Santa Cruz County and continues to be one of the largest industries in the county. Agricultural resources include active agricultural operations on prime and productive non-prime soils, as well as non-commercial agricultural operations. Agricultural lands are areas that have been determined to be most suitable for a diversity of commercial and non-commercial farming operations such as the production of food, fiber, and ornamental crops, livestock, small family farming, and animal raising (Santa Cruz County 2024).

In Santa Cruz County, agricultural land includes commercial and non-commercial agricultural lands. Commercial agricultural land is land that is best suited to the commercial production of food, ornamental crops and livestock and meets the GP/LCP criteria for agricultural resource soils. Approximately 20.5% of the total land area of the County is commercial agricultural land. All lands that meet the criteria for commercial agricultural lands, as defined in the GP/LCP Glossary, are designated by the County as Agricultural Resource (Santa Cruz County 2024). Non-commercial agricultural land in the county is not necessarily viable commercially but may support agricultural activities and is distributed more broadly throughout the rural areas of the county and represents approximately 0.6% of the area of the County. Figure 3 shows commercial agricultural land in the Program Area, which is mostly located in Corralitos and Freedom. All land enforceable restricted with a Land Conservation Act (Williamson Act) contract for Agricultural Preserve is also included in the figure.

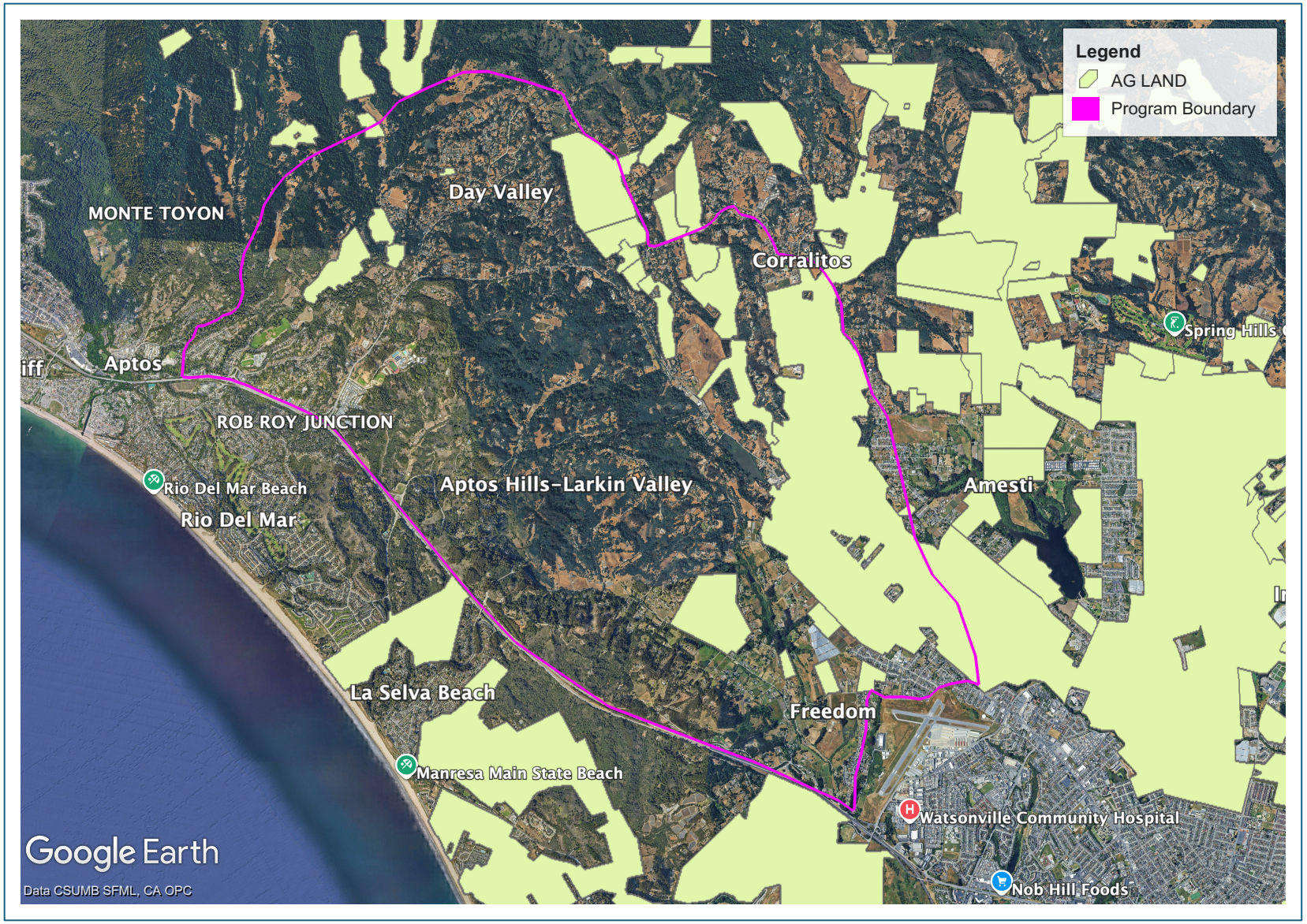


Figure 3 General Plan Agricultural Resources

FMMP Land in the Program Area

According to the California Department of Conservation, 38,711 acres of land in Santa Cruz County were classified as agricultural land in 2018, of which 19,150 acres were classified as Important Farmland: 13,268 acres were classified as Prime Farmland, 2,263 acres were classified as Farmland of Statewide Importance, 3,374 acres were classified as Unique Farmland, and 245 acres were classified as Farmland of Local Importance (DOC 2022). The majority of the areas designated as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are located in the eastern portion of the Program Area while the northern portion of the Program Area are predominantly urban and built-up land. Additionally, there is an area designated as grazing land in Larkin Valley.

FORESTRY LAND IN SANTA CRUZ COUNTY AND THE PROGRAM AREA

Forested lands and timberland occupy a substantial portion of Santa Cruz County, with large areas of timber production occurring in the Santa Cruz Mountains and inter-mountain valleys. Over 90,400 acres in the county are designated as timber resource lands (Santa Cruz County 2024). Some of these lands are also protected by Williamson Act and Open Space contracts that limits the types of allowable land uses. These lands provide for the sustainable harvesting of timber, while also contributing to open space and providing important natural habitat.

The Timber Production (TP) zone district extends across approximately 71,400 acres of the county, primarily in the county's north coast and mountain areas. The intent of the TP district is to protect and maintain the county's larger tracks of timberland, and to preserve agriculture and other open space uses where they are compatible with timberland uses. However, timberlands may occur within all zone districts of the county and are not solely limited to TP zones.

The county's mountainous region, which encompasses the Santa Cruz Mountain range and includes the San Lorenzo Valley, Summit, and Skyline planning areas, contains the greatest extent of timberland in the county, with approximately 45,575 acres (50.3% of county total). There are approximately 27,240 acres of TP-zoned land in the North Coast and Bonny Doon planning areas, which are dominated by a mix of public lands, including multiple state parks and U.S. Bureau of Land Management holdings, as well as private agricultural and timber operations. The South County contains the least amount of timberland with approximately 12,530 acres (16.8% of county total), located in the Aptos, Aptos Hills, Eureka Canyon, and Salsipuedes planning areas (Santa Cruz County 2023).

As shown in Figure 4, there is almost no area designated as Timber Resources in the County's GIS database within the 11,000 Program Area with the exception of a small (approximately 0.5 acre) area adjacent to Bear Valley Road (Santa Cruz County 2023).

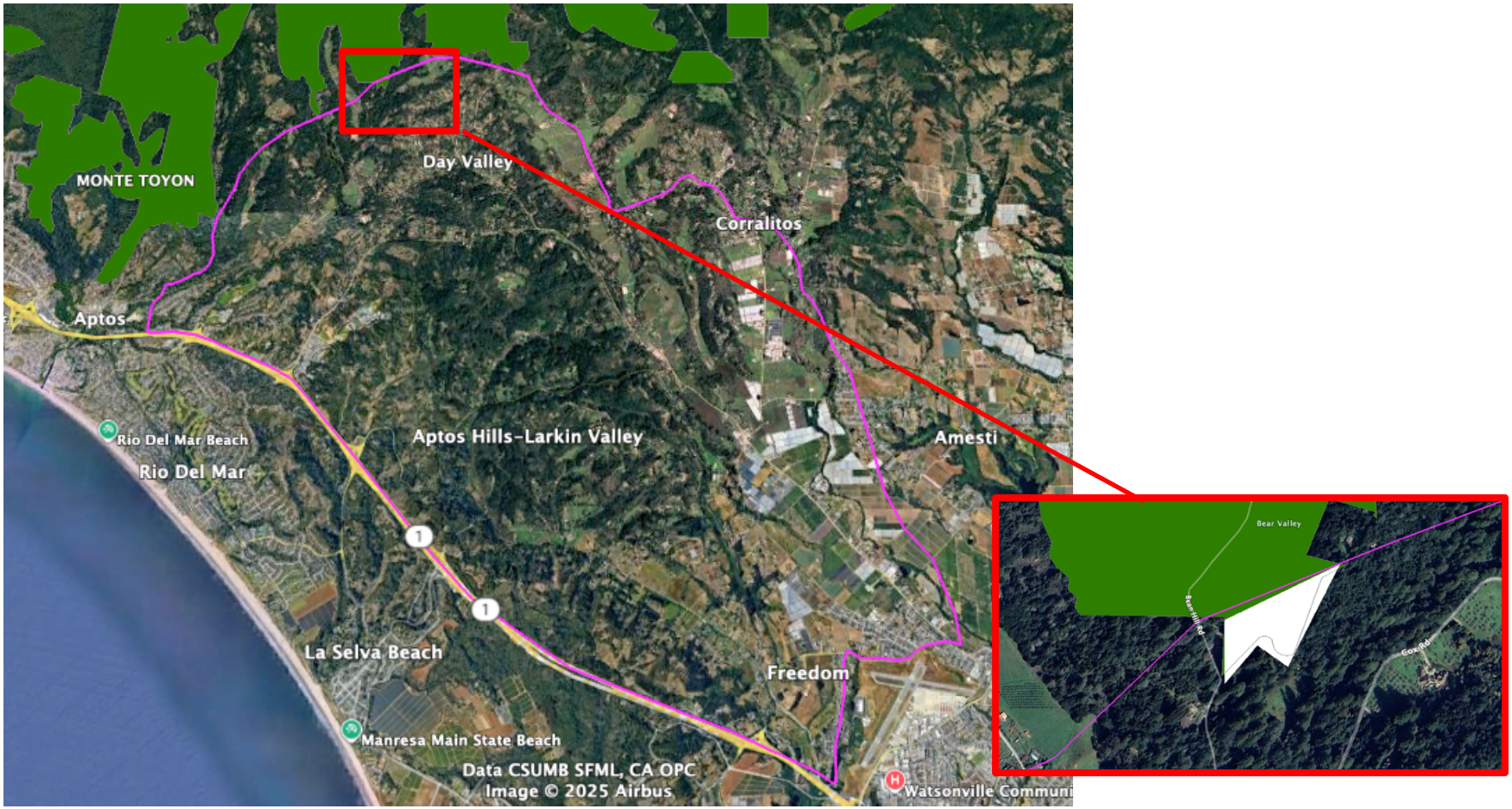


Figure 4 Timber Resources in the Program Area

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following SPRs, as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR LEDA-3 Protect Mature Trees: No mature, native, healthy trees will be removed from the project area.

Impact Discussion

Would the project:

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

***Discussion*:**

No Impact. As discussed in the Environmental Setting section, the Program Area contains land designated as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance under the FMMP of the California Natural Resources Agency (CNRA). Prime Farmland areas may be temporarily affected during treatment activities; however, no permanent impacts would occur. Treatment would primarily involve removal of non-native eucalyptus and invasive weeds within the Program Area. Healthy, mature, native trees would be retained. As such, no Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance would be converted to non-agricultural use. Therefore, no impact would occur.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

***Discussion*:**

No impact. See discussion for B-1 above. The Program will not result in land use that conflicts with existing zoning for agriculture use, or a Williamson Act contract. No impact would occur.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒

Discussion: **No impact**. As shown in Figure 4, the Program area contains a small 0.5 acre area with timber resources in Day Valley. However, no project activities under the Program are associated with commercial timber harvesting. If the project is located in this area, tree removal will comply with the County's tree removal ordinance. The Program will not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). No impact would occur.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion: **No Impact**. See discussion under B-3 above. No impact is anticipated.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion: **No Impact**. See discussion under B-1 above. The Program proposes the removal of non-native eucalyptus tree and restoration of native habitat. While non-native eucalyptus and other non-native trees would be removed, the proposed project site would be replanted with native trees and plants. The proposed Program would not result in the loss of forest land, nor would it convert forestry land to non-forestry use. Adverse effects on agriculture and forestry resources would not occur. No new development is proposed and no other changes to the existing environment would occur such that due to their location or nature, could result

in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use. No direct, foreseeable indirect, offsite, or cumulative impact would occur.

Cumulative impacts: There will be no cumulative agricultural or timberland-related impacts of the program.

C. Air Quality

Regulatory Setting

FEDERAL

Clean Air Act

The U.S. Environmental Protection Agency (EPA) is responsible implementing national air quality programs. EPA's air quality mandates draw primarily from the federal Clean Air Act (CAA), which was enacted in 1970, and the major amendments made by Congress in 1990. EPA's air quality efforts address both criteria air pollutants and hazardous air pollutants. EPA regulations concerning criteria air pollutants and hazardous air pollutants are presented in greater detail below. The CAA is applicable to the Program, because treatment activities have the potential to generate criteria air pollutant and hazardous air pollutant emissions through use of off-road equipment, machine-powered hand tools, helicopters, vehicles for worker commute, trucks for materials delivery and hauling, and prescribed burning.

The CAA required EPA to establish national ambient air quality standards (NAAQS) for six common air pollutants found all over the U.S., referred to as criteria air pollutants. EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter with aerodynamic diameter of 10 micrometers or less (PM_{10}) and fine particulate matter with aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead. Criteria air pollutants (or precursors) would be generated by treatment activity implemented under the Program. The NAAQS are shown in Table 4 National and State Ambient Air Quality Standards. The primary standards protect public health, and the secondary standards protect public welfare. The CAA also required each state to prepare a State Implementation Plan (SIP) for attaining and maintaining the NAAQS. The federal Clean Air Act Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. California's SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The Program Area is located in the North Central Coast Air Basin (NCCAB). EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, EPA may prepare a federal implementation plan that imposes additional control measures. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

40 CFR 60 subpart CCCC

This subpart went into effect on August 7, 2013. It establishes new source performance standards for commercial and industrial solid waste incineration units and air curtain incinerators. 40 Code of Federal Regulations (CFR) 60 subpart CCCC of applies to the Program because treatment activities could use air curtain incinerators for biomass disposition. The performance standard includes regulations related to preconstruction siting analysis, waste management plan, operator training and qualification, emission limitations and operating limits, performance testing, initial compliance requirements, continuous compliance requirements, monitoring, recordkeeping, and reporting.

STATE

California Clean Air Act

The Mulford-Carrell Air Resources Act of 1968 created the California Air Resources Board (CARB) and required it to adopt statewide air quality standards, which are referred to as the California Ambient Air Quality Standards (CAAQS). CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act. The California Clean Air Act, which was adopted in 1988, required local air districts to develop and implement plans to achieve the CAAQS. The CAAQS are presented with the NAAQS in Table 4 National and State Ambient Air Quality Standards.

As shown in Table 4, CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. For most criteria air pollutants, the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The California Clean Air Act requires that all local air districts in the state endeavor to attain and maintain the CAAQS by the earliest date practical. The California Clean Air Act specifies that local air districts should focus attention on reducing the emissions from transportation and area-wide emission sources. The CCCA also provides air districts with the authority to regulate indirect sources. The California Clean Air Act and CAAQS are applicable to the Program, because treatment activities would generate criteria air pollutants and precursors that could affect the attainment status of air basins.

Tanner Air Toxics Act

Tanner Air Toxics Act of 1983 and Air Toxics Hot Spots Information and Assessment Act of 1987 Toxic Air Contaminants (TACs) in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). TACs would be generated by treatment activities conducted under the Program. The Tanner

Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. CARB has adopted all EPA-identified hazardous air pollutants as TACs and identified 21 additional substances as TACs, including particulate matter exhaust from diesel engines (diesel PM) (CARB 2011a).

After a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate best available control technology for toxics to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

CARB has adopted diesel exhaust control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles and equipment will result in a vehicle and equipment fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be 85 percent less in 2020 than they were in 2000 (CARB 2000). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced. CARB diesel exhaust control measures and mobile-source emission reduction regulatory measures are applicable to the Program because treatment activities include the use of diesel-powered equipment and would result in mobile-source emissions of TACs.

Table 4 National and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
		Concentrations	Primary	Secondary
O_3	1 hour	0.09 ppm (180 µg/m — Same as Primary	—	Same as Primary
	8 hours	0.070 ppm (137 µg/m)	0.070 ppm (137 µg/m)	
NO_2	1 hour	0.18 ppm (339 µg/m^3)	0.100 ppm (137 µg/ m^3)	—
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/ m^3)	Same as Primary Standard
CO	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/ m^3)	None
	8 hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/ m^3)	
SO_2	1 hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/ m^3) h	—
	3 hour	—	—	0.5 ppm (1,300 µg/m3)
	24 hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas) g	—
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas) g	—
PM_{10}	24 hour	50 µg/ m^3	150 µg/ m^3	

Pollutant	Averaging Time	California Standards	National Standards	
		Concentrations	Primary	Secondary
	Annual Arithmetic Mean	20 µg/ m^3	—	Same as Primary Standard
$PM_{2.5}$	24 hour	50 µg/m^3	150 µg/ m^3	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m^3	—	15.0 µg/m^3
Lead	30-day Average	1.5 µg/m^3	—	—
	Calendar Quarter	—	1.5 µg/ m^3 (for certain areas) k	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m^3	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)	—	—
Vinyl Chloride	24 hour	0.01 ppm (26 µg/m^3)	—	—
Sulfates	24 hour	25 µg/m^3	—	—
Visibility reducing particles	8 hour (10:00a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative	—	

Pollutant	Averaging Time	California Standards	National Standards	
		Concentrations	Primary	Secondary
		humidity is less than 70%		

Source: CARB 2025

California Code of Regulations Title 17

Title 17 of the California Code of Regulations (CCR) addresses public health issues. Division 3 of Title 17 specifically addresses issues related to air resources. Topics most relevant to treatment activities conducted under the Program would include: Air Basins and Air Quality Standards (Subchapter 1.5), Smoke Management Guidelines for Agricultural and Prescribed Burning (Subchapter 2), Toxic Air Contaminants (Subchapter 7), and Asbestos (Subchapter 7.5). These topics are relevant because treatment activities could result in criteria air pollutant and TAC emissions that affect air quality and health, include prescribed burning, and could occur in areas where naturally occurring asbestos is present.

CARB oversees California's Smoke Management Program, which addresses potentially harmful smoke impacts from agricultural, forest, and rangeland management burning operations. The legal basis of the program is found in 17 CCR Section 80100 et. seq., Smoke Management Guidelines for Agricultural and Prescribed Burning, adopted by CARB in 2001. Under these guidelines, air districts implement a daily burn authorization system under which they specify the amount, timing, and location of burns for the purposes of minimizing smoke impacts on sensitive areas, avoiding cumulative smoke impacts, and preventing public nuisances from occurring. Through the burn authorization system, air districts authorize no more burning on a daily basis than is appropriate considering meteorological and air quality conditions.

Adoption of the amendments to the Smoke Management Guidelines for Agricultural and Prescribed Burning by CARB in 2001 triggered a CEQA analysis. CARB concluded that adoption of these guidelines would not cause significant adverse environmental impacts. CARB further concluded, in regard to air quality impacts, that compliance with the guidelines should result in reduced smoke impacts, improved air quality, and progress towards achievement of CAA and California Clean Air Act requirements, and also posited that potential benefits from the program may accrue from a reduction in risk of wildland fires due to increased prescribed burning activities.

Prescribed Fire Incident Reporting System

The Prescribed Fire Incident Reporting System (PFIRS) was developed in response to Title 17 of the CCR and serves as an interface between air quality regulators, land management agencies and individuals that conduct prescribed burning in California. The system facilitates

communications by providing access to a database containing information on burn planning, burn approvals and emissions information. PFIRS enables individuals involved in prescribed burning the ability to view this information on a statewide level. The majority of air districts in the state use PFIRS. CARB is working to enroll more air districts in the use of PFIRS. CAL FIRE is providing information to PFIRS for all prescribed burns.

Senate Bill 1260, Statutes of 2018

Senate Bill (SB) 1260 was adopted in September 2018 in response to the devastating California wildfires and seeks to address wildfire prevention by increasing the use of prescribed burning as a vegetation treatment tool. SB 1260 directs CAL FIRE to work cooperatively with nonprofits and others on planning and implementing prescribed burning on federally and privately-owned property in the state. Additionally, the bill establishes training standards for personnel authorized to conduct prescribed burns and clarifies liability for landowners operating under a CAL FIRE permit. The bill also mandates that CAL FIRE and CARB, in coordination with local air pollution control and air quality management districts, develop a program to enhance air quality and smoke monitoring and to provide a public awareness campaign regarding prescribed burns. In response, CARB and CAL FIRE have established a joint monitoring program that couples air quality measurements taken near prescribed burns with on-site measurements of short-and long-term effects on fire hazard and ecological characteristics. Additionally, SB 1260 specifically identifies this PIS, when certified, to serve as the programmatic environmental document for prescribed burns initiated by a third party.

Senate Bill 44, Statutes of 2019

In recognition of the value of the 2016 Strategy in relation to the State's ongoing air quality, climate, and community risk reduction challenges, and the ever-evolving vehicle market, the California Legislature passed SB 44,1 signed by Governor Newsom into law on September 20, 2019. SB 44 acknowledges the ongoing need to evaluate opportunities for mobile source emissions reductions and requires CARB to update the strategy every five years. Specifically, SB 44 requires CARB to update the 2016 Strategy to include a comprehensive strategy for the deployment of medium- and heavy-duty vehicles for the purpose of meeting air quality standards and reducing GHG emissions. It also directs CARB to set reasonable and achievable goals for reducing emissions by 2030 and 2050 from medium- and heavy-duty vehicles that are consistent with the State's overall goals and maximizes the reduction of criteria air pollutants.

2020 Mobile Source Strategy

CARB adopts mobile source strategies as part of each SIP submitted to the EPA, as required by the CAA. On October 28, 2021, CARB adopted the updated Mobile Source Strategy, which addresses exhaust emissions from on-road light-duty and heavy-duty vehicles, off-road federal and international sources (i.e., aircraft, locomotives, and ocean-going vessels), and off-road

equipment. The strategy is pertinent to the types of on-road vehicles and off-road equipment that would be used in treatment activity conducted under the Program.

CARB 2020 Mobile Source Strategy (2020 Strategy) uses scenario planning to take an integrated approach to identifying the technology trajectories and programmatic concepts to meet our criteria pollutant, GHG, and TAC reduction goals from mobile sources. The scenarios and concepts included in the 2020 Strategy provide emissions reductions for the purpose of meeting federal ambient air quality standards and substantially reducing GHG emissions from motor vehicles.

For on-road medium- and heavy-duty vehicles, the 2020 Strategy includes the concepts within the following scope to move the State towards the goal that 100 percent of California-registered trucks will be zero-emission vehicle (ZEV) by 2045 where feasible:

- Manufacturer requirements to foster clean technology production and sales;
- In-use requirements to accelerate penetration of newer technology;
- Incentive programs to promote and accelerate the use of advanced clean technologies;
- Enhanced enforcement strategies to ensure programs are achieving their anticipated benefits;
- Outreach and education to increase consumer awareness and acceptance of advanced vehicle and equipment technologies; and
- Infrastructure planning and development to support the transition to cleaner technologies.

For off-road vehicles and equipment, the 2020 Strategy includes the concepts within the following scope to move the State towards the goal that 100 percent of equipment will be zero-emission by 2035 where technologically feasible:

- Manufacturer requirements to foster clean technology production and sales;
- In-use requirements to accelerate penetration of newer technology;
- Incentive programs to promote and accelerate the use of advanced clean technologies;
- Outreach and education to increase consumer awareness and acceptance of advanced vehicle and equipment technologies; and
- Infrastructure planning and development to support the transition to cleaner technologies.

CARB Off-Road Diesel regulation

All self-propelled off-road diesel vehicles 25 horsepower (hp) or greater used in California and most two-engine vehicles (except on-road two-engine sweepers) are subject to the Regulation for In-Use Off-Road Diesel Fueled Fleets (Off-Road regulation). This includes vehicles that are rented or leased.

The overall purpose of the Off-Road regulation is to reduce emissions of oxides of nitrogen (NOx) and particulate matter (PM) from off-road diesel vehicles operating within California. The Off-Road regulation:

- Imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles;
- Requires all vehicles to be reported to CARB (using CARB's online reporting system DOORS) and labeled;
- Restricts the adding of older vehicles into fleets starting on January 1, 2014;

  and
- Requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies, VDECS (i.e., exhaust retrofits).

Section 2449(b) of the Off-Road Regulation provides that all vehicles used exclusively for agricultural operations, including first processing after harvest, are exempt from all requirements in sections 2449, 2449.1, and 2449.2 of the Off-Road Regulation. This means that vehicles used solely for agricultural operations do not need to report, label, or control the emissions from those vehicles under the Off-Road Regulation. Forest operations are included in the definition of agricultural operations defined in section 2449(c)(1).

CARB Portable Equipment Registration Program

The Portable Equipment Registration Program (PERP), which took effect on November 30, 2018, establishes a uniform program to regulate portable engines and portable engine-driven equipment units. Once registered in the PERP, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts, if the equipment is located at a single location for no more than 12 months.

REGIONAL

Monterey Bay Air Resources District

The MBARD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in the Air Basin, where the proposed project is located. The MBARD operates monitoring stations in the Air Basin, develops rules and regulations for stationary sources and equipment, prepares emissions inventory and air quality management planning documents, and conducts source testing and inspections. The MBARD's Air Quality Management Plans (AQMPs) include control measures and strategies to be implemented to attain CAAQS and NAAQS in the Air Basin. The MBARD then implements these control measures as regulations to control or reduce criteria pollutant emissions from stationary sources or equipment.

MBARD Air Quality Management Plan

The 1991 AQMP for the Monterey Bay Area was the first plan prepared in response to the California Clean Air Act of 1988, which established specific planning requirements to meet the O_3 standard. The California Clean Air Act requires that the AQMP be updated every 3 years. The most recent update is the 2012–2015 Air Quality Management Plan (2012–2015 AQMP), which was adopted in March 2017, and is an update to the elements included in the 2012 AQMP. The primary elements updated from the 2012 AQMP are the air quality trends analysis, emission inventory, and mobile source programs.

At the time the 2012-2015 AQMP was written, the Air Basin had been a nonattainment area for the CAAQS for both O_3 and PM_{10}. As of 2025, the air basin continues to be in attainment for all National Ambient Air Quality Standards and non-attainment transitional for CAAQS for both O_3 and PM_{10}. The AQMP addresses only attainment of the O_3 CAAQS. Attainment of the PM_{10} CAAQS is addressed in the MBARD's 2005 Report on Attainment of the California Particulate Matter Standards in the Monterey Bay Region (Particulate Matter Plan), which was adopted in December 2005 and is summarized further below. Maintenance of the 8-hour NAAQS for O_3 is addressed in MBARD's 2007 Federal Maintenance Plan for Maintaining the National Ozone Standard in the Monterey Bay Region (Federal Maintenance Plan), which was adopted in March 2007 and is also summarized below.

The AQMP's emission inventory, a key component of the plan, is an estimate of the amount of ozone precursors emitted into the air each day by man-made (anthropogenic) activities. The inventory represents emissions of reactive organic gas (ROG) and NOx (tons per day) on a typical weekday during the May through October O_3 season. The inventory includes stationary sources, area-wide sources and mobile sources. Stationary sources include typically large facilities such as power plants or cement plants, while area-wide sources include an aggregate of individually smaller sources, which when grouped together have significant emissions such as consumer products or residential fuel consumption. Mobile sources consist of the numerous cars and trucks that travel the streets and highways of the Air Basin, as well as other mobile sources such as off-road agricultural and construction equipment, trains and aircraft (MBARD 2017).

According to the AQMP, 2015 NOx inventory indicates that mobile sources, for which the District has no real authority, account for more than half the inventory (60%) while stationary sources, where the District has the most authority, only accounts for about 21% of the NOx inventory. NOx emission forecasts shows that overall emissions is projected to decline from about 80 tons/day in 2000 to about 30 tons per day in 2035 for a nearly threefold reduction through the period. Reductions in the all-important mobile source sector drive the overall decline.

Unlike NOx emissions which are dominated by mobile source emissions, area-wide sources account for 60% of the inventory with the remainder shared fairly equally between the mobile and Stationary Source categories. Solvent evaporation from pesticides, consumer products and architectural coatings are important contributors to this category. ROG emissions are projected

to decline from about 71 tons/day in 2000 to about 56 tons per day in 2035 for an overall reduction of about 20% through the period. Emissions plateau beyond 2025 due to continued reductions in the Mobile Source category offset by slight increases in the Area-Wide and Stationary Source categories. However, the air basin may meet the ozone standard by then at which point the apparent leveling of the inventory in these future years could become a subject for maintenance planning.

MBARD Federal Maintenance Plan

The Federal Maintenance Plan (May 2007) presents the strategy for maintaining the NAAQS for O_3 in the Air Basin (MBARD 2017). It is an update to an earlier maintenance plan (1994) that was prepared for maintaining the 1-hour NAAQS for O_3 and has since been revoked and superseded by the current 8-hour O_3 standard. Effective June 15, 2004, the EPA designated the Air Basin as an attainment area for the 8-hour NAAQS for O_3. The plan includes an emission inventory for the years 1990 to 2030 for ROG and NOx, the two primary O_3 precursor gases. A contingency plan is included to ensure that any future violation of the standard is promptly corrected (MBARD 2007).

MBARD Particulate Matter Plan

The purpose of the Particulate Matter Plan (December 2005) is to fulfill the requirements of Senate Bill 655, which was approved by the Legislature in 2003 with the objective of reducing public exposure to particulate matter. The legislation requires CARB, in conjunction with local air pollution control districts, to adopt a list of the most readily available, feasible, and cost-effective control measures that could be implemented by air pollution control districts to reduce ambient levels of particulate matter in their air basins (MBARD 2005). The Particulate Matter Plan's proposed activities include control measures for fugitive dust, public education, administrative functions, and continued enhancements to the MBARD's smoke management and emission-reduction incentive programs.

MBARD Rules and Regulations

The MBARD establishes and administers a program of rules and regulations to attain and maintain state and national air quality standards and regulations related to TACs. Rules and regulations that may apply to the proposed Program include the following:

- Regulation IV (Prohibitions), Rule 400 (Visible Emissions). This rule provides limits for visible emissions for sources within the MBARD jurisdiction.
- Regulation IV (Prohibitions), Rule 402 (Nuisances). This rule establishes a prohibition against sources creating public nuisances while operating within the MBARD jurisdiction.
- Regulation IV (Prohibitions), Rule 403 (Particulate Matter). This rule provides particulate matter emissions limits for sources operating within the MBARD jurisdiction.

- Regulation IV (Prohibitions), Rule 438 (Open Outdoor Fires). This rule codifies requirements and standards regarding the use of open outdoor fires within the boundaries of MBARD.
- Rule 207: The District regulates new and modified stationary sources through Rule 207, which incorporates State and federal requirements for new and modified stationary sources as well as District-specific regulations. When net emissions from a new or modified facility exceed State offset thresholds, the increase must be offset, with certain exceptions. The rule also requires application of Best Available Control Technology when a source would emit 25 lb/day or more of volatile organic compounds (VOC) or NOx emissions.

Mass Emissions Thresholds of Significance

The MBARD recommends mass emission thresholds for determining whether a project's emissions of criteria air pollutants and precursors would be significant under CEQA and result in, or contribute to, an increase in the ambient concentrations of criteria pollutants to levels that exceed the NAAQS and/or CAAQS. The following threshold of significance for construction and operational impacts are applicable to the Program:

- VOC or oxides of nitrogen (NOx) new source review offset requirements: Under State regulations, new or modified stationary sources that would emit 137 pounds per day or more of VOC or oxides of nitrogen (NOx) are required to offset their emissions. The District considers these thresholds to determine a project's impact on existing regional air quality.
- PM_{10} and CO new source review offset requirements: The District uses federal offset thresholds for PM_{10} and CO as criteria for significance (82 and 550 lb/day, respectively).
- Construction projects using typical construction equipment such as dump trucks, scrappers, bulldozers, compactors and front-end loaders that temporarily emit precursors of ozone (i.e., VOC or NOx), are accommodated in the emission inventories of State- and federally-required air plans and would not have a significant impact on the attainment and maintenance of ozone AAQS. The District should be consulted regarding emissions from non-typical equipment, e.g., grinders, and portable equipment.
- Other Pollutants: Construction projects which may cause or substantially contribute to the violation of other State or national AAQS or that could emit TACs could result in temporary significant impacts. See Chapter 9 for a discussion of TACs.
- Based on this threshold, Table 5 identifies the level of construction activity that could result in significant temporary impacts if not mitigated. The threshold should be used for screening purposes and does not represent a definitive threshold.

Table 5 Construction Activity with Potentially Significant Impacts (PM_{10})

Activity	Potential Threshold[1]
Construction site with minimal earthmoving	8.1 acres per day
Construction site with earthmoving (grading, excavation)	2.2 acres per day
Note: Based on Midwest Research Institute, Improvement of Specific Emission Factors (1995). Assumes 21.75 working weekdays per month and daily watering of site. Source: Monterey Bay Unified Air Pollution Control District 1996 1Construction projects below the screening level thresholds shown above are assumed to be below the 82 lb/day threshold of significance, while projects with activity levels higher than those above may have a significant impact on air quality. Additional mitigation and analysis of the project impact may be necessary for those construction activities	

LOCAL

County of Santa Cruz General Plan/Local Coastal Program

California Government Code Section 65302(g) requires the development of Safety Elements. The County of Santa Cruz GP/LCP is a comprehensive, long-term planning document for the unincorporated areas of the county and includes the County's GP/LCP, which was certified by the California Coastal Commission in 1994. The County GP/LCP provides policies and programs to establish guidelines for future growth and all types of physical developments. In September 2020, the County Board of Supervisors adopted revisions to the General Plan Public Safety Element. The revisions (all except sections related to coastal bluffs and beaches) were approved by the Coastal Commission in February 2022 subject to County acceptance of modifications. Relevant policies are reviewed in Section 4.3.3.3.

Santa Cruz County Code

To minimize conflicts between agricultural lands and non-agricultural uses (such as odors), SCCC section 16.50.095 requires a 200-foot agricultural buffer setback between habitable uses and land designated as an Agricultural Resource Type in the County GP/LCP. The buffer is measured from the proposed habitable area and/or habitable structure to the property line of the parcel designated as an Agricultural Resource Type. Agricultural buffer reductions can be approved if features are proposed or present that mitigate potential negative impacts to adjacent or surrounding commercial agricultural land. Existing mitigations can include changes in topography, permanent substantial vegetation, or other physical barriers between the agriculture and non-agricultural uses. Proposed mitigations include the establishment of a physical barrier, typically a 6-foot-tall solid wood fence with a vegetative buffer and the

recordation of a Statement of Acknowledgment on the property title which discloses the potential for conflicts between the agricultural and non-agricultural uses.

Odors

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., smells from fast food restaurants). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity. Odor sources of concern include wastewater treatment plants, sanitary landfills, composting facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting operations, rendering plants, and food packaging plants. The odor associated with smoke generated by the burning of vegetative biomass on agricultural lands, forested areas, park and open space lands, and wildlands is also considered to be objectional.

Environmental Setting

The proposed Program is in the NCCAB, which includes the counties of Monterey, San Benito, and Santa Cruz. Air quality in the basin is regulated by the MBARD. The NCCAB is in attainment for all National Ambient Air Quality Standards and non-attainment transitional for CAAQSs for ozone (MBARD 2023). The basin is in non-attainment for airborne particulate matter less than 10 microns in diameter.

The primary sources of ROG within the air basin are on- and off-road motor vehicles, petroleum production and marketing, solvent evaporation, and prescribed burning. The primary sources of NOx are on- and off-road motor vehicles, stationary source fuel combustion, and industrial processes. In 2010, daily emissions of ROGs were estimated at 63 tons per day. Of this, area-wide sources represented 49%, mobile sources represented 36%, and stationary sources represented 15%. Daily emissions of NOx were estimated at 54 tons per day with 69% from mobile sources, 22% from stationary sources, and 9% from area-wide sources. In addition, the region is "NOx sensitive," meaning that ozone formation due to local emissions is more limited by the availability of NOx as opposed to the availability of ROGs (MBUAPCD, 2013b).

PM_{10} is the other major pollutant of concern for the NCCAB. In the NCCAB, highest particulate levels and most frequent violations occur in the coastal corridor. In this area, fugitive dust from various geological and man-made sources combines to exceed the standard. The majority of NCCAB exceedances occur at coastal sites, where sea salt is often the main factor causing exceedance. In 2005 daily emissions of PM_{10} were estimated at 102 tons per day. Of this, entrained road dust represented 35% of all PM_{10} emission, windblown dust 20%, agricultural tilling operations 15%, waste burning 17%, construction 4%, and mobile sources, industrial processes, and other sources made up 9% (MBUAPCD, 2008).

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following standard project requirements (SPRs), as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR AQ-1 Compliance with MBARD regulations
SPR AQ-2 Water Active Treatment Areas in Dry or Windy Conditions: All active construction areas will be watered, as necessary and indicated by soil and air conditions.
SPR AQ-3 Sweep Paved Roads: All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers, or other appropriate methods. at least once per day. The use of dry power sweeping is prohibited.
SPR AQ-4 Cover or Stabilize Disturbed or Inactive Areas: All disturbed areas, including staging areas and temporary access roads, which are not being actively utilized for project implementation purposes, will be effectively stabilized for dust emissions using water, chemical stabilizer/suppressant, covered with a tarp/ visqueen or other suitable protection measures.
SPR AQ-5 Restrict Work During High Winds: Prohibit all grading activities during periods of high wind (over 15 mph).
SPR AQ-6 Limit Driving Speeds: All vehicle speeds on unpaved roads will be limited to 15 mph.

SPR BIOM-2 Smoke Management Plan for All Burns: Unless an exemption (e.g. for very small cultural burn demonstrations) is negotiated at least a week in advance with MBARD, all prescribed burns within the Program Area will have a Smoke Management Plan (SMP) developed for them and approved by MBARD before implementation. As part of burn planning, managers will coordinate prescribed burns with MBARD staff in order to choose the optimal conditions with which to burn in order to generate minimal smoke impacts to the community.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
The significance criteria established by the Monterey Bay Air Resources District (MBARD)[1] has been relied upon to make the following determinations. Would the project:				
Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐

***Discussion*: Less than Significant**. Santa Cruz County is located within the NCCAB, which is currently designated as nonattainment for state standards for ozone (ROGs and NOx) and fine particulate matter (PM_{10}). As such, the primary regional pollutants of concern associated with the project are ozone precursors and PM_{10}. General estimated basin-wide construction-related emissions are included in the MBARD emission inventory (which, in part, form the basis for the air quality plans cited below) and are not expected to prevent long-term attainment or maintenance of the ozone and particulate matter standards within the NCCAB. If covered program activities exceeds emission standards for ozone, nitrogen oxides, and fine particular matter, the Program would conflict with or obstruct implementation of applicable air quality plan, indicating a potentially significant impact.

Implementation of Treatment Activities

Project implementation may result in a short term, localized decrease in air quality due to generation of PM_{10} from fugitive dust and off-road vehicles traveling on unpaved roads. However, implementation of treatment activities would involve little to no earthmoving and minimal ground disturbance. The amount of work will be below the MBARD screening threshold of 8.1 acres per day described in the regulatory setting section above. Because the proposed activities—such as fuel reduction and invasive species removal—are operational in nature and involve limited surface disturbance, the 8.1-acre threshold may not be directly applicable. Nonetheless, PM_{10} emissions from Program activities are estimated to remain below 82 pounds per day, and impacts related to fugitive dust and equipment-generated PM_{10} are anticipated to be less than significant.

Increased emissions of reactive organic gases (ROG) and NOx from off-road vehicles and worker commute trips may occur but are expected to be minimal. The number of vehicle trips

[1] Formerly known as the Monterey Bay Unified Air Pollution Control District (MBUAPCD).

generated from worker commutes or off-hauling biomass would be limited and will be well below the threshold of 110 trips per day.[2] Therefore, the impacts from worker commute emissions and off-hauling trucks are also expected to be less than significant.

Smoke from prescribed burns could emit fine particulate matter ($PM_{2.5}$ and PM_{10}), potentially affecting local air quality. However, prescribed burning is regulated by MBARD in accordance with the State Smoke Management Plan (Title 17, California Code of Regulations). A Smoke Management Plan (SPR BIOM-2) must be submitted to MBARD for review and approval prior to conducting any prescribed fire. Burning is restricted to approved burn days as designated by MBARD. Additionally, the Program may utilize air curtain incinerators, which produce significantly less smoke than traditional pile burning. These devices comply with federal air quality standards (40 CFR 60 Subpart CCCC), further reducing the risk of smoke-related public health impacts.

A primary goal of the Program is to reduce fuel loads, which will decrease wildfire smoke and offset impacts from pile burning. Prescribed fires typically produce 80% less smoke per unit burned than wildfires (National Prescribed Fire Act of 2020). By removing fuel through prescribed burns or mechanical methods, the Program would reduce the potential for future wildfire smoke.

Finally, no new traffic would be generated by the Program, as it does not propose any new development. There is no indication that emissions of ROGs or NOx would exceed MBARD's thresholds. Therefore, the Program is not expected to contribute significantly to any existing air quality violations.

Although not a mitigation measure per se (i.e., required by law), California ultralow sulfur diesel fuel with a maximum sulfur content of 15 ppm by weight will be used in all diesel-powered equipment, which minimizes SO_2 and particulate matter.

The following BMPs will be implemented during all site excavation and grading.

Recommended Measures

- No mitigation is required. However, MBARD recommends the use of the following BMPs for the control of short-term construction generated emissions: Water all active construction areas at least twice daily as necessary and indicated by soil and air conditions.
- Prohibit all grading during periods of high wind (over 15 mph).
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days)

[2] The Office of Planning and Research identifies a screening threshold for a small land-use project as a project that generates or attracts fewer than 110 trips per day. Projects that generate fewer than this threshold may be assumed to cause a less-than-significant transportation impact (OPR, 2018). Although a vegetation treatment project is not a land use project, it is assumed that the screening threshold would still apply to the proposed project.

- Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed areas.
- Haul trucks shall maintain at least 2' 0" freeboard.
- Cover all trucks hauling soil, sand, and other loose materials.
- Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land.
- Plant vegetative ground cover in disturbed areas as quickly as possible.
- Cover inactive storage piles.
- Install wheel washers at the entrance to construction sites for all existing trucks.
- Pave all roads on construction sites.
- Sweep streets, if visible soil material is carried out from the construction site.
- Post a publicly visible sigh which specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and corrective action within 48 hours. The phone number of the MBARD shall be visible to ensure compliance with Rule 402 (Nuisance),
- Limit the area under construction at any one time.

Implementation of the above recommended BMPs and SPR AQ-1 through 6 for the control of project implementation-related emissions would further reduce particulate emissions. These measures are not required by MBARD or as mitigation measures, as the impact would be less than significant without mitigation. These types of measures are commonly included as conditions of approval associated with development permits approved by the County.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*	☐	☐	☒	☐

***Discussion*: Less than Significant**. primary pollutants of concern for the NCCAB are ozone and PM_{10}, as those are the pollutants for which the district is in nonattainment. Program implementation would have a limited and temporary potential to contribute to existing violations of national and California air quality standards for ozone and PM_{10} primarily through diesel engine exhaust and fugitive dust. The criteria for assessing cumulative impacts on localized air quality are the same as those for assessing individual project impacts. Projects that do not exceed MBARD's construction or operational thresholds and are consistent with the AQMP would not have cumulatively considerable impacts on regional air quality

(MBARD, 2008). Because the project would not exceed MBARD's thresholds and is consistent with the AQMP, there would not be cumulative impacts on regional air quality.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

***Discussion*:** Less than Significant. Sensitive receptors include individuals who are more vulnerable to the health effects of air pollution, such as children, the elderly, asthmatics, and others with existing respiratory conditions. Locations where these individuals commonly congregate—referred to as sensitive receptor locations—may include schools, day care centers, and hospitals, as well as other facilities identified by the local air district or the California Air Resources Board (California Health and Safety Code § 42705.5(a)(5)).

Within the Program Area, identified sensitive receptor locations include several schools in Aptos and Freedom, such as Aptos Junior High School, St. Andrews Co-op Preschool, Aptos High School, Freedom Schoolhouse and Farm, and Rose Blossom Preschool. Although there are no hospitals within the Program Area, the nearest hospital—Watsonville Community Hospital—is located approximately 0.43 miles southeast of the Program Area boundary.

Proposed Program activities involve the use of heavy equipment near some of these sensitive receptor locations. Fuel reduction operations will generate diesel particulate matter (DPM) and criteria air pollutants—both of which include suspected carcinogens and respiratory irritants that may adversely affect sensitive populations. However, these activities are short-term and intermittent. On a typical day, operations may include worker trucks, chainsaws, a light-duty tractor, a chipper, and mechanical hand tools running for up to ten hours per crew. Biomass off-haul trucks would travel to and from designated green waste or biomass processing facilities. Vegetation removal activities are anticipated to occur for no more than 24 weeks per year.

Assuming a 10-year duration for Program implementation, the total exposure period would represent less than 7% of the 70-year exposure timeframe typically used to evaluate long-term public health risks from air pollutant emissions (MBUAPCD, 2008).

Furthermore, the Program incorporates Standard Project Requirements (SPRs) AQ-1 through AQ-6, which are designed to reduce emissions of criteria pollutants and DPM from equipment use, worker commutes, and biomass transportation. SPR BIOM-2 requires the development of a smoke management plan to minimize emissions during pile burning, if such activity is conducted. With the implementation of SPRs, impact is expected to be less than significant, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Discussion: **Less than Significant**. The Program will not result in emissions other than smoke generated by pile burning, vehicle exhaust, and mechanical equipment discussed in question C(1)-(3) above.

During treatment activities, only short-term, temporary odors from vehicle exhaust and mechanical equipment engines would occur. California ultralow sulfur diesel fuel with a maximum sulfur content of 15 ppm by weight would be used in all diesel-powered equipment, which minimizes emissions of sulfurous gases (SO_2, hydrogen sulfide, carbon disulfide, and carbonyl sulfide). Implementation of SPR BIOM-2 would reduce potential impact from pile burning to less than significant. No long-term impact would occur.

The project would not create objectionable odors affecting a substantial number of people; therefore, the project is not expected to result in significant impacts related to objectionable odors during construction or operation.

Cumulative impacts. As discussed in question 2. Above, the cumulative air quality impacts of the program are expected to be less than significant with compliance with relevant federal, state, and local regulations.

D. Biological Resources

Regulatory setting

FEDERAL

Federal Endangered Species Act

The provisions of the federal Endangered Species Act (ESA) of 1973 (Title 16 United States Code, Section 1531 et seq., as amended) protect federally-listed Threatened and Endangered species and their habitats from unlawful "take." Activities that may result in "take" are regulated by the USFWS for terrestrial federally-listed species. Listed species are taxa for which proposed and final rules have been published in Federal Register (USFWS 2025a, 2025b). Candidate species are not afforded any legal protection under the federal ESA but typically receive special attention from federal and state agencies during the environmental review process (USFWS 2025c).

The federal ESA or its implementing regulations do not prohibit take of listed plant species. However, federal agencies cannot undertake activities that would jeopardize the continued existence of a threatened or endangered plant. In addition, the removal of threatened or

endangered plants may be a violation of the federal ESA under certain circumstances, if the action is not in compliance with state law.

For projects with federal involvement (i.e., funded, authorized, or carried out by a Federal agency), permits for "take" may be obtained through coordination and interagency consultation with the USFWS pursuant to Section 7. Designated "Critical Habitat" for plants or animals, determined and published in the Federal Register as a formal rule, also receives protection under Section 7 of the ESA. For actions with no federal nexus, consultation with USFWS takes place under 10(a)(1)(B) of the federal ESA.

Migratory Bird Treaty Act

All migratory birds and their nests are federally protected under the Migratory Bird Treaty Act of 1918 (MBTA) (Title 16 United States Code, Section 703-712 as amended; 50 Code of Federal Regulations Section 21; and 50 CFR Section 13) (and by California Department of Fish and Game Code provisions that support the act). The MBTA makes it unlawful to "take" any migratory bird or raptor listed in the 50 CFR Section 10, including their nests, eggs, or products.

Birds of Conservation Concern

The USFWS Birds of Conservation Concern (BCC) (USFWS 2021) was developed to fulfill the mandate of the 1988 amendment to the Fish and Wildlife Conservation Act [Public Law 100-653 (102 Statute 3825)] to protect migratory nongame birds that without additional conservation action are likely to become candidates for listing under the ESA. The overall goal is to identify those bird taxa (beyond those already designated as federally threatened or endangered) that represent the highest conservation priorities of the USFWS in order to stimulate coordinated, collaborative and proactive conservation actions. Factors considered include: population size, breeding and non-breeding distribution, threats, population trends, relative density (USFWS 2021). These species typically meet the criteria of the CEQA Guidelines and are considered during environmental review.

Bald and Gold Eagle Protection Act

The Bald and Gold Eagle Protection Act of 1940 (16 U.S.C. 668-668d, 54 Stat. 250) as amended, provides for the protection of the bald eagle and the golden eagle by prohibiting the taking, possession, and commerce of such birds, their eggs, and their nests except under certain specified conditions. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

Executive Order 13112 - Invasive Species

This order enlists federal agencies to prevent the introduction of invasive species, provide for their control and minimize the economic, ecological, and human health impacts that invasive species cause. In addition, federal agencies are required, when feasible, to restore native species and ecosystems and promote public awareness about invasive species.

Wetlands and Waters of the U.S.

Wetlands are defined by the USACE as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (EPA, 40 CFR 230.3, and CE 33 CFR 328.3).

The USACE uses three criteria to delineate wetlands: the presence of (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the USACE Manual, evidence of at least one positive wetland indicator from each parameter must be found in order to make a positive determination.

Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation, such as lakes and ponds, or convey water, such as streams, are considered "other waters." Along the central California coast, these other waters can include intermittent and ephemeral streams, as well as lakes and rivers. Other waters are identified by the presence of an ordinary high-water mark , a defined river or stream bed or bank, or by the absence of emergent vegetation in ponds or lakes.

Wetlands and other waters of the U.S., including streams, ponds and lakes, are regulated by the USACE and the Regional Water Quality Control Board (Regional Board) under Sections 401 and 404 of the Clean Water Act.

Clean Water Act

Federal Clean Water Act (Section 404). Under Section 404 of the Clean Water Act, the USACE is responsible for regulating the discharge of fill material into waters of the U.S. The term "waters" includes wetlands and other waters that meet specific criteria as defined in the CFR (EPA, 40 CFR 230.3, and CE 33 CFR 328.3). In general, a permit must be obtained before fill can be placed in wetlands or other waters of the U.S. The type of permit depends on the amount of acreage and the purpose of the proposed fill, subject to the discretion of the USACE.

Federal Clean Water Act (Section 401). Section 401 of the Clean Water Act (CWA) assigns overall responsibility for water quality protection to the State Water Resource Control Board and directs the nine statewide Regional Boards to develop and enforce water quality standards within their boundaries. A 401 Certification is required from the Regional Board whenever improvements are made within Jurisdictional Waters of the U.S.

Executive Order 11990

Executive Order 11990. Executive Order 11990 (42 FR 26961, 3 CFR, 1977 Comp., p. 121) mandates that federal or federally assisted projects and programs minimize the destruction, loss, or degradation of wetlands and avoid new construction in wetlands, accounting for public health and safety, maintenance of natural systems, and other public interests.

STATE

California Environmental Quality Act (CEQA)

Based on provisions of Section 15380 of the CEQA Guidelines, plants and animals with the following protected status are addressed in CEQA documents for proposed projects: federally-listed Endangered or Threatened species under the FESA, federal Proposed and Candidate species, and species listed by the state of California as Endangered, Threatened, or Rare under the California Endangered Species Act (CESA) or California Native Plant Protection Act (NPPA).

In addition, under Section 15380(d) of the CEQA Guidelines, a species not included on any list recognized by the state "shall nevertheless be considered rare or endangered if the species can be shown to meet the criteria" for listing. The CDFW, USFWS, as well as non-governmental organizations maintain independent lists of species with designated conservation status that meet the CEQA Guidelines criteria for consideration. Based on provisions of Section 15380(d) of the CEQA Guidelines, lead agencies, in making a determination of impact significance, typically treat non-listed plant and animal species as equivalent to listed species if the non-listed species satisfy the minimum biological criteria for listing. In assigning "impact significance" to populations of non-listed species, analysts generally consider factors such as population-level effects, proportion of the taxon's range affected by a project, regional effects, and impacts to habitat features. CDFW recommends considering these species during analysis of proposed project impacts to protect declining populations, and to avoid the need to list them as threatened or endangered in the future. The CEQA Guidelines direct lead agencies to consider impacts of the proposed project on individual animals, communities, populations, range, and habitat of species that meet the CEQA criteria.

The CEQA Guidelines also direct project proponents to assess and mitigate for impacts to sensitive natural communities identified in local or regional plans, policies, regulations or identified by CDFW or USFWS, including wetlands.

In addition, the CEQA Guidelines include consideration of substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or the use of native wildlife nursery sites.

Finally, CEQA requires that local policies or ordinances protecting biological resources, Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plan be considered during environmental review.

California Endangered Species Act

The California Endangered Species Act (CESA) protects native plant and animal species (and their habitats) "in danger of, or threatened with, extinction because their habitats are threatened with destruction, adverse modification, or severe curtailment, or because of overexploitation, disease, predation, or other factors" (California Fish and Game Code [CFGC] 1984, Section 2050-2116). The CESA prohibits the "take" of state-listed endangered, threatened, and candidate species. The CDFW maintains lists of Endangered, Threatened, and Rare plants (CDFW 2023a) and Endangered and Threatened animals (CDFW 2023b), as designated by the California Fish and Game Commission and under the California Native Plant Protection Act (NPPA)(1977). The Habitat Conservation Planning Branch of CDFW administers the state's rare species program. In addition to recognizing three levels of endangerment, CDFW can afford interim protection to candidate species while the California Fish and Game Commission reviews them. Habitat degradation or modification is not expressly included in the definition of "take" under the CFGC, but CDFW has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification."

California Native Plant Protection Act

The California NPPA (CFGC Section 1900 - 1913) was enacted in 1977 and allows the California Fish and Game Commission to designate plants as rare or endangered. The NPPA limits the circumstances in which endangered or rare native plants may be taken. Project permitting and approval requires compliance with NPPA.

California Native Plant Society Inventory

The CNPS prepares and regularly updates an Inventory of Rare and Endangered Vascular Plants of California. In general, CDFW qualifies for legal protection under CEQA those plant species with a California Rare Plant Rank (CRPR) of List 1A (Plants Presumed Extinct in California), List 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere) or List 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere) of the CNPS Inventory (CNPS 2005, 2023). Species on CNPS List 3 (Plants About Which We Need More Information--A Review List), or List 4 (Plants of Limited Distribution--A Watch List) are considered to be of lower sensitivity, and generally do not fall under specific federal or state regulatory authority. Specific mitigation considerations are not generally required for species in these two categories.

Species of Special Concern

The CDFW maintains a list of animal "Species of Special Concern," most of which are species whose breeding populations in California may face complete destruction or extirpation (Bolster 1998, Shuford and Gardali 2008, Moyle et al. 2015, Thompson et al. 2016, CDFW 2023c, CDFW CNDDB 2023). Although these species have no legal status under the CESA, CDFW recommends considering these species during analysis of proposed project impacts to

protect declining populations, and to avoid the need to list them as threatened or endangered in the future. These species may "be considered rare or endangered [under CEQA] if the species can be shown to meet the criteria."

California Fish and Game Code and California Code of Regulations

California Fish and Game Code (CFGC) protects the active nests and eggs of birds from take, possession, or needless destruction (3503), and prohibits the take, possession, or destruction birds of prey (orders Falcinoformes and Strigiformes) and their eggs and nests (3503.5). The CFGC (Sections 86; 2000; 2002; 2014; 3000-3012; 4150) and several sections under Title 14 of CCR protect non-listed bat species and their roosting habitat, including individual roosts and maternity colonies (14 CCR Section 472). Section 86 of CFGC generally defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Other CFGC sections prohibit the willful take, capture, confinement, possession, or destruction of particular wildlife species, including bats and other non-game mammals. The CCR Title 14 provisions prohibit the take of nongame birds and mammals.

Fully Protected Species

The CFGC contains lists of vertebrate species designated as "Fully Protected" (CFGC 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], and 5515 [fish]). This classification was the state's initial effort in the 1960's to identify and provide protection to those animals that were rare or faced possible extinction. Fully Protected species generally may not be taken or possessed at any time and no licenses or permits may be issued for their take except pursuant to an approved Natural Community Conservation Plan (NCCP) or for relocation of bird species, the protection of livestock, or the collection of those species necessary for scientific research. Impacts on these species are also considered under CEQA.

Western Bat Working Group Lists

The WBWG maintains a region-by-region matrix of the status of bat species throughout their western North American range. Bats that are designated as "High Priority" by the WBWG are "imperiled or are at high risk of imperilment" based on available information on distribution, status, ecology, and known threats (WBWG 2017). Bats may also be designated as medium-or low-priority. High Priority bat species qualify for legal protection under Section 15380(d) of the CEQA Guidelines.

Sensitive Habitats

Sensitive habitats include CDFW Sensitive Natural Communities (rank of S1 – S3), riparian corridors, wetlands, and habitats for species that are protected under FESA, CESA, NPPA, or other rare species (CDFW 2023d). Sensitive habitats may also include areas of high biological diversity, areas providing important wildlife habitat, and vegetation types that are rare or unique to the region. CEQA also considers impacts to natural communities identified as sensitive in local and regional plans, regulations, and ordinances.

Wetlands and Waters of the State

CDFW Lake and Streambed Alteration Agreement. Jurisdictional authority of CDFW over relatively permanent bodies of standing or flowing water is established under Sections 1600-1616 of the CFGC, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The CFGC stipulates that "an entity may not substantially divert or obstruct the natural flow of, or substantially change…the bed, channel, or bank of, any river, stream, or lake" without notifying CDFW, incorporating necessary mitigation, and obtaining a Lake and Streambed Alteration Agreement. Any work which takes place below the break in bank or within the adjacent riparian canopy would be under the jurisdictional authority of CDFW.

CDFW has the opportunity to review projects and issue project conditions under CEQA and is also responsible for commenting on projects requiring USACE permits under the Fish and Wildlife Coordination Act of 1958. Federal lead agencies may also elect to notify CDFW according to Section 1602 and comply with the conditions and recommendations issued under this mechanism.

Porter Cologne Water Quality Control Act

The Porter-Cologne Water Quality Act assigns overall responsibility for water quality protection to the State Water Resources Control Board (SWRCB), and directs the nine statewide Regional Boards, who are tasked to develop and enforce water quality standards within their boundaries (SWRCB 2023). Under California state law, "Waters of the State" pertains to "any surface water or groundwater, including saline waters, within the boundaries of the state." As a result, water quality laws and permitting authority apply to both surface and groundwater. In the absence of a federal permit requirement, impacts to waters of the state, including wetlands, require a Waste Discharge Requirement (WDR) authorization from the Regional Board (SWRCB 2023).

LOCAL

Santa Cruz County General Plan

The Santa Cruz County General Plan (2024) provides goals, objectives and policies to protect biological resources. Chapter 5 Agriculture, Natural Resources, and Conservation Element (ARC), Goal ARC 3 Biological Resources Protection identifies the goal to "protect and restore biological resources, including unique, rare, threatened, and endangered plant and animal species and their habitats, that warrant preservation because of their biological and scientific values, contributions to open space, and importance in maintaining a healthy environment and mitigating the effects of climate change". The subsequent objectives and policies include (but are not limited to) the protection of biological diversity; restoration of sensitive habitats; preservation, protection, and restoration of riparian corridors and wetlands; and watershed, surface water and groundwater protection.

Santa Cruz County Sensitive Habitat Protection Ordinance

The County of Santa Cruz Sensitive Habitat Protection ordinance (§ 16.32) is intended to "minimize the disturbance of biotic communities which are rare or especially valuable because of their special nature or role in an ecosystem, and which could be easily disturbed or degraded by human activity." Sensitive habitats under the Santa Cruz County Code relevant to this Program include the following:

(1) Areas of special biological significance as identified by the State Water Resources Control Board.

(2) Areas which provide habitat for locally unique biotic species/communities including but not limited to: oak woodlands, coastal scrub, maritime chaparral…and special forests including San Andreas Oak Woodlands.

(3) Areas adjacent to essential habitats of rare, endangered or threatened species as defined in subsections (5) and (6) of this definition.

(4) Areas which provide habitat for species of special concern as listed by the California Department of Fish and Game in the special animals list, natural diversity database.

(5) Areas which provide habitat for rare or endangered species which meet the definition of Section 15380 of the California Environmental Quality Act guidelines.

(6) Areas which provide habitat for rare, endangered or threatened species as designated by the State Fish and Game Commission, United States Fish and Wildlife Service or California Native Plant Society…

(9) All lakes, wetlands, estuaries, lagoons, streams and rivers.

(10) Riparian corridors.

A biotic approval is required for any development activity within sensitive habitats. The project is required to mitigate any significant environmental impacts, protect sensitive habitats "undisturbed by the proposed development activity", and/or restore degraded sensitive habitats "commensurate with the scale of the proposed development". Additionally, specific protections for SCLTS, maritime chaparral, and San Andreas oak woodland are identified in the ordinance in §16.32.090. Exceptions are granted for restoration or to protect public health, safety, or welfare for sensitive habitats; however, exceptions for SCLTS essential habitat can only be granted through interagency coordination and approvals from the County, CDFW, and USFWS. Payment of a fee is also required for exceptions in SCLTS essential habitat.

Santa Cruz County Riparian Corridor and Wetlands Protection Ordinance

The County of Santa Cruz Riparian Corridor and Wetlands Protection Ordinance (§16.30) limits development activities in riparian and wetland areas and provides buffer/setback requirements based on the seasonality of the feature (i.e. perennial vs. intermittent vs. ephemeral), slope and vegetation composition. The Santa Cruz County Planning Commission

may authorize a riparian setback exception on a case-by-case basis. Exceptions are granted pending an approved application stating the applicant's proposed activities, best management practices (BMPs), and measures for mitigating impacts to the riparian corridor. Prior to approval of an exception, the Zoning Administrator must make a series of findings identified in §16.30.060 of the code and is likely to require conditions for granting of the exception to ensure that the project complies with the purpose of the ordinance:

(1) That there are special circumstances or conditions affecting the property;

(2) That the exception is necessary for the proper design and function of some permitted or existing activity on the property;

(3) That the granting of the exception will not be detrimental to the public welfare or injurious to other property downstream or in the area in which the project is located;

(4) That the granting of the exception, in the Coastal Zone, will not reduce or adversely impact the riparian corridor, and there is no feasible less environmentally damaging alternative; and

(5) That the granting of the exception is in accordance with the purpose of this chapter, and with the objectives of the General Plan and elements thereof, and the Local Coastal Program Land Use Plan.

Typically, protective measures that prevent degradation of aquatic features are required, including erosion and sediment control measures and water quality protection measures.

Environmental Setting

The Program Area encompasses a diverse mosaic of upland, riparian, wetland, and aquatic habitats within southern Santa Cruz County. The biological setting of the Program Area reflects a landscape where non-native eucalyptus groves are interspersed among, and often adjacent to, high-value native habitats that support sensitive species and ecological connectivity. Due to variability in topography, soils, hydrology, microclimate, and land use history, biological resources within the Program Area are heterogeneous and support a wide range of native plant communities and wildlife species. Habitat descriptions and species evaluations summarized below are based on program-level biological surveys and analyses conducted by EcoSystems West and are intended to characterize baseline conditions for CEQA review. Detailed habitat mapping, sensitive species evaluations, and occurrence potential analyses are provided in Attachment B, Biotic Assessment.

Methodology

The analysis below is based on the biotic assessment prepared by Ecosystems West in April 2025 for this Program.

To identify biological resources that could be affected by the Program, biologists conducted a comprehensive review of regional literature, fine-scale vegetation mapping, and multiple special-status species databases, including the California Natural Diversity Database (CNDDB),

Biogeographic Information and Observation System (BIOS), California Native Plant Society (CNPS) Online Inventory, USFWS species listings and Birds of Conservation Concern, CDFW Special Status Species lists, and additional taxon-specific sources such as Bat Conservation International, Western Bat Working Group, CalFish, and eBird. Consistent with CEQA Guidelines, all special-status plants and wildlife species known from the region or with potential habitat in the Program Area were screened using soils, vegetation types, habitat conditions, occurrence records, and professional knowledge of local species ecology. Species determined to have no potential to occur were eliminated, and only those with confirmed presence or reasonable potential to occur were carried forward for detailed impact analysis and mitigation.

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the standard project requirements (SPRs) summarized below, any other applicable SPRs listed elsewhere in this document, and BMPs listed in the biotic assessment prepared for this Program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances. See Attachment A for detailed description of the SPRs summarized below.

SPR EM-1 Minimize Ground Disturbance and Vegetation Removal: Disturbance to existing grades and vegetation will be limited to the actual site of the treatment area and necessary access routes. Existing access routes and staging areas should be utilized as much as possible. In areas where new staging areas must be created, the size of the staging area including access roads will be less than 0.25 acres.

SPR EM-2 Minimize Disturbance to Native Vegetation: Disturbance of native shrubs, woody perennials or tree removal on the streambank or stream channel will be avoided or minimized to the fullest possible extent.

SPR EM-3 Avoid Thinning of Riparian Stands: As much as possible, project activities will avoid thinning out stands of riparian vegetation to minimize potential for increased cowbird predation and minimize loss of canopy cover. If riparian vegetation will be disturbed, it will be replaced with similar and/or native riparian species. Riparian vegetation will be cleared by hand, leaving as much as possible of the root wad and base of native plants intact.

SPR EM-4 Wetland Delineations: If potential wetlands are identified in the project area, wetland delineation, consistent with procedures outlined by the U.S. Army Corps of Engineers will be performed during the site evaluation stage of planning to assist in avoiding impacts to wetlands.

SPR VEG-1 Monitor Baseline Conditions for Non-Native Plants: Significant infestations of invasive plant species (i.e., those rated as invasive by Cal-IPC or designated as noxious weeds by California Department of Food and Agriculture) will be identified during reconnaissance-level surveys and targeted for removal during treatment activities. Treatment methods will be selected based on the invasive species present and may include herbicide application, manual or mechanical treatments, prescribed burning, and/or herbivory, and will be designed to maximize success in killing or removing the invasive plants and preventing

reestablishment based on the life history characteristics of the invasive plant species present. Treatments will be focused on removing invasive plant species that cause ecological harm to native vegetation types, especially those that can alter fire cycles.

SPR VEG-2 Monitor Baseline Conditions for -Native Plants: If native vegetation is disturbed during project implementation, the native plant community will be restored to pre-construction condition or better. Native plants characteristic of the local habitat type will be the preferred alternative for revegetation, however temporary erosion control seed (i.e. common barley) can be used, as well.

SPR VEG-3 Restore Project Area to Pre- Construction Condition or Better: On completion of work, site contours will be returned to preconstruction conditions or designed to provide increased biological and hydrological functions. Where disturbed, topsoil will be conserved for reuse during restoration, to the extent practicable. See Attachment A for detailed description of this SPR.

SPR VEG-4 Restore Project Area with Native Plant Communities: Prepare project-level restoration plan guided by Restoration Program Guidelines (Attachment D) and in coordination with the RCD, the County, and CDFW. See Attachment A for detailed description of this SPR.

SPR VEG-5 Prevent Use of Contaminated Plant Materials: Plant materials used for revegetation should be grown using phytosanitary BMPs to protect against introduction of Phytophthora ramorum (the pathogen that causes sudden oak death). Plants and seeds used in revegetation should not have been treated with neonicotinoids or other persistent insecticides that can kill or harm insects at the project site. Native plant materials that are grown at or delivered from a nursery will be closely inspected for disease and pests prior to use.

SPR VEG-6 Prevent Spread of Plant Pathogens: When working in sensitive natural communities, riparian habitats, or oak woodlands that are at risk from plant pathogens, the following measures should be taken: Clean and sanitize vehicles, equipment, footwear, and clothing; minimize soil disturbance; minimize soil and plant material movement; and clean soil and debris from equipment and sanitize tools. See Attachment A for detailed description of this SPR.

SPR VEG-7 Prevent Spread of Disease: Disease host species, or disease infected trees should only be chipped back into areas where infected or host species are already present to avoid and minimize the risk of spreading disease. Diseased material of any kind i.e., firewood, logs, or lumber should not be transported off the Project without observing the requirements for transport of material within a quarantine area or zone of infestation.

SPR VEG-8 Treat Invasive Plants Prior to Seeding Activities: Seeding Activities will be scheduled to maximize the effectiveness of control efforts and minimize introduction and spread of invasive plants as feasible, with consideration for project objectives and location. Equipment will be staged in areas free of invasive plant infestations unless there are no uninfested areas present within a reasonable proximity to the treatment areas.

SPR VEG-9 Prevent Spread of Invasive Species: For all heavy equipment and vehicles traveling off road, pressure wash, if feasible, or otherwise appropriately decontaminate equipment at a designated weed-cleaning station prior to entering the treatment area from an area with infestations of invasive plants, noxious weeds, or invasive wildlife. Anti-fungal wash agents will be specified if the equipment has been exposed to any pathogen that could affect native species. Invasive species should only be masticated or chipped back into areas where non-native species are already present to avoid and minimize the risk of spreading invasive species.

SPR VEG-10 Monitor Revegetation and Non-native Cover: Inspections for the purpose of assessing the survival and growth of revegetated areas and the presence of exposed soil will be conducted by the RCD until vegetation is established and the project is functioning as intended, and success criteria have been met. Revegetation success will be documented in the Annual Report provided to the County and participating agencies each year. If the status reviews reveal that the vegetative plantings are not becoming well established an adaptive management plan that provides erosion control and habitat value at least equivalent to that which existed on the site prior to the project, and which considers cost and feasibility, will be implemented. See Attachment A for detailed description of this SPR.

SPR VEG-11 Completing Revegetation Requirements: All exclusion netting/caging placed around plantings; irrigation lines and other materials will be removed after 2 years or sooner.

SPR BIO-1 Protect Sensitive Habitats. If sensitive habitat is in or adjacent to the work area and/or will be used for staging/access, qualified biologist will assess potential impacts to sensitive habitats. The Program would avoid permanent impacts (tree removal/clearing/grubbing/ ground disturbance/earth movement) to the extent feasible, minimize the footprint and protect sensitive habitats during work, which may include ESA fencing.

SPR BIO-2 Protect Aquatic Features/Associated Riparian. A USFWS/CDFW-approved biologist will assess potential impact to aquatic features and associated riparian within the Program Area. When the Project Area is within 50 meters of aquatic habitat, a USFWS/CDFW-approved biologist or approved biological monitor will be present during all activities. When the Project Area is within 200 meters, a USFWS/CDFW-approved biologist or approved biological monitor will conduct a morning site check each day. Work will not be conducted during the rainy season.

SPR BIO-3 Protect Sensitive Plant Species. If suitable habitat for sensitive plant species is adjacent to work area and/or will be used for staging/access, the qualified biologist will conduct a rare plant survey and implement salvage measures that are appropriate for the specific plant. The Program will avoid impacts to sensitive plant species if feasible. If not, the Program will minimize the disturbance footprint and implement salvage measures that are appropriate to the species. See full description of the SPR in Attachment A.

SPR BIO-4 Protect Sensitive Wildlife. For all Program activities, a qualified biologist shall review proposed work areas and adjacent habitats to identify suitable habitat for special-status fish, amphibians, reptiles, birds, bats, and mammals, conduct any necessary pre-activity surveys, and prescribe appropriate avoidance and minimization measures (e.g., no-work buffers, seasonal timing restrictions, relocation under agency authorization, and erosion/sediment/water-quality controls). If special-status species, nests, roosts, or occupied burrows/houses are detected, the biologist shall coordinate with the appropriate resource agencies (e.g., CDFW, USFWS, NMFS) and implement protective measures so that direct and indirect impacts to special-status species and their habitats are avoided or minimized to the maximum extent feasible.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1. *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, or U.S. Fish and Wildlife Service?*	☐	☒	☐	☐

***Discussion*:**

Sensitive Plant Species

Less than Significant with Mitigation. A literature review and queries of relevant biological databases (e.g. CNDDB, BIOS, CNPS Inventory) were conducted to identify all sensitive plant species known from the region or with potential habitat in the vicinity of the Program Area. Using soils, vegetation and habitat types, proximity to known occurrences, and professional knowledge of regional floristics, twenty-five sensitive plant species with potential to occur were identified to be present or to have the potential to occur within the program area. The majority of these plant species are not likely to be found within the eucalyptus stands proposed for removal. Sensitive plant species that are present or have moderate to high potential to occur within the Program Area include: Santa Cruz manzanita (*Arctostaphylos andersonii*), Hooker's manzanita (*Arctostaphylos hookeri ssp. Hookeri*), Pajaro manzanita (*Arctostaphylos pajaroensis*), Monterey ceanothus (*Ceanothus rigidus*), Monterey spineflower (*Chorizanthe pungen var. pungens*), robust spineflower (*Chorizanthe robusta var. robusta*), California bottle-brush grass (*Elymus californicus*), Santa Cruz tarplant (*Holocarpha macradenia*), small-leaved lomatium (*Lomatium parvifolium*), Gairdner's yampah (*Perideridia gairdneri ssp.*

Gairdneri), maple-leaved checkerbloom (*Sidalcea malachroides*), and Santa Cruz clover (*Trifolium buckwestiorum*).

These species may occur within or immediately adjacent to eucalyptus groves and may be affected directly or indirectly by program activities including eucalyptus removal, access, and equipment staging. Notwithstanding the incorporation of SPR BIO-1 (Protect Sensitive Habitats) and BIO-3 (Protect Sensitive Plant Species), impacts to sensitive plant species could occur. Chipping and spreading of chips in areas where sensitive plants are present, in some cases may suppress germination of sensitive plants by altering the available nutrient regime or limit the success of sprouts that cannot penetrate a thick dense chip layer. In other cases, chipping and spreading of chips may be conducive to the establishment of sensitive plants by creating a mulch layer that retains moisture and suppresses weeds.

As described in **MM BIO-1.A Sensitive Plant Species Protective Measures**, prior to initiating program activities, preconstruction surveys will be conducted for sensitive plant species within eucalyptus groves, access, and equipment staging areas. Occurrences of sensitive plants will be mapped using GPS and GIS to facilitate avoidance of these populations to the extent feasible. Where impacts to sensitive plants are unavoidable, a qualified biologist would coordinate with the appropriate regulatory agencies depending on listing/status (i.e., USFWS, CDFW) for the protection of botanical resources. In addition, general BMPs related to equipment cleaning and restrictions on pesticides use will be employed for the protection and conservation of sensitive plant species.

With the incorporation of SPR BIO-1and BIO-3 and the implementation of MM BIO-1.A, impacts to sensitive plant species will be reduced to a less than significant level.

Sensitive Wildlife Species
General Impact Discussion

Less than Significant with Mitigation. Table 6 below summarizes the analysis of the occurrence potential for a list of special-status wildlife species with potential to occur in the general vicinity of the program area. The majority of these species are not likely to be found within the eucalyptus stands proposed for removal but may occupy habitat adjacent to the eucalyptus groves used for access or staging.

Species that are present or have the potential to occur in the general vicinity of the program area include Crotch's bumble bee, Santa Cruz long-toed salamander, California giant salamander, California red-legged frog, northwestern pond turtle, sensitive fish species, sensitive bird species, sensitive roosting bats, American badger, and San Francisco dusky-footed woodrat. Potential impacts include direct disturbance to individuals (e.g., vegetation removal, access, equipment staging) and indirect impacts (e.g., increased erosion, reduced cover, impaired water quality) during implementation. Species with potential to be impacted by program activities are discussed in more detail below.

SPR BIO-1, BIO-2, and BIO-4 minimize these effects through pre-construction surveys, biological monitoring, footprint minimization, protection of aquatic features, and adaptive work restrictions. However, temporary habitat disturbance and work near sensitive upland and aquatic refugia could still result in residual impacts. Therefore, the Program will implement MM BIO-1, MM BIO-2, and BIO-3 to reduce these impacts to a less-than-significant level.

MM BIO-1 Implement Applicable Species Specific Mitigation Measures. For each project covered under the Program, the Program Applicant shall identify and implement all applicable species-specific mitigation measures (MM BIO-1.A through MM BIO-1.K) based on the biological resources present, the activities proposed, and the timing of work. These measures address potential impacts to sensitive plants, Crotch's bumble bee, sensitive fish, Santa Cruz long-toed salamander, California red-legged frog, California giant salamander/Santa Cruz black salamander, northwestern pond turtle, nesting birds, roosting bats, San Francisco dusky-footed woodrat, and American badger.

MM BIO-2 Sensitive Upland Habitats Protective Measures. This mitigation measure protects sensitive upland habitats by requiring a qualified biologist to identify and avoid sensitive areas, limit equipment access and staging to disturbed areas, minimize native vegetation removal, and use low-impact tree removal techniques where avoidance is not feasible. It also requires restoration of temporary impact areas with native vegetation and implementation of best management practices to prevent invasive species spread, erosion, contamination, and wildlife hazards.

MM BIO-3 Sensitive Aquatic Habitat Protective Measures. This mitigation measure protects aquatic and riparian habitats by limiting the disturbance footprint near water features, keeping all equipment out of aquatic areas, implementing stringent erosion, sediment, and water quality protections, and restricting access, staging, and materials handling to prevent indirect impacts. It also requires stabilization and restoration of disturbed soils, preparation for spill response, post-construction inspections, and the use of approved herbicides only under specific seasonal and distance-based buffers to avoid impacts to sensitive fish and amphibians.

See full description of MM BIO-1 through MM BIO-3 in Attachment A.

Table 6 Impacts to Sensitive Wildlife Species with Potential to Occur within or adjacent to the Program Area

Common Name Scientific Name	Potential Occurrence	Potential Direct and Indirect Impacts from Program	Applicable SPRs and MMs	Impact after Mitigation
Crotch's Bumble Bee *Bombus crotchii*	Possible	Significant. Nest disturbance, mortality, reduction of foraging habitat	MM BIO-1.B	Less than Significant with Mitigation
Sensitive fish species (i.e. Pacific lamprey [*Entosphenus tridentatus*] Riffle Sculpin [*Cottus gulosus*], Steelhead [*Oncorhynchus mykiss irideus pop. 8*]	Present	Significant. Behavioral changes, disrupt growth and development, degrade habitat conditions, disrupt foodweb	MM BIO-1.C, MM BIO-2, MM BIO-3	Less than Significant with Mitigation
Santa Cruz Long-toed Salamander *Ambystoma macrodactylum croceum*	Present	Significant. Degrade habitat conditions, harassment, injury, or mortality.	MM BIO-1.D, MM BIO-2, MM BIO-3	Less than Significant with Mitigation
California Red-legged Frog *Rana draytonii*	Present	Significant. Harassment, injury, or mortality.	MM BIO-1.E, MM BIO-2, MM BIO-3	Less than Significant with Mitigation

Common Name Scientific Name	Potential Occurrence	Potential Direct and Indirect Impacts from Program	Applicable SPRs and MMs	Impact after Mitigation
California Giant Salamander and Santa Cruz Black Salamander *Dicamptodon ensatus* and *Ambystoma californiense*	Possible/Not Expected	Significant. Degrade habitat condition, harassment, injury, or mortality.	MM BIO-1.F, MM BIO-2, MM BIO-3	Less than Significant with Mitigation
Northwestern Pond Turtle *Actinemys marmorata*	Present	Significant. Degrade habitat condition, harassment, injury, or mortality.	MM BIO-1.G, MM BIO-2, MM BIO-3	Less than Significant with Mitigation
Common and Sensitive Nesting Birds	Present/Possible	Significant. Nest disturbance, temporal habitat loss, harassment, injury, or mortality.	MM BIO-1.H	Less than Significant with Mitigation
Common and Sensitive Roosting Bats	Possible	Significant. Maternity roost disturbance, temporal loss of roosting habitat, harassment, injury, or mortality.	MM BIO-1.I	Less than Significant with Mitigation

Common Name Scientific Name	Potential Occurrence	Potential Direct and Indirect Impacts from Program	Applicable SPRs and MMs	Impact after Mitigation
San Francisco Dusky-footed Woodrat *Neotoma Fuscipes annectens*	Present	Significant. Degrade habitat conditions, harassment, injury, or mortality.	MM BIO-1.J	Less than Significant with Mitigation
American Badger *Taxidea taxus*	Possible	Significant. Degrade habitat conditions, harassment, injury, or mortality.	MM BIO-1.K	Less than Significant with Mitigation

Source: Biotic Assessment for the proposed South County Habitat Restoration Program

Impact Discussion by Species
Crotch's Bumble Bee

Crotch's Bumble Bee (CBB) may utilize mammal/insect burrows, thatched grasses, brush piles, rock piles, fallen logs or other substrate consisting of small cavities for nesting and loose soils or leaf litter for hibernation. They rely on a wide variety of flowering annuals and perennials for food.

Eucalyptus removal, and equipment staging and access in adjacent suitable habitats may impact this species through direct mortality of foraging individuals, hibernating queens, and nests or may indirectly impact nearby populations through temporary reduction of foraging habitat.

In the long term, restoration of native woodland or forest is likely to improve habitat conditions for this species and may provide recovery opportunities.

MM BIO-1.B Crotch's Bumble Bee (and General Wildlife) Protective Measures. This mitigation measure includes worker's environmental awareness training, preconstruction survey, regulatory agency consultation, and creating buffer around nests if nests are present. See full description of this measure in Attachment A.

With implementation of MM BIO-1.B and native habitat restoration that will follow eucalyptus removal, impacts to Crotch's Bumble Bee would be reduced to a less-than-significant level.

Pacific Lamprey, Riffle Sculpin, and Steelhead

Pacific Lamprey and Riffle Sculpin may be found throughout the Program Area in suitable habitat within rivers and streams. Steelhead are known to occur within Valencia Creek and Corralitos Creek.

Program activities will avoid direct impacts to streams within the Program Area; no work will occur below the Ordinary High Water Mark of streams under this Program. However, tree removal below the break in bank may result in indirect impacts to streams through understory removal and exposure of bare ground on the embankment, destabilization of embankments, increased erosion, sedimentation, accidental spills of equipment fuels, fluids, or lubricants, and/or reduction in water quality, all of which, in turn may impact habitat features and overall habitat quality within occupied streams. Program activities such eucalyptus removal and herbicide may also result in indirect impact. Eucalyptus removal and associated bare soils may also result in indirect impacts to aquatic habitats through increased erosion, sedimentation, and or reduction in water quality. Herbicide application, if not selected specifically for application near aquatic features, or if applied improperly, could cause direct mortality of sensitive fish species, could result in behavioral changes, disrupt growth and development and indirectly impact aquatic plants, degrade habitat conditions, and disrupt the food web.

With implementation of MM BIO-1.C, MM BIO-2 (Sensitive Upland Habitats Protective Measures), and MM BIO-3 (Sensitive Aquatic Habitat Protective Measures), these impacts would be reduced to a less-than-significant level.

MM BIO-1.C Sensitive Fish Species Protective Measures. This mitigation measure includes worker's environmental awareness training for sensitive fish species, preconstruction survey, and regulatory agency consultation. See full description of this measure in Attachment A.

Santa Cruz Long-toed Salamander

Santa Cruz long-toed salamander is present in the Program Area and is known to breed in at least nine ponds within the Area. Although the species uses lentic habitat for breeding, typically for one to four weeks, this species primarily inhabits oak woodland and dense coastal scrub where it over-summers and then migrates and disperses through a variety of upland habitats during the rainy season. The species may occur within or immediately adjacent to eucalyptus groves and may be affected directly through injury or mortality by Program activities or indirectly through habitat modification by program activities. The residuals from mastication may cause safety to movement to Santa Cruz long-toed salamander. Deep chips can also harm long-toed salamander and other amphibian species. MM BIO-1.D requires the blade to be maintained a minimum of 6-8 inches above the ground at all times and no ground disturbance will occur. In addition, debris from mastication and chipping will be spread only

in Project Areas that are located outside of the 200-meter buffer around ponds within the Program Area. For Project Areas that situated between 50 meters and 200 meters from ponds within the Program Area, a USFWS/CDFW approved biologist will assess the site to determine if the spreading of debris from mastication and chipping may occur or the thickness of the debris will be limited to a layer of 1 inch thick. In Project Areas located within 50 meters of ponds the thickness of the debris will limited to a layer 1 inch thick. All other mastication and chipping debris will be removed from this sensitive habitat.

The establishment of debris piles could attract individual SCLTS seeking refuge during dispersal or movement or could provide over-summering habitat. If debris piles are subsequently moved, dismantled, or burned, these activities could result in harassment, injury or mortality to SCLTS.

Controlled burns or broadcast burning with the Program Area to control invasive weeds may result in the mortality of SCLTS.

Long-toed Salamander may shelter in piles that are within 500 ft of a known or potential pond. If they are within 200ft of a known or potential pond, piles may also provide "settling" habitat for post-metamorphic juvenile salamanders. Piles that are between 500-200ft from a known or potential pond may be burned during the dry season, or if they are burned during the wet season they must be completely encircled with standard silt fencing, buried six inches deep, as late in fall as possible before the first overnight rain of any amount. Piles located within 200ft of a known or potential pond must always be encircled in silt fencing as late in fall as possible before the first overnight rain of any amount (MM BIO-1.D).

See full discussion of impacts to Santa Cruz long-toed salamander in Section 5.0 of the BA (Attachment B).

MM BIO-1.D Santa Cruz Long-toed Salamander Protective Measures. Measures related to protecting Santa Cruz Long-toed Salamander include worker's environmental awareness training, restrictions on herbicide application, preconstruction survey, regulatory agency consultation, and restrictions on pile burning, restrictions on mastication, restrictions on debris disposal from chipping and mastication, restrictions on ground disturbance activities, having biological monitors during work, among others. See full description of this measure of MM BIO-1.D in Appendix A.

Implementation of MM BIO-1 through MM BIO-3 would reduce potential direct and indirect impacts to a less than significant level.

California Red-legged Frog

California red-legged frog (CRLF) is present in the Program Area and is known to breed in Calabasas Pond, an off-channel pond along Larkin Valley Creek and is likely present at various ponds on private property. In addition to aquatic habitats, the species makes extensive use of upland habitats. The species may occur within or immediately adjacent to eucalyptus groves and may be affected directly through injury or mortality or indirectly through habitat

modification by program activities including eucalyptus removal, access, and equipment staging.

MM BIO-1.E California Red-legged Frog Protective Measures. Measures related to protecting the CRLF includes worker's environmental awareness training, restrictions on herbicide application, preconstruction survey, regulatory agency consultation, and restrictions on pile burning adjacent to ponds, among others. If eucalyptus removal occurs within 100 meters of known or potential habitat, a USFWS/CDFW-approved biologist will perform pre-construction surveys prior to project commencement. If CRLF are observed during preconstruction surveys or any time during construction, a USFWS/CDFW-approved biologist or approved biological monitor will be present during all activities. A USFWS/CDFW-approved biologist or approved biological monitor will inspect the work area each day before construction activities begin. See full description of MM BIO-1.E in Attachment A.

Implementation of MM BIO-1 through MM BIO-3 would reduce impacts to CRLF to a less than significant level.

California Giant Salamander and Santa Cruz Black Salamander

California giant salamander and Santa Cruz black salamander may be found within the Program Area in suitable habitats. Both species may occur within or immediately adjacent to eucalyptus groves and may be affected directly through injury or mortality or indirectly through habitat modification by Program activities including eucalyptus removal, new access roads, and equipment staging.

MM BIO-1.F California Giant Salamander and Santa Cruz Black Salamander Protective Measures. This mitigation measure includes worker's environmental awareness training, restrictions on herbicide application, preconstruction survey, regulatory agency consultation, and restrictions on pile burning adjacent to ponds, and ground-surveys prior to construction, among others. Prior to construction, a CDFW-approved biologist will conduct a ground survey throughout appropriate microhabitats within and adjacent to work areas by searching moist areas including culverts and under woody debris, cobbles, and small boulders (<20 lbs.). All potential cover objects will be returned to their original position after inspection. If either species is subsequently observed by project personnel, with the approval of CDFW, the approved will relocate the individual to the nearest appropriate habitat. See full description of MM BIO-1.F in Attachment A.

Implementation of MM BIO-1 through MM BIO-3 would reduce impacts to California giant salamander and Santa Cruz black salamander to a less than significant level.

Northwestern Pond Turtle

Northwestern pond turtle is known to occur within Larkin Valley Creek and may be present elsewhere within the Program Area in appropriate habitat.

Program activities will avoid direct impacts to aquatic features within the Program Area; no work will occur within the ponds or below the OHWM of streams within the Program Area; however, a handful of eucalyptus trees are present on the embankments of ponds and streams or adjacent to wetlands within the Program Area; tree removal on embankments or in or adjacent to riparian or wetland habitats may result in indirect impacts to aquatic features through understory removal and exposure of bare, destabilization of embankments, increased erosion, sedimentation, accidental spills of equipment fuels, fluids, or lubricants, and/or reduction in water quality, all of which, in turn may impact habitat features and overall habitat quality within aquatic features. Staging and/or access occurring on/near ponds or within adjacent riparian habitats may also result in these indirect impacts. Large scale eucalyptus removal and associated bare soils may also result in indirect impacts to aquatic habitats through increased erosion, sedimentation, and or reduction in water quality. Herbicide application, if not selected specifically for application near aquatic features, or if applied improperly, could cause direct mortality of northwestern pond turtle, could result in behavioral changes, disrupt growth and development and indirectly impact aquatic plants, degrade habitat conditions, and disrupt the food web.

Northwestern pond turtle nests may be directly impacted if adjacent grassland, coastal scrub, or open woodlands within 200-feet of known or potential aquatic habitat is used for staging equipment or access. Individual turtles may be injured or killed by construction activities in upland nesting habitats or during movement into upland habitats.

MM BIO-1.G Northwestern Pond Turtle Protective Measures. This mitigation measure includes worker's environmental awareness training, restrictions on herbicide application, preconstruction survey, regulatory agency consultation, among others. Prior to establishing a staging area or access route in potential pond turtle nesting habitat within 100-meters of known/potential aquatic habitat, a CDFW-approved biologist will conduct a preconstruction ground survey for evidence of past or active nests. If staging areas will be established in proximity to occupied aquatic habitat during the turtle nesting period (typically May – July), staging areas will be enclosed with silt fencing that will prevent encroachment. Access roads will not be fenced to allow free movements of turtles and other wildlife. See full description of MM BIO-1.G in Attachment A.

Implementation of MM BIO-1 through MM BIO-3 would reduce impacts to Northwestern pond turtle to a less than significant level.

Common and Sensitive Nesting Birds

The eucalyptus trees within the Program Area provide cover, shelter, roosting and foraging habitat for a range of both common and sensitive avian species. In addition, a number of these

birds are likely utilize the Program Area for nesting. Breeding bird season is typically February 1 to September 1 but some species, such as Great Horned Owl, Bald Eagle, Anna's Hummingbird, and Lawrence's Goldfinch, may initiate nesting outside of this season.

Birds may nest in trees, understory vegetation, on the ground, in brush/debris piles, or on human structures and machinery. Eucalyptus removal and equipment staging and access may result in direct mortality of young or nests, if present. Noise, vibration, dust, and other indirect disturbances may result in reduced food deliveries to nests, premature fledging, and/or nest abandonment.

Eucalyptus removal will result in an immediate reduction in available cover, shelter, foraging, roosting, and nesting habitat. Additionally, because restored native vegetation will take time to establish and achieve similar stature, there will be a temporal loss of suitable substrate for these life functions, especially for species requiring elevated or expansive canopy habitat (i.e. hawks, owls, and eagles). Over the long term, restoration with native plant species is expected to provide improved habitat diversity and ecological value for a broader range of bird species.

MM BIO-1.H Common and Sensitive Nesting Birds Protective Measures. This mitigation measure include work outside of nesting bird season if feasible, breeding bird surveys, postponing vegetation removal activities until young have fledged if breeding birds are observed, among others. See full description of MM BIO-1.H in Attachment A.

Implementation of MM BIO-1 through MM BIO-3 would reduce impacts to common and sensitive nesting birds to a less than significant level.

Common and Sensitive Roosting Bats

Both common and sensitive bat species may utilize the Program Area for roosting. Bat maternity roost season typically occurs between May 1 and September 1, and winter hibernacula are typically occupied between November 1 and February 15. Tree removal occurring within edge habitats and in proximity to water sources is more likely to impact bat species due to the higher roosting activity typically associated with these areas. If roosting bats are present, eucalyptus removal may result in the direct mortality of foliage/cavity roosting bats within the trees. Additionally, noise, vibration, dust, and other indirect disturbances associated with work activities may dislodge bats from their roosts or cause maternity roost abandonment.

Eucalyptus removal will result in an immediate reduction in available roosting habitat for bats. The immediate loss of roosting substrate would be reduced by girdling, where the tree canopy of the affected would die over the course of the year, allowing time for bats to seek alternate habitat. The Program will also result in a temporal loss of suitable roosting substrate, because restored native vegetation will take time to establish and achieve similar stature, and suitable bat roost features (peeling bark, crevices, and cavities). Although tree removal may result in short term loss of bat roosting habitat, over time the Program is anticipated to provide improved habitat diversity and ecological value for a broader range of bat species.

MM BIO-1.I Common and Sensitive Roosting Bats Protective Measures. Measures to protect common and sensitive roosting bats include worker's environmental awareness training, pre-construction survey, establishing buffers around maternity colonies if found, among others. See full description of MM BIO-1.I in Attachment A.

Implementation of MM BIO-1 through MM BIO-3 would reduce impacts to common and sensitive roosting bats to a less than significant level.

San Francisco Dusky-footed Woodrat

The San Francisco Dusky-footed Woodrat (SFDFW) utilizes the Program Area for stick houses and foraging, especially within edge habitat. Eucalyptus removal and equipment access and staging may cause direct mortality to houses, individuals or young. Destruction of houses may result in the mortality of dependent young and/or loss of food stores and shelter. Removal of eucalyptus trees adjacent to SFDFW houses may result in changes to microclimate conditions, reduce insulation and expose woodrats to weather (sun, wind, cold), expose woodrats to predators, and reduce or eliminate available foraging habitat.

Where native habitat (trees and understory) are present within or adjacent to the eucalyptus stands proposed for removal, retaining these vital habitat features would reduce impacts to woodrats and their houses. Where no native habitat features would be retained, mortality would be more likely because of the potential impacts described above.

In the long term, the Program is expected to have a beneficial impact on the SFDFW by expanding and connecting patches of preferred habitat such as oak woodland, coastal scrub, chaparral, and grassland. The Program will increase the extent of structurally complex habitat and edge habitat, both of which are occupied preferentially by this species.

MM BIO-1.J San Francisco Dusky-footed Woodrat Protective Measures. This mitigation measure includes worker's environmental awareness training, pre-construction survey, coordination with CDFW, among others. See full description of MM BIO-1.J in Attachment A.

Implementation of MM BIO-1 would reduce impacts to SFDFW to a less than significant level.

American Badger

The Program Area contains the suitable open scrub, forest, and grassland habitat this species prefers; however, this is a solitary species with a large home range (between 340 acres and 1500 acres). Potential habitat has already been fragmented by roads, development, and agricultural fields; and increased development over the last 20 years had further restricted suitable habitat to smaller habitat patches, making occurrence of this species possible but unlikely.

The proposed Program would improve habitat conditions and expand available potential badger habitat within the Program Area. During construction, if American badger is present in or near proposed Project Areas, construction, including equipment operation, noise, and

vibrations, could disturb or disrupt burrowing and denning activities, especially if young are present in the den. Young are typically born between March and April and disperse from the den area in late August or September. Equipment could track over and cause den collapse or compact friable soil.

MM BIO-1.K American Badger Protective Measures. At least 2 weeks prior to construction, a qualified biologist will conduct a preconstruction survey of the proposed Project Area/s for suitable badger habitat and dens. If present, implement a buffer from the den, as follows:

- Outside of rearing season- 50 feet to 100 feet depending on intervening vegetation, cover, insulation from noise and vibrations.
- Within rearing season (March – August or if young are present)- 250 feet.

See full description of MM BIO-1.K in Attachment A.

Implementation of MM BIO-1 would reduce impacts to American badger to a less than significant level.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations (e.g., wetland, native grassland, special forests, intertidal zone, etc.) or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*	☐	☒	☐	☐

Discussion: **Less than Significant with Mitigation**. The following sensitive habitat types are present within the Program Area:

- Oak Woodland
- Oak Savannah
- Native Grassland
- Coastal Scrub
- Chaparral
- Riparian
- Pond/Marsh
- Creek
- Wetland/Seep

Within the Program Area, oak woodland, oak savannah, native grassland, coastal scrub, chapparal, and riparian habitats may be impacted by work activities. Temporary impacts to these sensitive habitats may result from the access and staging needed for equipment to reach eucalyptus stands for removal as well as from the felling of trees into adjacent habitats if necessary for their safe removal. Large scale eucalyptus removal adjacent to sensitive habitats may temporarily degrade habitat conditions through changes in shading, canopy structure, and increased erosion and sedimentation, especially on slopes. These potential temporary impacts would be avoided and minimized as described under the protective measures below.

In general, no permanent impacts to sensitive habitats would result from Program activities and no clearing, grubbing, earth movement, or ground disturbance would occur within sensitive habitats, unless no other alternative exists.

Under specific circumstances (i.e. in order for equipment to access eucalyptus stands or to establish skid trails for log removal), removal of individual native trees and/or shrubs within sensitive habitat may be required. Other temporary impacts may include crushing and trampling vegetation or cutting vegetation to above the ground. Any removal of native vegetation, particularly in sensitive habitats, would be minimized to the greatest extent feasible. A biotic approval is required for work within sensitive habitats and mitigation would be required for any impacts per the County Sensitive Habitat Protection ordinance (§ 16.32). Because the Program Area falls within known and potential SCLTS habitat, interagency coordination and approvals from the County, CDFW, and USFWS would be required.

In limited locations, eucalyptus trees are present on the embankments of streams and/or intergrade with riparian vegetation. Work within these areas would be limited to tree removal or girdling and protective measures would be implemented to preserve native riparian functions and values; however, temporary impacts to riparian may occur, including those described above. In addition, temporary indirect impacts to riparian may include increased erosion, sedimentation, and/or impacts to water quality.

Any work which occurs within riparian habitat would require an authorized exception to the County Riparian Corridor and Wetlands Protection Ordinance (§16.30). A preliminary analysis of has determined that this Program meets the criteria for an exception, as described above as described in question (5) below.

Although the Program may result in short term temporary impacts to sensitive habitats adjacent to areas where tree removal will occur, the Program will be restoring sensitive habitats throughout the Program Area. Overall, and in the medium and long term, proposed Program activities will result in improved ecological functions and values of sensitive habitats through increased acreage of sensitive habitats, increased diversity of native habitat, complex multi-tiered canopy of restored woodlands, native understory, increased habitat for native plant and wildlife species, and increased connectivity between sensitive habitats.

The Program will also implement MM BIO-2 (Sensitive Upland Habitats Protective Measures), which would reduce impacts to sensitive habitats to a less than significant level.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐

Less than Significant with Mitigation. Within the Program Area, pond/marsh, stream, and wetland/seep habitats may be impacted by Program activities if these sensitive habitats are present adjacent to eucalyptus removal areas or, in limited locations within the Program Area, if eucalyptus trees are present on the embankments of these aquatic features.

Temporary impacts to these sensitive habitats may result from the access and staging needed for equipment to reach eucalyptus trees or stands for removal as well as from the felling of trees in adjacent habitats if necessary for their safe removal. While vegetation removal will be restricted to eucalyptus trees, the felling of large trees, as well as equipment access and staging, may impact these aquatic habitat types.

Large scale eucalyptus removal adjacent to pond/marsh, stream, and wetland/seep habitats may temporarily degrade habitat conditions through changes in shading, canopy structure, and understory, exposure of bare ground on the embankment, destabilization of embankments, and increased erosion and sedimentation. Vegetation may be crushed or trampled adjacent to aquatic features. In addition, temporary indirect impacts to aquatic features may include impacts to water quality. Program activities may result in accidental spills of equipment fuels, fluids, or lubricants, and/or reductions in water quality from sediment. Herbicide application, if not selected specifically for application near aquatic features, or if applied improperly, could also impact water quality, impact aquatic plants, degrade habitat conditions, and disrupt the food web.

Any work which occurs within or near aquatic habitats would require an authorized exception to the County Riparian Corridor and Wetlands Protection Ordinance (§16.30). A preliminary analysis of has determined that this Program meets the criteria for an exception, as described in question (5) below.

Work within or near aquatic features would be limited to tree removal or girdling and MM BIO-3 (Sensitive Aquatic Habitats Protective Measures), described below, would be implemented to preserve the ecological functions and values of these sensitive habitats. With the implementation of MM BIO-3, impacts to state or federally protected aquatic habitats would be reduced to a less than significant level.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐

***Discussion*:**

Less than Significant with Mitigation. While eucalyptus groves do provide habitat for some native species, particularly avian species, these trees are generally considered ecologically disruptive due to their dense canopy, allelopathic properties, and limited value for supporting native wildlife diversity. Their replacement with native vegetation is expected to improve habitat quality and ecological function over the long term.

During Program implementation, temporary disturbance from vegetation removal may cause short-term avoidance by some wildlife species. In the interim period between eucalyptus removal and the establishment of native vegetation, the affected areas may be less conducive to wildlife movement and habitat use due to reduced vegetative cover and structural complexity. However, because the Program will not involve the installation of permanent barriers such as fencing or new development, and the eucalyptus removal areas will remain undeveloped open space, the potential to interfere with regional wildlife movement is minimal. Moreover, the transition to native habitat is expected to enhance the suitability of the area for wildlife movement and usage by providing more diverse and appropriate food and cover resources over time.

Additionally, the Program will implement MM BIO-4, Wildlife Movement Protective Measures described below:

MM BIO-4, Wildlife Movement Protective Measures

If silt fencing is installed around the Project Area, ensure breaks in the fencing are present every 50 feet to allow wildlife to move around the Project Area without significant disruption.

As such impacts related to wildlife movement would be less than significant with the implementation of MM BIO-4.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
5. *Conflict with any local policies or ordinances protecting biological resources (such as the Sensitive Habitat Ordinance, Riparian and Wetland Protection Ordinance, and the Significant Tree Protection Ordinance)?*	☐	☒	☐	☐

***Discussion*:**

Less than Significant with Mitigation. County Sensitive Habitat Ordinance: The County Sensitive Habitat Ordinance requires that any unavoidable environmental impacts to sensitive habitats be mitigated. In addition, the ordinance calls for the protection of sensitive habitats "undisturbed by the proposed development activity" or on an adjacent parcel through measures such as conservation easements. Additionally, restoration "commensurate with the scale of the proposed development" is required for degradation of sensitive habitats caused by the project. Impacts to sensitive habitats, including wetlands and aquatic habitat, would be mitigated as described above. These criteria would be met through the protective measures outlined above and through restoration of the subject Project Areas.

County Riparian Corridor and Wetlands Protection Ordinance: The Program would require a Riparian Exception for individual projects that cannot implement eucalyptus removal without impacts to wetlands, riparian, or associated buffers in order to be consistent with the County of Santa Cruz Riparian Corridor and Wetlands Protection Ordinance.

Prior to the approval of any exception, the County would make the following findings:

(1) *That there are special circumstances or conditions affecting the property.*

Properties that fall within the specifications of the Program will have eucalyptus that would be removed for the dual purposes of habitat restoration and to improve public safety. Proposed eucalyptus removal would reduce wildfire and high wind threats to adjacent properties and restore native habitat for the SCLTS.

(2) *That the exception is necessary for the proper design and function of some permitted or existing activity on the property.*

Work in or near riparian habitat and aquatic features would occur only if no feasible alternative access routes are available to reach eucalyptus groves targeted for removal, or if tree felling cannot be safely conducted without directing trees or equipment into such features. In such cases, disturbance would be limited to the minimum extent necessary to facilitate safe and effective tree removal and would be conducted in accordance with applicable protective measures.

(3) *That the granting of the exception will not be detrimental to the public welfare or injurious to other property downstream or in the area in which the project is located.*

The Program is designed to improve public welfare by improving public safety and protective measures would be implemented to protect all properties downstream of Program activities.

The Program would benefit public welfare by reducing the risk of wildfire ignition and spread associated with dense stands of flammable eucalyptus trees. In addition, the removal of structurally compromised or hazard-prone trees would decrease the potential for property damage or personal injury resulting from falling limbs or tree failure during high wind or storm events.

All activities undertaken as part of the Program will ensure the protection of downstream properties through implementation of erosion and sediment controls and water quality protections.

(4) *That the granting of the exception, in the Coastal Zone, will not reduce or adversely impact the riparian corridor, and there is no feasible less environmentally damaging alternative.*

The Program is not located in the Coastal Zone; however, the Program has been developed to meet the "least environmentally damaging" criteria.

(5) *That the granting of the exception is in accordance with the purpose of this chapter, and with the objectives of the General Plan and elements thereof, and the Local Coastal Program Land Use Plan*.

The Program is consistent with the purpose and objectives of the chapter and of the Santa Cruz County General Plan, which emphasize the protection, restoration, and enhancement of native habitats and biological resources. The Program will result in the restoration of native habitat which will subsequently improve ecological functions and values of adjacent riparian habitat, wherever present. By removing invasive eucalyptus trees and facilitating the re-establishment of native vegetation communities, the Program supports long-term ecological health and aligns with County objectives for habitat conservation and natural resource stewardship.

Preliminary analysis has determined that the project complies with these findings. The Program is therefore consistent with the County of Santa Cruz Riparian Corridor and Wetlands Protection Ordinance and impacts from Program implementation would be less than significant with mitigation incorporated.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
6. *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*	☐	☐	☐	☒

Discussion: **No Impact**. The Program does not conflict with other approved local, regional, or state habitat conservation plans. The Program will comply with all protective measures laid out in the General Conservation Plan for Amphibians in Southern Santa Cruz County. Therefore, no impact would occur.

Cumulative Impact: **Less than Significant with Mitigation**. Relevant cumulative projects in Santa Cruz and adjacent counties (Santa Clara, San Benito, and Monterey) include the Santa Cruz County (County) Regional Transportation Commission (RTC) State. Biotic Assessment for the proposed South County Habitat Restoration Program

Route 1 Highway Widening Projects, Monterey Bay Sanctuary Scenic Trail Network (Coastal Rail Trail) and associated County RTC Rail Trail projects, various County infill projects, Elkhorn Slough Eucalyptus Treatment and Wildfire Prevention Project (RCD of Monterey County), the Highway 101 Rocks Road Tree Removal Project (Caltrans), the UC Santa Cruz Wildfire Vegetation Management Plan (WVMP), and regional fuel reduction projects authorized under the California Vegetation Treatment Program (CalVTP).

Some of these projects are cumulatively comparable because of the large numbers of tree removal associated with project activities while other projects share similar vegetation management objectives and collectively contribute to regional trends in canopy structure and habitat availability. All of these projects contribute cumulatively to temporal loss of mature trees and canopy loss on a regional scale. While some of these projects are also restoration projects (e.g. Elkhorn Slough and Highway 101) and would therefore replace trees on site with native habitat, the majority of these projects would seek off-site locations for mitigation of tree loss, would be mitigated out of kind due to lack of available land for tree planting, have been approved with findings of overriding considerations despite significant impacts associated with tree loss, and will result in the permanent removal of trees at the various project locations, exacerbating temporal loss of trees.

The proposed Program would contribute to cumulative tree removal impacts in the region by facilitating the removal of up to 1000 acres of eucalyptus across southern Santa Cruz County.

The removal of mature trees within the Program Area would contribute to temporal loss of habitat value, delaying the reestablishment of ecological structure and function following treatment. Fundamentally a restoration program, all participating Project sites would be restored, on-site, through natural recruitment and planting of native species such as coast live

oak, Douglas-fir, and redwood, which would replace non-native eucalyptus trees with native habitat, and will support the long-term recovery of vertical structure and raptor nesting habitat. In this respect, this Program is distinct from some of the other cumulative Projects identified. Nevertheless, it will take several decades (approximately 20 to 40 years) for replacement trees to develop mature height, branch structure, canopy complexity and habitat function and to support nesting by large-bodied raptor species comparable to the removed trees.

All eucalyptus removal activities will be subject to Program-wide SPRs and MMs. These include pre-construction biological surveys, seasonal work windows, species-specific exclusion buffers, and biological monitoring. A full description of these measures is provided in Section 5 Impacts and Protective Measures of the BA (Attachment B). These protective measures would reduce the cumulative impact of tree removal by minimizing impacts to sensitive biological resources during Program implementation.

The Program is designed to support long-term ecological restoration, with all treatment areas subject to site-adapted revegetation. In areas with intact native understory, minimal invasives present, and adjacent native habitat, passive natural regeneration may be feasible. Where active restoration is required, planting or seeding with appropriate native species will be implemented based on local site conditions and adjacent habitat type, in support of habitat continuity and suitability for Santa Cruz long-toed salamander (SCLTS) and other sensitive species.

Further, to reduce the Program's contribution to cumulative impacts associated with tree removal within the greater setting, cumulative conservation goals will be incorporated into the Restoration Program. The Restoration Program will include Program-wide goals, objectives, and qualitative performance criteria designed to reduce the cumulative impacts of the Program, including but not limited to:

- A cap on the number of acres of tree removal conducted annually to reduce the short-term impacts associated with tree removal including abrupt transitions in habitat value. Tree removal will be restricted to 90 acres per year, and no more than 45 acres in a given HUC 12 watersheds [USGS (WBD) 2025].

Although vegetation management projects across the cumulative analysis area may result in broad-scale impacts such as canopy loss and habitat modification, with protective measures in place, the Program would have less than significant cumulative impacts to biological resources due to the implementation of avoidance and minimization measures and restoration actions. These actions are designed to reduce short-term effects and promote long-term ecological recovery. Over time, the Program is expected to enhance native habitat quality and support landscape-scale habitat connectivity.

E. Cultural Resources

Regulatory Setting

FEDERAL

National Historic Preservation Act (NHPA)

The National Register of Historic Places (NRHP) is the nation's master inventory of known historic properties. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, and cultural districts that are considered significant at the national, state, or local level.

The criteria (36 CFR 60.4) for determining NRHP eligibility are as follows:

- The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);
- It retains integrity of location, design, setting, materials, workmanship, feeling, and associations;
- It possesses at least one of the following characteristics:
    - Criterion A: Association with events that have made a significant contribution to the broad patterns of history (events).
    - Criterion B: Association with the lives of persons significant in the past (persons).
    - Criterion C: Distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction (architecture).
    - Criterion D Has yielded, or may be likely to yield, information important to prehistory or history (information potential).

Listing in the NRHP does not entail specific protection or assistance for a property but it does guarantee recognition in planning for federal or federally assisted projects, eligibility for federal tax benefits, and qualification for federal historic preservation assistance. Additionally, project effects on properties listed in the NRHP must be evaluated under CEQA.

The National Register Bulletin also provides guidance in the evaluation of archaeological site significance. If a heritage property cannot be placed within a particular theme or time period, and thereby lacks "focus," it is considered not eligible for the NRHP. In further expanding upon the generalized NRHP criteria, evaluation standards for linear features (such as roads, trails, fence lines, railroads, ditches, flumes, etc.) are considered in terms of four related criteria that account for specific elements that define engineering and construction methods of linear features: (1) size and length; (2) presence of distinctive engineering features and

associated properties; (3) structural integrity; and (4) setting. The highest probability for NRHP eligibility exists within the intact, longer segments, where multiple criteria coincide.

The majority of South County Oak Woodland Habitat Restoration Projects will not have a federal nexus; however, it is possible a few Projects will also be subject to the NHPA including completing the Section 106 review process to consider the potential effects on historic properties if federal funding or federal permits are involved.

STATE

California Register of Historical Resources

All properties in California that are listed in or formally determined eligible for listing in the NRHP are eligible for the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant within the context of California's history. The CRHR is a statewide program of similar scope and with similar criteria for inclusion as those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

A historic resource must be significant at the local, state, or national level under one or more of the criteria defined in the California Code of Regulations Title 15, Chapter 11.5, Section 4850 to be included in the CRHR. The CRHR criteria are similar to the NRHP criteria and are tied to CEQA because any resource that meets the criteria below is considered a significant historical resource under CEQA. As noted above, all resources listed in or formally determined eligible for the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria:

- Is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- Is associated with the lives of persons important to local, California, or national history.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
- Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Similar to the NRHP, a resource must meet one of the above criteria and retain integrity. The CRHR uses the same seven aspects of integrity as the NRHP.

CEQA requires public agencies to consider the effects of their actions on "historical resources," "unique archaeological resources," and "tribal cultural resources." Pursuant to PRC Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." PRC Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources. PRC Section 21084.2 further establishes that "[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment."

"Historical resource" is a term with a defined statutory meaning (PRC Section 21084.1); determining significant impacts to historical and archaeological resources is described in the State CEQA Guidelines, Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

- A resource listed or determined to be eligible by the State Historical Resources Commission for listing, in the California Register of Historical Resources (PRC Section 5024.1).
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the California Register of Historical Resources (PRC Section 5024.1).
- The fact that a resource is not listed in or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in a historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. PRC Section 21083.2(g) states that unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.

LOCAL

Santa Cruz County General Plan

All proposed activities associated with the South County Oak Woodland Habitat Restoration Project are subject to environmental review, including an assessment of cultural resources, and must comply with CEQA. As such, it is necessary for the Project to determine if it will have an effect on historical resources under CEQA, which includes archaeological and Tribal cultural resources. This master Permit constitutes County of Santa Cruz approval for conducting specific project types of conservation practices. Eligible projects implementing these practices are subject to size constraints and other limiting criteria, and shall be carried out under the auspices and oversight of the RCD. This Master Permit incorporates all of the separate County permits that would otherwise be needed for the conduct of these qualifying environmental enhancement projects, including Coastal Zone approvals, grading permits, tree removal permits, encroachment permits for projects impacting County right-of-way, and/or sensitive habitat reviews, as applicable. Work performed according to the provisions of this Master Permit are deemed to be consistent with the County General Plan, Area Plans, Community Plans, the Local Coastal Program (LCP), and the requirements of County regulations.

Environmental Setting

Cultural resources are typically defined as any remains or indicators of past human activities, including artifacts, sites, structures, landscapes, and objects of importance to a culture or community for scientific, traditional, religious, or other reasons. In California, scientists group these resources by historical period including two main categories: Precolonial (before European contact–AD 1772), and Historic (AD 1772–Present). Though these two categories represent the largest dichotomy of cultural resources in California, the reality is a blending of Native American and European cultures with Tribal communities remaining active through present day. As such, Native American Tribes in California also have Tribal resources which comprise elements important to their cultural identity.

Cultural resources, comprising precolonial and historical archaeological deposits, built environment resources, and places of traditional importance to Native Americans, all must be identified and considered during the environmental review process for all South County Oak Woodland Habitat Restoration Program Projects. Santa Cruz County and the surrounding area have been occupied for 10,000+ years by Indigenous populations, was the site of concentrated Spanish Colonial and Mexican occupations, and the location of some of the first American settlements in the state. Thus, Santa Cruz County sits atop and within layer upon layer of significant cultural resources.

A majority of precolonial archaeological sites are contained exclusively within soil matrices and are vulnerable to impacts from historic and modern land use practices such as

construction/development and farming. Though these activities can destroy or displace cultural materials, they do not necessarily preclude these materials from still maintaining importance and significance to the scientific and Native American communities. Modern ground disturbance for development or restoration projects is often a catalyst in exposing previously unknown buried resources. Therefore, for each South County Oak Woodland Habitat Restoration Program project, an assessment of cultural resource sensitivity should be completed and based on the information gathered during the baseline cultural resource study conducted for a specific South County Oak Woodland Habitat Restoration Program project's activities and footprint. Relying on archaeological sensitivity models that are built for expansive areas, like all of Santa Cruz County, are less accurate and therefore less reliable than the data derived from investigating and assessing a specific project footprint. Also, these models likely do not take into account historical built environmental resources or Tribal resources. These models still provide valuable information for pre-planning purposes, as they can help RCD project managers to understand the potential cultural resource constraints likely to be encountered for a potential South County Oak Woodland Habitat Restoration Program project area (Figure 5). The initial phase of cultural resource review is critical to the success of any planned project. A broad, inclusive resource identification effort at the beginning stages of project planning and environmental review will minimize impacts to cultural resources and will also minimize project delays due to unforeseen discoveries. Another important aspect of this phase of work is meaningful consultation with groups who may have concerns about a project or might bring to bear important cultural resources information about a project area. Consultation with outside groups, particularly Native Americans, is another way to ensure project success.

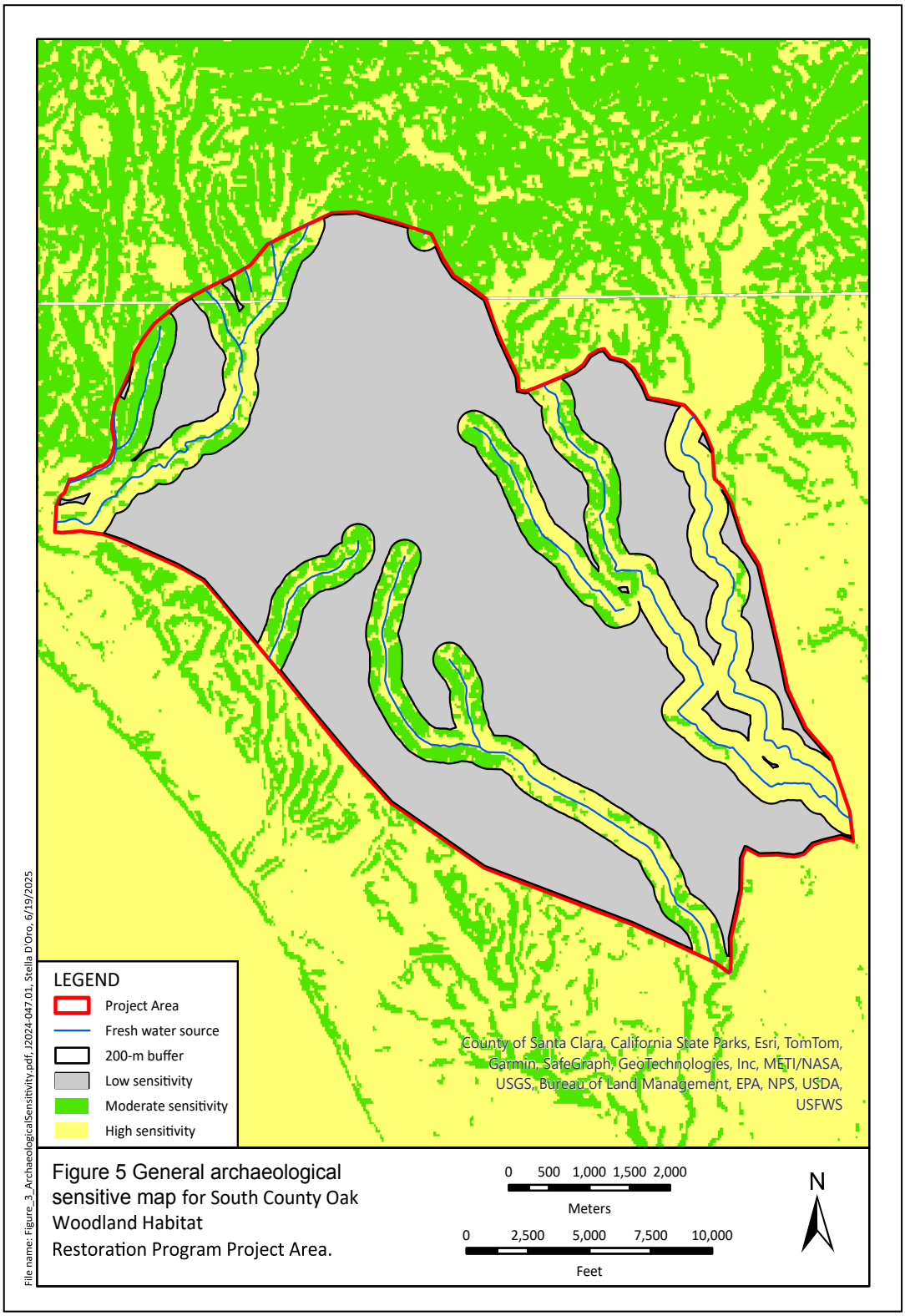


Figure 5 General archaeological sensitive map

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following standard project requirements (SPRs), as well as any other SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR CUL-1: Tribal Consultation and Protection of Tribal Resources. Using the appropriate Santa Cruz County Native American Contact List, the RCD will notify the identified Native American representatives in writing and provide details about the project location and project activities. For any Native American representatives that do not respond to the initial letter, follow-up communication, via phone call and email, will be undertaken. The goal is to identify potential impacts to Tribal cultural resources early in the project planning phase to ensure that impacts to these resources are avoided. Tribal cultural resources may include, but are not limited to, sites, features, landscapes, places, or objects of value to a Tribe.

SPR CUL-2: Low Impact Project Cultural Resource Assessment. Desktop research and pedestrian surveys will be conducted to identify cultural resources in the project area. Examples of low impact project include projects that involve hand-felling trees, herbicide application, and girdling for eucalyptus removal with minimal ground disturbance, restoration activities, or biomass management. A letter will be prepared to report findings. See Attachment A for details related to the defining criteria for low impact projects and more discussion on protocols should a project qualifies as a low impact project.

SPR CUL-3: Program Project Phase I Cultural Resource Inventory. For all Program projects that do not meet the criteria as Low Impact projects, a Phase I Cultural Resource Inventory study will be completed for the area where all project activities will take place. The inventory will be completed by a qualified archaeologist that meets the Secretary of the Interior Standards. See Attachment A for full description of this SPR.

SPR CUL-4: Cultural Resource Extended Phase I Presence/ Absence Testing. For all Program projects that have positive Cultural Resource Assessments and positive or inconclusive Phase I Cultural Resource Inventories, and the cultural resource cannot be avoided through project re-designs, a small-scale presence/absence subsurface study will be completed by a qualified archaeologist that meets the Secretary of the Interior Standards and will include at the minimum excavation of a series of shovel probes and report of findings. See Attachment A for full description of this SPR.

SPR CUL-5: Cultural Resource Evaluation and Significance Study. For all Program projects that have positive Extended Phase I Cultural Resource Inventories, and the cultural resource cannot be avoided through project re-designs, an Evaluation and Significance Study will be completed by a qualified archaeologist that meets the Secretary of the Interior Standards and, at a minimum, the project will be required to develop a research design, conduct field work appropriate to the cultural resources, conduct laboratory analysis and specialized studies on

archeological materials, and prepare a document to report findings. See Attachment A for a full description of SPRs.

SPR CUL-6: Cultural Resources Treatment Plan. For all Program projects that have cultural resources located within the project area that are determined eligible for listing on the CRHR, a Cultural Resources Treatment Plan (CRTP) will be developed and implemented to reduce the impacts of the Project to less than significant. See Attachment A for full description of the SPR.

SPR CUL-7: Cultural Resource Training. Prior to any project activities commencing, the RCD Project Manager will administer a cultural resource sensitivity and awareness training on the protection of sensitive archaeological, historical, and Tribal cultural resources, to be presented to all construction crew members and site supervisors. The training will include details about archaeological sensitivity of the general area, the legal requirements related to protecting cultural resources, a review of the kinds and types of artifacts and features that may be encountered, the importance of cultural resources to the Native American community, and the protocols to follow should cultural resources be discovered during project construction.

SPR CUL-8: Discovery of Cultural Resources. If previously unidentified cultural materials are unearthed during construction activities/installing a conservation practice, then it is CEQA policy that work be halted within a 50-foot radius of the find until a qualified archaeologist can evaluate the nature and significance of the find. If the find is determined to be significant, steps shall be taken to protect the find from further damage or disruption. Additionally, an appropriate mitigation plan shall be developed and implemented with the concurrence of the Lead Agencies and in consultation with local Native American representatives.

SPR CUL-9: Discovery of Human Remains. In accordance with California PRC Sections 5097 and 7050.5, if, at any time, human remains are discovered, the Santa Cruz County Coroner, RCD Project Manager, and landowner will be notified immediately and all work on the project will temporarily halt. If the Coroner determines that the remains are likely to be Native American, the Native American Heritage Commission will be notified and will appoint a Most Likely Descendent (MLD) to provide recommendations for the disposition of the remains and work will not resume until they have made a recommendation to the landowner and RCD, for means of treating and disposing of, with appropriate dignity, the human remains and any associated grave goods, as provided in California PRC 5097.98.

SPR CUL-10: Confidentiality of Archaeological or Sacred Lands Sites. All information obtained from a Tribe will be kept confidential and RCD staff will not disclose the location of an archaeological site or sacred lands or any other information that is exempt from public disclosure pursuant to the Public Records Act.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1. Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?	☐	☐	☒	☐

Discussion: Less than Significant. A Cultural Resources Assessment Report was prepared for this Program by Albion in June 2025 (Attachment C). Program activities involving ground disturbance could result in potential impacts to historical resources. However, the implementation of SPR CUL-1 through CUL-10 would reduce impacts to a less than significant level.

At a minimum, for projects that are considered low impact due to minimal ground disturbance, desktop research and pedestrian survey will be conducted to confirm the presence/absence of historical resources. A letter of findings will be prepared to document the results (SPR CUL-1). For projects that do not qualify as low impact projects, a Phase I cultural resource inventory will be prepared (SPR CUL-3). If the Phase I cultural resource inventory determines that cultural resources are present, or have the potential to occur, an extended Phase I cultural resource inventory will be conducted as described in SPR CUL-4. If presence are confirmed and the cultural resource cannot be avoided through project re-designs, an Evaluation and Significance Study will be completed by a qualified archaeologist that meets the Secretary of the Interior Standards (SPR CUL-5), and a cultural resource treatment plan will be developed to reduce impacts to cultural resources to a less than significant level (SPR CUL-6).

If previously unidentified cultural materials are unearthed during construction activities/installing a conservation practice, all work will be halted within a 50-foot radius of the find until a qualified archaeologist can evaluate the nature and significance of the find and a mitigation plan will be prepared to if the find is determined to be significant (SPR CUL-8). In the event that human remains are discovered during implementation of program activities, protocol outlined in SPR CUL-9 will be executed.

Additionally, the RCD Project Manager will administer a cultural resource sensitivity and awareness training on the protection of sensitive archaeological, historical, and Tribal cultural resources, to be presented to all construction crew members and site supervisors (SPR CUL-7).

Although there is potential for the project to impact significant historical resources as defined under CEQA §15064.5, impacts to cultural resources would be less than significant with incorporation of the SPRs.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?	☐	☐	☒	☐

Discussion: Less than Significant. As shown in Figure 5, areas along creeks and rivers within the Program area contains area of moderate to high archeological sensitivity while the majority of the Program Area has a low sensitivity. Areas with low archeological resource sensitivity are areas with latest Pleistocene or Holocene deposits with slopes greater than nine degrees located more than 200 m (~656 feet) from a water source and/or geomorphic contact. Areas with moderate sensitivity are usually areas with Holocene deposits with slopes less than nine degrees and located less than 200 m (~656 feet) from a geomorphic contact and more than 200 m (656 feet) from a water source. Area of high sensitivity are generally areas with Holocene deposits with slopes less than nine degrees, located less than 200 m (~656feet) from a geomorphic contact, and less than 200 m (656 feet) from a water source.

Program activities that involves ground disturbance such as vegetation removal, construction access, and use of heavy equipment have the potential to impact archaeological resources in the Program area. However, implementation of SPR CUL-1 through CUL-10 would reduce impact to a less than significant level.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

Discussion: Less than Significant. Impacts are expected to be less than significant with the implementation of SPR CUL-9 related to the discovery of human remains. Pursuant to section 16.40.040 of the SCCC, and California Health and Safety Code sections 7050.5-7054, if at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner and the Planning Director. If the coroner determines that the remains are not of recent origin, a full archaeological report shall be prepared, and representatives of local Native American Indian groups shall be contacted. If it is determined that the remains are Native American, the Native American Heritage Commission will be notified as required by law. The Commission will designate a Most Likely Descendant who will be authorized to provide recommendations for management of the Native American human remains. Pursuant to Public Resources Code section 5097, the descendants shall complete their inspection and make recommendations or

preferences for treatment within 48 hours of being granted access to the site. Disturbance shall not resume until the significance of the resource is determined and appropriate mitigations to preserve the resource on the site are established (SPR CUL-9).

F. Energy

Regulatory Setting

FEDERAL

Energy Policy and Conservation Act, and CAFE Standards

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation (DOT), is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with the CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the country. The EPA calculates a CAFE value for each manufacturer based on the city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. Based on information generated under the CAFE program, DOT is authorized to assess penalties for noncompliance. The Energy Independence and Security Act of 2007 (described below) identifies the current CAFE standards (EPA 2024).

Energy Policy Act of 1992 and 2005

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty alternative fuel vehicles capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of alternative fuel vehicles. States are also required by the act to consider a variety of incentive programs to help promote alternative fuel vehicles. The EPAct of 2005 does the following: provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 was designed to enhance US energy security, increase renewable fuel production, improve vehicle fuel economy, and promote energy efficiency in products, buildings, and the federal government. The Energy Independence and Security Act of 2007 increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022. The Energy Independence and Security Act of 2007 does not specify statutory volumes after 2022, and EPA in this rule is establishing final biofuel volume targets for all categories under the "set" authority. On June 21, 2023, EPA announces a final rule to establish biofuel volume requirements and associated percentage standards for cellulosic biofuel, biomass-based diesel (BBD), advanced biofuel, and total renewable fuel for 2023–2025. This final rule includes steady growth of biofuels for use in the nation's fuel supply for 2023, 2024, and 2025 (EPA 2023). The Energy Independence and Security Act also reduces U.S. demand for oil by setting CAFE standards that would require an industry-wide fleet average of approximately 50.4 miles per gallon in MY 2031 for passenger cars and light trucks, and an industry fleet-wide average for HDPUVs of roughly 2.851 gallons per 100 miles in MY 2035. The final CAFE standards increase at a rate of 2 percent per year for passenger cars in MYs 2027-31 and 2 percent per year for light trucks in model years 2029-31. The final HDPUV fuel efficiency standards increase at a rate of 10 percent per year in MYs 2030-2032 and 8 percent per year in MYs 2033-2035 (NHTSA 2024).

By addressing renewable fuels and the CAFE standards, the Energy Independence and Security Act of 2007 builds upon progress made by the Energy Policy Act of 2005 in setting out a comprehensive national energy strategy for the 21st century; however, in August of 2018, the National Highway Traffic and Safety Administration and EPA proposed the Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks, which decreases the stringency of CAFE standards. The Proposed Rule would maintain the existing standards until 2020 with a zero percent increase in fuel efficiency until 2026 (NHTSA 2024).

STATE

Warren-Alquist Act

The 1974 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The Act was created in response to the state legislature's review of studies that projected an increase in statewide energy demand, which could result in the development of power plants in environmentally sensitive areas. The Act introduced state policy for siting power plants to reduce potential environmental impacts and additionally sought to reduce demand for new generation by directing CEC to develop statewide energy conservation "measures to reduce wasteful, uneconomic, inefficient, and unnecessary uses of energy" (Public Resources Code Section 25400).

AB2076: Reducing Dependence on Petroleum

Pursuant to AB 2076 (Chapter 936, Statutes of 2000), CEC and the CARB prepared and adopted a joint agency report in 2003, Reducing California's Petroleum Dependence. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita vehicle miles traveled (VMT) (CEC and CARB 2003). Further, in response to the CEC's 2003 and 2005 Integrated Energy Policy Reports, Governor Davis directed CEC to take the lead in developing a long-term plan to increase alternative fuel use. A performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand by 2030 (CEC 2024).

Integrated Energy Policy Report

SB 1389 (Chapter 568, Statutes of 2002) required CEC to: "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety" (Public Resources Code Section 25301(a)). This work culminated in the Integrated Energy Policy Report (IEPR).

CEC adopts an IEPR every 2 years and an update every other year. The 2023 IEPR is the most recent IEPR, which was adopted in February 2024. The 2023 report emphasizes accelerating the integration of clean energy resources into the state's electricity grid and explores the potential applications of clean and renewable hydrogen and presents the California Energy Demand Forecast through 2040. The report also updates progress on gas decarbonization efforts, energy efficiency initiatives, the Clean Transportation Program, AB1257, and the advancement of peak demand reserves and margins by publicly owned utilities (CEC 2024).

AB1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statues of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with CARB and in consultation with other state, federal, and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

AB32, Senate Bill 32, and Climate Change Scoping Plan and Update

The 2022 Scoping Plan for Achieving Carbon Neutrality lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by AB1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon (CARB 2022).

2030 Natural and Working Lands Climate Change Implementation Plan

In a joint, inter-agency effort, the California Environmental Protection Agency (CalEPA), CDFA, CNRA, CARB, and California Strategic Growth Council released the 2019 Draft California 2030 Natural and Working Lands Climate Change Implementation Plan in January 2019. The Plan serves as a multi-disciplinary approach to conserve and maintain a resilient natural and working lands sector to provide the state with a natural carbon sink and improve air and water quality, wildlife habitat, recreation, and other benefits. The Plan sets goals for, at a minimum, increasing the rate of state-funded soil conservation practices by fivefold, doubling the rate of state-funded forest management and restoration efforts, tripling the rate of state-funded oak woodland and riparian reforestation, and doubling the rate of state-funded wetland and seagrass restoration above current practices (CalEPA, CNRA, CDFA, CARB, and Strategic Growth Council[SGC] 2019).

Senate Bill 100: California Renewables Portfolio Standard Program

SB 100 accelerated targets set by previously enacted Renewable Portfolio Standard (RPS)-related legislation to require that all California utilities, including independently owned utilities, energy service providers, and community choice aggregators, supply 44 percent of retail sales from renewable resources by December 31, 2024, 50 percent by December 31, 2026, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. The law requires that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Biomass is indicated as an eligible renewable energy source under the state's RPS guidelines (CARB 2021).

2020 Mobile Source Strategy

CARB adopts mobile source strategies as part of each SIP submitted to the EPA, as required by the CAA. On October 28, 2021, CARB adopted the updated Mobile Source Strategy, which addresses exhaust emissions from on-road light-duty and heavy-duty vehicles, off-road federal and international sources (i.e., aircraft, locomotives, and ocean-going vessels), and off-road equipment. The strategy is pertinent to the types of on-road vehicles and off-road equipment that would be used in treatment activity conducted under the Program.

CARB 2020 Mobile Source Strategy (2020 Strategy) uses scenario planning to take an integrated approach to identifying the technology trajectories and programmatic concepts to meet our criteria pollutant, GHG, and TAC reduction goals from mobile sources. The scenarios and concepts included in the 2020 Strategy provide emissions reductions for the purpose of meeting federal ambient air quality standards and substantially reducing GHG emissions from motor vehicles.

For on-road medium- and heavy-duty vehicles, the 2020 Strategy includes the concepts within the following scope to move the State towards the goal that 100 percent of California-registered trucks will be ZEVs by 2045 where feasible:

- Manufacturer requirements to foster clean technology production and sales;
- In-use requirements to accelerate penetration of newer technology;
- Incentive programs to promote and accelerate the use of advanced clean technologies;
- Enhanced enforcement strategies to ensure programs are achieving their anticipated benefits;
- Outreach and education to increase consumer awareness and acceptance of advanced vehicle and equipment technologies; and
- Infrastructure planning and development to support the transition to cleaner technologies.

For off-road vehicles and equipment, the 2020 Strategy includes the concepts within the following scope to move the State towards the goal that 100 percent of equipment will be zero-emission by 2035 where technologically feasible:

- Manufacturer requirements to foster clean technology production and sales;
- In-use requirements to accelerate penetration of newer technology;
- Incentive programs to promote and accelerate the use of advanced clean technologies;
- Outreach and education to increase consumer awareness and acceptance of advanced vehicle and equipment technologies; and
- Infrastructure planning and development to support the transition to cleaner technologies.

Short-Lived Climate Pollutant Strategy

Short-lived climate pollutants (SLCPs) are powerful GHGs that remain in the atmosphere for a much shorter period of time than longer-lived pollutants such as carbon dioxide. They include methane, fluorinated gases, and black carbon (particulates). Their potency, as compared to carbon dioxide, can be tens, hundreds, and thousands of times greater. SB 605 directed CARB to develop a comprehensive SLCP strategy. In coordination with other state agencies and local air districts, CARB adopted the SLCP Strategy in March 2017. The strategy

identified the use of anaerobic digesters to convert organic waste such as mulch or wood chips to renewable electricity, biogas, clean transportation fuels, and others (CARB 2017).

LOCAL

County of Santa Cruz General Plan

The Agriculture, Natural Resources + Conservation Element of the Santa Cruz County GP/LCP implements objectives of the County's Climate Action Strategy (CAS) to increase energy efficiency and strategies for natural systems and agriculture that foster adaption to climate change. The element also furthers the County Strategic Plan and vision for a sustainable environment, with policies and strategies to protect and restore natural resources, forests, coastlines, and agricultural land. Strategic Plan objectives to protect water quality and sustainably manage water resources, and promote renewable energy are also supported by policies of this element. The following goals, objectives, and policies are applicable to the Program:

- Policy 8.2.2 requires all new development to be sited and designed to minimize site disturbance and grading.
- Objective 5.17 (Energy Conservation) includes policies that support energy efficiency, conservation, and encourage the development of renewable energy resources.

County of Santa Cruz Climate Action Strategy

In 2013, Santa Cruz County adopted a Climate Action Strategy (CAS) focused on reducing the emission of GHGs, which is dependent on increasing energy efficiency and the use of renewable energy. The strategy intends to reduce energy consumption and GHG emissions by implementing a number of measures such as reducing vehicle miles traveled through County and regional long-range planning efforts, increasing energy efficiency in new and existing buildings and facilities, increasing local renewable energy generation, improving the Green Building Program by exceeding minimum state standards, reducing energy use for water supply through water conservation strategies, and providing infrastructure to support zero and low emission vehicles that reduce gasoline and diesel consumption, such as plug in electric and hybrid plug in vehicles.

The Santa Cruz County Regional Transportation Commission County-specific regional transportation plan (RTP)

Association of Monterey Bay Area Governments (AMBAG)'s 2040 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) recommends policies that achieve statewide goals established by CARB, the California Transportation Plan 2040, and other transportation-related policies and state senate bills. The SCS element of the MTP targets transportation-related GHG emissions in particular, which can also serve to address energy use by coordinating land use and transportation planning decisions to create a more energy efficient transportation system.

The Santa Cruz County Regional Transportation Commission prepares a County-specific RTP in conformance with the latest AMBAG MTP/SCS. The 2040 RTP establishes targets to implement statewide policies at the local level, such as reducing vehicle miles traveled and improving speed consistency to reduce fuel consumption.

Environmental Setting

ENERGY CONSUMPTION RELATED TO TRANSPORTATION

Gasoline and diesel fuel constitute 83 and 17 percent of petroleum-based fuels sold in California, respectively. According to the state Board of Equalization, 15.58 billion gallons of gasoline and 3.12 billion gallons of diesel were sold in 2017 (CEC 2020a,b).

Gasoline and diesel fuel sold in California for motor vehicles and equipment is refined in California to meet specific formulations required by CARB. A variety of alternative fuels are used to reduce demand for petroleum-based fuel. The use of these fuels is encouraged through various statewide regulations and plans, including the Low Carbon Fuel Standard and 2017 Scoping Plan. Conventional gasoline and diesel can be replaced (depending on the capability of the vehicle) with many transportation fuels, including biodiesel, electricity, ethanol (E-10 and E-85), hydrogen, natural gas (methane in the form of compressed and liquefied natural gas), propane, renewable diesel (including biomass-to-liquid), synthetic fuels, and gas-to-liquid and coal-to-liquid fuels.

California has a growing number of alternative fuel vehicles due to the joint efforts of CEC, CARB, local air districts, federal government, transit agencies, utilities, and other public and private entities. As of March 2019, California contained over 20,000 alternative fueling stations (U.S. Department of Energy 2022).

VEHICLE MILES TRAVELED AND GASOLINE CONSUMPTION

According to Caltrans, total gasoline purchased in 2015 totaled 6.5 million gallons (Caltrans 2018). Fuel consumption per capita in California decreased by nearly 11 percent from 2008 to 2011 (Bureau of Transportation Statistics 2015). Despite the progress in reducing per capita VMT and per capita fuel consumption, the continued projected increases in total fuel consumption and VMT can be attributed to the overall increase in population.

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following standard project requirements (SPRs), as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR CE-10 Idling Times: Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of CCR).

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1. *Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*	☐	☐	☒	☐

***Discussion*: Less than Significant**. The proposed Program would result in a temporary increase in the consumption of energy resources due to the operation of mechanical equipment (e.g., chainsaws, masticators), on- and off-road vehicles traveling to and from project sites, biomass processing, and potential traffic delays if traffic control is required. However, the Program would not result in wasteful or inefficient energy use. All equipment used for the project will comply with California Air Resources Board (CARB) emissions requirements for construction equipment, which include measures to reduce fuel consumption, such as limits on idling (SPR EC-10) and the retirement, replacement, or repowering of older engines. As a result, the impacts associated with the small, temporary increase in fuel consumption during project implementation are expected to be less than significant.

The Program focuses on eucalyptus tree removal and invasive weed control and does not involve activities that would lead to growth or an increase in population, and thus, would not substantially increase energy consumption. In fact, the Program is expected to reduce wildfire risk, which could ultimately reduce the energy needed for wildfire response and suppression.

For these reasons, the project will not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Impact related to energy consumption is expected to be less than significant, and no mitigation is required.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*	☐	☐	☐	☒

***Discussion*:**

No Impact. The project will be consistent with the AMBAG 2040 MTP/SCS and the SCCRTC 2040 RTP. The project would also be required to comply with the Santa Cruz County GP/LCP and any implemented policies and programs established through the CAS. Therefore, the project would not conflict with or obstruct any state or local plan for renewable energy or energy efficiency. No impact would occur.

Cumulative impacts: The cumulative energy impacts of the Program are expected to be negligible.

G. Geology and Soils

Regulatory Setting

FEDERAL

Paleontological Resources Preservation Act (16 U.S.C. Section 470aaa)

Enacted as part of the Omnibus Public Land Management Act (2009), the Paleontological Resources Preservation Act (PRPA) requires the Secretaries of the Interior and Agriculture to manage and protect paleontological resources on federal land using scientific principles and expertise. The PRPA includes specific provisions addressing management of these resources by the Bureau of Land Management, the National Park Service, the Bureau of Reclamation, the U.S. Fish and Wildlife Service, and the U.S. Forest Service of the Department of Agriculture. The PRPA affirms the authority for many of the policies the federal land managing agencies already have in place for the management of paleontological resources, such as issuing permits for collecting paleontological resources, curation of paleontological resources, and confidentiality of locality data.

Earthquake Hazards Reduction Act (Public Law 95-124, 42 U.S.C. 7701 et. Seq)

The purpose of this Act to reduce the risks of life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program. The objectives of the program include: (1) the education of the public; (2) the development of technologically and economically feasible design and construction methods and procedures; (3) the implementation of a system for predicting damaging earthquakes and for identifying seismic hazards; (4) the development of model building codes; (5) the development of methods of mitigating the risks from earthquakes; (6) increase the use of existing scientific and engineering knowledge to mitigate earthquake hazards; and (7) the development of ways to assure the availability of affordable earthquake insurance.

Clean Water Act (33 U.S. Code [USC] Section 1251 Et Seq.)

The Federal Water Pollution Control Act of 1948 was the first major U.S. law to address water pollution. Growing public awareness and concern for controlling water pollution led to sweeping amendments in 1972. As amended in 1972, the law became commonly known as the CWA. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including wetlands. The CWA provides standard regulations for the discharge of pollutants to the waters of the U.S. in order to maintain their chemical, physical, and biological integrity and protect their beneficial uses. In addition, the CWA provides the statutory basis for the National Pollutant Discharge Elimination System (NPDES). The CWA requires states to adopt water quality standards that must be approved by EPA and requires NPDES permits for the discharge of pollutants in U.S. waters. In addition, the CWA gives authority to the EPA to (1) implement pollution control programs, including setting wastewater standards and

effluent limits on an industry-wide basis; and (2) authorize the NPDES Permit Program permitting, administration, and enforcement to state governments with oversight by the EPA.

Federal Antidegradation Policy (Code of Federal Regulations – Title 40: Protection of Environment 40 CFR 131.12)

The Federal Antidegradation Policy was issued in 1968 by the U.S. Department of the Interior to (1) ensure that activities will not lower the water quality of existing use, and (2) restore and maintain "high quality water." The federal policy maintains that states shall adopt a statewide antidegradation policy that includes the following conditions:

- Existing instream water uses and a level of water quality necessary to maintain those uses shall be maintained and protected.
- Water quality will be maintained and protected in waters that exceed water quality levels necessary for supporting fish, wildlife, and recreational activities, and water quality, unless the State deems that water quality levels can be lowered to accommodate important economic or social development. In these cases, water quality levels can only be lowered to levels that support all existing uses.
- Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

STATE

Alquist-Priolo Earthquake Fault Zoning Act (Cal. Public Res. Code, Section 2621 et seq.)

This act provides policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults. The act also requires site-specific studies by licensed professionals for some types of proposed construction within delineated earthquake fault zones.

Porter-Cologne Water Quality Act (Cal. Water Code Div. 7)

The Porter-Cologne Water Quality Act is a key element of California water quality control legislation. Under the act, the State Water Resources Control Board (SWRCB) is given authority over state water rights and water quality policy, and it established the State's nine regional water quality control boards (RWQCBs) to regulate and oversee regional and local water quality issues. The RWQCB is also responsible for developing and updating Basin Plans targeted toward (1) protecting waters designated with beneficial uses, (2) establishing water quality objectives for surface water and groundwater, and (3) determining actions necessary to maintain water quality standards and control point- and nonpoint-sources of pollution into the State's waters. Under the Act, proposed waste dischargers are required to file Reports of Waste Discharge to the RWQCB and the SWRCB and RWQCB are granted jurisdiction over

the issuance and enforcement of Waste Discharge Requirements, NPDES permits, and Section 401 water quality certifications.

California State Antidegradation Policy (SWRCB Resolution No. 68-16, "Policy with Respect to Maintaining higher quality waters in California")

In 1968, the State of California adopted an antidegradation policy in response to directives under the Federal Antidegradation Policy. The antidegradation policy applies to high quality waters of the State, including surface waters and groundwater, and all existing and potential uses. The policy requires that high quality waters be maintained to the maximum extent possible and any proposed activities that can adversely affect high quality surface water and groundwater must (1) be consistent with the maximum benefit to the people of the State, (2) not unreasonably affect present and anticipated beneficial use of the water, and (3) not result in water quality less than that prescribed in water quality plans and policies.

LOCAL

County of Santa Cruz General Plan/Local Coastal Program

The existing County GP/LCP includes policies that address geological hazards, unique geologic features, and paleontological resources. All discretionary projects, including new lots, require a review of geologic hazards. Fault zones designated for review include the Butano, Sargent. Zayante, and Corralitos complexes, as well as the State designated Seismic Review Zones.

Local Hazard Mitigation Plan 2021-2026

Pursuant to requirements of the Federal Emergency Management Agency (FEMA), the County recently updated its Local Hazard Mitigation Plan (LHMP) for the years 2021-2026. The LHMP provides risk assessments for specific hazards, including earthquakes and liquefaction, coastal erosion, landslides, and expansive soils. Goals, objectives, and action items are identified as part of the mitigation strategy formulated for each hazard.

SCCC Chapter 16.22, Erosion Control

The purpose of this chapter is to eliminate and prevent conditions of accelerated erosion that have led to, or could lead to, degradation of water quality, loss of fish habitat, damage to property, loss of topsoil and vegetation cover, disruption of water supply, and increased danger from flooding, and to implement Local Coastal Program land use policies. [Ord. 3337 § 1, 1982; Ord. 2982, 1980]. Resource Management activities as defined in 16.22.110 € are exempted from all provisions of this chapter except SCCC 16.22.040 and 16.22.160 through 16.22.190. Exemptions are applicable to clearing, fuel management, reforestation, erosion control, or other resource management programs carried out under the auspices of a government agency which include appropriate erosion control measures. Agencies shall notify the Planning Director of such projects. [Ord. 3337 § 1, 1982; Ord. 2982, 1980].

SCCC Chapter 16.44, Paleontological Resource Protection

Section 16.44.040 requires preparation of a paleontological survey for specified developments in areas of known paleontological resources, and measures must be included to protect

resources during ground-disturbing development activities. Specifically, this chapter requires that a paleontological report shall be required if the County Environmental Coordinator determines on the basis of the paleontological survey that further information is required to ensure protection of paleontological resources. Pursuant to section 16.44.060, in granting the required permit(s) for a project on the site of a significant paleontological resource, the Planning Director shall attach reasonable conditions to ensure compliance with the purposes of this chapter. Such conditions could include but are not limited to, having a qualified paleontologist approved by the County present to observe, to examine and to evaluate the site during ground disturbing development activities; and to convey fossil finds to an appropriate museum or research institute.

ENVIRONMENTAL SETTINGS

Seismicity and Seismic Hazards in the County

All of Santa Cruz County is subject to some hazard from earthquakes, and there are several faults within the County. While the San Andreas fault is larger and considered more active, each fault is capable of generating moderate to severe ground shaking from a major earthquake. Consequently, large earthquakes can be expected in the future. The October 17, 1989 Loma Prieta earthquake (magnitude 7.1) was the second largest earthquake in central California history. The Zayante fault zone passes through a small part of the norther portion of the Program Area.

Zayante-Vergeles Fault. The Zayante Fault lies southwest of the San Andreas Fault and trends about 50 miles northwest from the Watsonville lowlands into the Santa Cruz Mountains. The southern extent of the Zayante Fault merges with the Vergeles Fault. It is at this junction that the fault is considered potentially active (California Geologic Survey, 2010). A potentially active segment of the Zayante-Vergeles Fault runs through approximately 110 acres of the northern portion of the Program Area (DOC 2019, County GIS 2022a).

Landslide and slope stability in Santa Cruz County

The north coast and mountain areas of the county have the greatest distribution of potential landslide areas; however, there are also more limited landslide hazard areas within the southern and urban areas of the county. Figure 6 shows the landslide hazard areas in the Program Area. Hazards due to landslides and slope instability include both naturally occurring features and slope failures that could result from site development (County GIS 2022a).

Landsliding occurs throughout Santa Cruz County but is centered primarily along the steeper slopes in the hills and mountains, along stream corridors, and along coastal bluffs and inlets. Large areas of the county are subject to several forms of landsliding as shown in Figure 6, but isolated slides occur throughout the county (County of Santa Cruz 2021a). The types of landsliding that occur in Santa Cruz County include:

- Coastal bluffs: Shallow landslides, debris flows and topples
- Rivers and streams: Shallow landslides, rotational landslides, and lateral spreading

- Hillslopes: Large deep composite landslides, and debris flows

Wildfire-Induced Debris Flows

Post-wildfire landslide hazards include fast moving, highly destructive debris flows that can occur in the years immediately after wildfires in response to high intensity rainfall events. Post-fire debris flows are particularly hazardous because such flows can occur with little warning, can exert great impulsive loads on objects in their paths, and can strip vegetation, block drainages, damage structures, and endanger human life. Wildfires could also potentially result in the destabilization of pre-existing deep-seated landslides over long time periods.

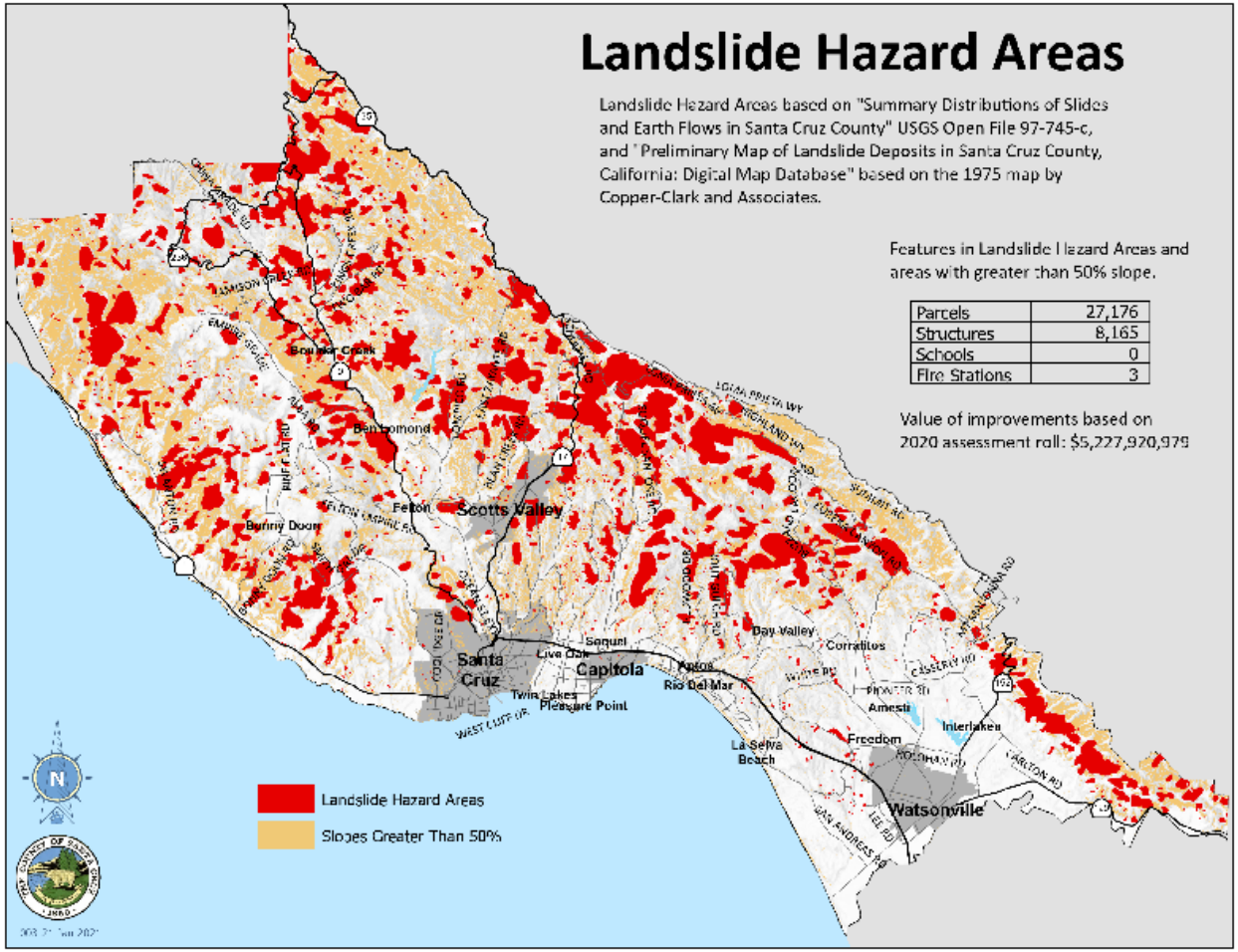


Figure 6 Landslide Hazard Area in the County

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following standard project requirements (SPRs), as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR EC-1 Limit Timeframe and Implement Erosion Control: All treatment activities will be completed prior to October 15. Work beyond October 15 will be specifically authorized in advance by the County of Santa Cruz and other permitting agencies. Revegetation and invasive species management can occur year-round. All inactive areas (defined as a five-day period) will have all necessary soil stabilization practices in place two days after identification of inactivity and/or before a rain event, whichever comes first. All erosion control will meet specifications in County of Santa Cruz Erosion Control Ordinance Chapter 16.22. An Erosion Control Plan will be provided to the Contractor, as needed.

SPR EC-2 Protect Disturbed Areas: All soil exposed as a result of project activities will be stabilized with straw mulch, through broadcast seeding, live planting, hydroseeding, by scattering native slash, lopped vegetation, wood chips or otherwise protected to match pre-construction conditions or better. Where straw or wood mulch is used, it will be tamped into the ground surface so that it is sufficiently in contact with the soil surface. If erosion control fabrics are used in revegetated areas, they will be slit in appropriate locations to allow for plant root growth. Only non-monofilament, wildlife-safe fabrics will be used.

SPR EC-3 Restore Soil Surface Conditions: Berms, ruts and other operator-caused ground disturbance (over 12 inches) in height/depth will be smoothed out to original contours before leaving the immediate work area.

SPR EC-4 Install Erosion Control Devices: Erosion control and sediment detention devices will be incorporated into the project design and implemented at the time of project implementation. These devices will be in place prior to October 15 and the onset of rains for the purposes of minimizing fine sediment and sediment to waterways and of detaining water to retain sediment on-site. These devices will be placed at all locations where the likelihood of sediment input exists. Sediment collected in these devices will be disposed of away from the collection site and outside riparian areas and flood hazard areas.

SPR EC-5 Water break Installation: Where appropriate, waterbars (waterbreaks) can be used to address concerns about bare soils and soil erosion. Waterbreaks placed will be placed at an approximate 45-degree angle, be cut diagonally to a minimum 6 inches into the firm roadbed or disturbed area, have a continuous firm embankment of at least 6 inches in height, and a width of 6 inches immediately adjacent to the lower edge of the waterbreak cut-out flow. Waterbreaks will be located to allow water to be discharged into some form of vegetative cover, duff (forest floor detritus), slash, rocks, or less erodible material wherever possible, and

will be constructed to provide for unrestricted discharge at the lower end of the waterbreak so that water will be discharged and spread in such a manner that erosion will be minimized.

SPR EC-6 Complete Grading Activities During Dry Period: All treatment activities will not be conducted during rain events or on any day for which the National Weather Service has predicted a 25% or more chance of at least 0.1 inch of rain in 24 hours (Predicted Rain Event). Effective erosion control, sediment control, and other protective measures will be installed no later than the day prior to the Predicted Rain Event, and prior to the start of any rainfall. Construction activities will resume after the rain has ceased, the National Weather Service predicts clear weather for at least 24 hours, and site conditions are dry enough to continue work without discharge of sediment or other pollutants from the project site.

SPR EC-7 Soil Saturation: The operation of heavy equipment for tree removal and skidding, and truck traffic will not occur when soils become saturated (from rain event). Saturated soil means that soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur. Indicators of saturated soil conditions may include, but are not limited to: (1) areas of ponded water, (2) pumping of fines from the soil or road surfacing material during Mechanized Equipment Operations, (3) loss of bearing strength resulting in the deflection of soil or road surfaces under a load, such as the creation of wheel ruts, (4) spinning or churning of wheels or tracks that produces a wet slurry, or (5) inadequate traction without blading wet soil or surfacing materials."

SPR EC-8 Review Erosion Control Measures at Project Site: The RCDSCC will oversee project implementation to confirm all planned erosion control measures are in place immediately following completion of treatment activities or prior to forecasted rain events. The RCDSCC will conduct annual monitoring to ensure the long-term outcomes have been achieved or propose corrective measures. Annual monitoring will continue and be reported in the Annual Report until erosion control measures are satisfactorily functioning.

SPR SOIL-1 Slope restrictions for mechanical equipment: Ground-based equipment (e.g., masticators, feller-bunchers) will be restricted to slopes less than 30%. This measure automatically excludes heavy equipment from all program area soils with erodibility ratings of "severe" or "very severe". Exceptions may be made for short pitches of 100 feet slope distance, up to 50 percent slope. Exposed soils resulting from ground-based equipment on slopes over 30% slope will be 90% covered with operational slash or low-weed-seed hay/straw to a minimum 2" depth prior to the winter period (Nov. 15 – April 1). This will occur after the conclusion of each individual operation and prior to each winter period for the life of the Program. When areas over 30% slope occur in a project area, then the following methods will be used to keep operators out of areas over 30% slope: flagging, mapping, and/or meeting with equipment operators. Hand work crews may work on slopes of any steepness, constrained only by crew supervisor judgement about personnel safety.

SPR SOIL-2 Ensure Slope Stability: The project proponent will require a Registered Professional Forester (RPF) or licensed geologist to evaluate treatment areas with slopes

greater than 50 percent for unstable areas and unstable soils. If unstable areas or soils are identified within the treatment area, are unavoidable, and will be potentially directly or indirectly affected by the treatment, a licensed geologist (P.G. or C.E.G.) will determine the potential for landslide, erosion, of other issue related to unstable soils and identity measures that will be implemented by the project proponent such that substantial erosion or loss of topsoil would not occur. Feller-bunchers will be restricted to slopes less than 30%.

SPR SOIL-3 Equipment Operation on Slopes: Equipment will operate parallel to the slope (up and down the fall line) to the greatest extent feasible.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
A. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
B. Strong seismic ground shaking?	☐	☐	☒	☐
C. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
D. Landslides?	☐	☐	☒	☐

Discussion (A through D):

Less than Significant. Although the Zayante Fault Zone is located within the northern portion of the Program Area, the proposed Program does not include any new development or any blasting and other impact strong enough to influence seismic activity or expose people to unreasonable seismic risk. See answer to (3) below for discussion related to landslides. The extremely small risk of landslides after implementation of SPRs would remain confined to the steeper locations in landslide hazard areas.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

Discussion: Less than Significant. While there is potential for erosion due to the use of established unpaved routes for heavy equipment operation and vehicle access, SPR EC-1 through 8 will ensure operation of vehicle on unpaved roads would not result in substantial soil erosion or the loss of topsoil. The operation of heavy equipment for tree removal and skidding, and truck traffic will not occur when soils become saturated from rain event (SPR EC-7) and there will be measures and restrictions for use of heavy equipment on slopes (SPR SOIL-1, SOIL-2, SOIL-3).

Non-native trees or plants that cannot be pulled will be girdled or cut and treated at the stump, with stumps left in place to decay naturally. Once the non-native tree removal is completed, the potential for erosion and topsoil loss due to the death of root systems is expected to be minimal. Studies of root strength loss after tree removal have shown that, on average, a 50% reduction in root reinforcement occurs between 14 to 66 months after tree removal, depending on species and other factors. In the case of eucalyptus removal, it is conservatively estimated that 50% root strength loss would occur just over a year after removal (O'Loughlin, C., & Watson, A. 1979). However, native seedling root systems are expected to grow substantially during this period, helping to mitigate erosion risk. Additionally, the root systems of larger vegetation will be left in place, further minimizing the potential for erosion.

If the program area includes expansive soils, the potential for increased erosion or soil instability may be higher, particularly during wet or dry cycles. Expansive soils could lead to greater instability, causing cracks or soil shifting, especially after root systems die and are removed. To mitigate this risk, measures will be taken to stabilize the soil. Areas with expansive soils will be carefully monitored, and appropriate erosion control devices (SPR EC-4, EC-8, SOIL-2) will be implemented to address potential instability. Additionally, vegetation removal will be timed to avoid periods of heavy rain or when the soils are saturated (SPR EC-6, EC-7) to minimize potential for erosion due to soil expansion and contraction.

Native seedlings and other vegetation will be planted to begin recolonizing the area immediately following eucalyptus removal, which will further stabilize the soil. Vegetation debris piles will be small (i.e. less than 10 ft in diameter) and localized and burn scars from pile burning will not be significant enough to lead to increased erosion or topsoil loss. With the implementation of the SPRs, the project is expected to have less than significant impacts on erosion and topsoil loss, even in areas with expansive soils.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?*	☐	☐	☒	☐

***Discussion*:**

Less than Significant. Following a review of mapped information and a field visit to the site, there is no indication that the development site is subject to a significant potential for damage caused by any of these hazards.

Landsliding is a general term that describes a wide variety of mass movements of soil and rock in response to gravity. Landsliding occurs as falls, topples, slides, spreads, flows, and a combination of these categories, and may change from one form of failure to another during their movement. Factors causing landsliding include the rock strength and rock structure, erosion weathering, high rainfall, steepness of slopes, recent fire activity, and human activities such as the removal of vegetation and inappropriate grading. there are also more limited landslide hazard areas within the southern and urban areas of the county (County of Santa Cruz 2021a).

Slope stability is a function of the height and steepness of slopes, the inherent strength of underlying soil and rock, moisture levels, and the presence and orientation of geologic planes of weakness such as bedding, joints, and faults. The Program could include work activities that use mechanized equipment on slope greater than 30%. Tree removal activities on steeper slopes could compromise slope stability thereby pose risks to human-induced landslides. However, the majority of the Program Area does not contain areas that are prone to landslides (Santa Cruz County 2022). In addition, implementation of SPR EC-1 through 8 and SPR SOIL-1 through 3 would further decrease the risk. Where work will occur in landslide hazard areas, the extremely small risk of landslides after implementation of SPRs would remain confined to the steeper locations.

Moreover, the reduction of eucalyptus tree could result in decrease in wildfire severity, thereby, reduce the risk of landslide from wildfire debris flow.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. *Be located on expansive soil, as defined in section 1803.5.3 of the California Building Code (2016), creating substantial direct or indirect risks to life or property?*	☐	☐	☐	☒

Discussion: **No Impact**. While parts of the Program Area, including Freedom and many small parcels scattered across Larkin Valley and Corralitos, are located on expansive soils, there is no building or road construction, or relocation involved with the proposed Program. Expansive soils are only a hazard to buildings, roads and bridges; they pose no special hazard to the activities proposed under the Program. No impact would occur.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
5. *Have soils incapable of adequately supporting the use of septic tanks, leach fields, or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*	☐	☐	☐	☒

Discussion: **No Impact**. No septic systems are proposed. The program does not involve the installation of septic tanks or alternative wastewater disposal systems. No impact would occur.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
6. *Directly or indirectly destroy a unique paleontological resource or site of unique geologic feature?*	☐	☐	☐	☒

Discussion: **No Impact**. No unique paleontological resources or sites or unique geologic features are known to occur in the vicinity of the project. A query was conducted of the mapping of identified geologic/paleontological resources maintained by the County, and there are no records of paleontological or geological resources in the vicinity of the project parcel. No direct or indirect impacts are anticipated.

Cumulative impacts: The cumulative impacts of the program on soils and geological resources are expected to be negligible.

H. Greenhouse Gas Emissions

Regulatory Setting

FEDERAL

In Massachusetts et al. v. EPA et al., 549 U.S. 497 (2007), the Supreme Court of the United States ruled that carbon dioxide (CO_2) fit within the definition of "air pollutant" under the federal Clean Air Act and that EPA has the statutory authority to regulate GHG emissions. Treatment activities under the Program have the potential to generate GHG emissions through use of off-road equipment, machine-powered hand tools, helicopters, vehicles for worker commute, trucks for materials delivery and hauling, and prescribed burning.

STATE

Statewide GHG Emission Targets and the Climate Change Scoping Plan

Reducing GHG emissions in California has been the focus of state government policy for approximately two decades (CARB 2022). Emission targets established by the state legislature include reducing statewide GHG emissions to 1990 levels by 2020 (AB32, Statutes of 2006) and to 40 percent below 1990 levels by 2030 (SB 32, Statutes of 2016). Executive Order S-3-05 calls for statewide GHG emissions to be reduced to 80 percent below 1990 levels by 2050. Executive Order B-55-18 calls for California to achieve carbon neutrality by 2045 and achieve and maintain net negative GHG emissions thereafter. These targets are in line with the scientifically established levels needed in the U.S. to limit the rise in global temperature to no more than 2 degrees Celsius, the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected. These targets also are consistent with efforts to further limit the temperature increase to 1.5 degrees Celsius (IPCC 2018).

California's 2022 Climate Change Scoping Plan (2022 Scoping Plan), prepared by the California Air Resources Board (CARB), outlines the main strategies California will implement to achieve carbon neutrality by 2045 or earlier , outlining a technologically feasible, cost- effective, and equity-focused path to achieve the state's climate target. It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste). Statewide GHG emission reduction targets and the 2022 Scoping Plan are applicable to the Program because GHG emissions would be generated by treatment activity implemented under the Program. Furthermore, an objective of the Program is to contribute to meeting California's GHG emission goals by managing forests and other natural and working lands as a net carbon sink, consistent with the 2022 Scoping Plan.

There have been three previous Scoping Plans. Previous plans have focused on specific greenhouse gas (GHG) reduction targets for our industrial, energy, and transportation sectors — first to meet 1990 levels by 2020, then to meet the more aggressive target of 40 percent below 1990 levels by 2030. While the 2017 Scoping Plan identifies a 15–20 million metric tons of carbon dioxide equivalent (MMTCO2e) reduction from business-as-usual emissions from

the natural and working lands sector to meet the state's 2030 target, the 2022 scoping plan, addressing recent legislation and direction from Governor Newsom, extends and expands upon these earlier plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. The 2022 scoping plan also takes the unprecedented step of adding carbon neutrality as a science-based guide and touchstone for California's climate work.

This section includes lands used for agriculture, grazing, and forestry. This reduction would be achieved through carbon sequestration in trees, other vegetation, soils, and aquatic sediment (CARB 2022). Of the twenty largest wildfires ever recorded in California, nine occurred in 2020 and 2021. The worst wildfire season in California's recorded history was in 2018, with over 24,226 structures damaged or destroyed and over 100 lives lost. The largest wildfire season ever recorded in state history was in 2020, where more than 4.3 million acres burned, albeit at different intensity and with varying ecological impacts, and over 112 million metric tons of carbon dioxide (CO_2) emitted into the atmosphere (CARB 2020). California's climate objective for natural and working lands is to maintain them as a carbon sink (i.e., net zero or negative GHG emissions) and, where appropriate, minimize the net GHG and black carbon emissions associated with management, biomass utilization, and wildfire events. To achieve this objective, the 2022 Scoping Plan focuses on continued research and development to advance the state of science on carbon dynamics, develop a natural and working lands inventory, and directs the CNRA and other state agencies to complete a Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal of Executive Order B-55-18. Specifically, the 2022 Scoping Plan acknowledges the role of fuel reduction treatments and prescribed burns in managing natural and working lands to reduce GHG emissions (CARB 2022). Development of the Natural and Working Lands Climate Change Implementation Plan is discussed in greater detail below.

Draft 2030 Natural and Working Lands Implementation Plan

In a joint, interagency effort, the CalEPA, CDFA, CNRA, CARB, and SGC released the Draft California 2030 Natural and Working Lands Climate Change Implementation Plan in January 2019. The draft plan is specific to the natural and working lands sector, which includes farmland, rangeland, forests, grasslands, wetlands, riparian areas, seagrass, and urban green space. The draft plan addresses the carbon flux from this sector, including the ever-dynamic changes in both GHG emissions and carbon sequestration associated with the management of these lands. It is estimated that California's natural and working lands lost approximately 170 MMT of carbon between 2001 and 2014. Most of these losses were due to wildfire. This loss of carbon is equivalent to cumulative emissions of 630 MMTCO2e of previously sequestered carbon removed from the land over the same period (applying the atomic weight ratio of 3.67 for carbon to CO2). However, not all the carbon lost was emitted to the atmosphere as CO2. Some carbon leaves the land but persists in durable wood products. Other carbon losses are part of normal ecosystem function (CalEPA et al. 2019). The draft plan serves as a multi-disciplinary approach to conserve and maintain a resilient natural and working lands sector that will gradually shift the natural and working lands sector from being a net carbon emitter

to being a net carbon sink, while also improving air quality, water quality, wildlife habitat, recreation, and providing other benefits. The draft plan sets goals for, at a minimum, increasing the rate of state-funded soil conservation practices fivefold, doubling the rate of state-funded forest management and restoration efforts, tripling the rate of state-funded oak woodland and riparian reforestation, and doubling the rate of state-funded wetland and seagrass restoration (CalEPA et al. 2019). The measures included in the draft plan are projected to result in cumulative emissions of 21.6 to 56.8 MMTCO2e by 2030 and cumulative emissions reduction of -36.6 to -11.7 MMTCO2e by 2045 (CalEPA et al. 2019).

The draft plan indicates that these GHG reductions will be met through a variety of practices under four broad pathways: conservation, forestry, restoration, and agriculture. One suite of practices is called, "Forestry – Improved Forest health and reduced wildfire severity." This suite of practices includes prescribed fire, mechanical thinning, and understory treatment. It aims to "restore health and resilience to overstocked forests and prevent carbon losses from severe wildfire, disease, and pests."

The implementation goals for this practice includes 23,800–73,300 acres of prescribed fire per year, 59,000–73,000 acres of thinning per year, and 23,500–25,300 acres of understory treatment per year (CalEPA et al. 2019). CAL FIRE is identified as one of the implementing agencies of this practice. The draft plan notes that, although fuel reduction treatments involve near-term carbon costs, they result in long-term net carbon benefits in California. Fuel reduction activities, such as mechanical thinning and prescribed fire, reduce stand densities and fuel loads, restore the structure and composition of forest ecosystems, and lower the potential for damaging, high-severity fire, which is currently the primary cause of GHG emissions and carbon loss from the land sector. In the long-term, these activities are expected to result in climate benefits and healthier, more stable, and more resilient forests (CalEPA et al. 2019) An objective of the Program is to contribute to meeting California's GHG emission goals by managing forests and other natural and working lands as a net carbon sink, which would be consistent with the Draft California 2030 Natural and Working Lands Climate Change Implementation Plan.

California Forest Carbon Plan

In May 2018, CAL FIRE, in coordination with CNRA and CalEPA, released the California Forest Carbon Plan. The plan serves to implement policies to meet the forest carbon goals embodied in the 2017 Scoping Plan and is relevant to the Program because some treatment activities would be implemented in forests and because an objective of the Program is to contribute to meeting California's GHG emission goals by managing forests and other natural and working lands as a net carbon sink, consistent with the California Forest Carbon Plan. Currently, much of California's forests are unhealthy, supporting unnatural density that lack resilience to drought, disease, insect and parasite infestation, and large, severe wildfire. The plan describes forest conditions across California; provides a projection of future conditions in consideration of climate change; and describes goals and related specific actions that may be

taken to improve forest health, including resilient carbon sequestration; and provides principles and policies to guide and support these actions (CAL FIRE et al. 2018). Specifically, the plan identifies the following targets for forest restoration and treatment activities on non-federal forest lands:

- By 2020, increase the rate of forest restoration and fuels treatment, including prescribed fire, from the recent average of 17,500 acre/years to 35,000 acres/year.
- By 2030, further increase the rate of forest restoration and fuels treatment to 60,000 acres/year.
- By 2030, increase the area reforested annually by 25 percent above the current level.
- By 2025, expand areas of high priority habitat by 5 percent above current levels, as provided in the State Wildlife Action Plan.
- Ensure that timber operations conducted under the Forest Practice Act and Rules contribute to the achievement of healthy and resilient forests that are net sinks of carbon.
- Promote increasing the acreage of forest carbon projects and remove barriers to their implementation.
- Increase rate of treatment to approximately 500,000 acres per year on non-federal lands to make an ecologically meaningful difference at a landscape scale. This estimate provided by CAL FIRE is an aspirational goal based on consideration of ecological need and predictions of capacity to implement treatments. This acreage is currently more than what CAL FIRE considers operationally feasible. It should be considered a target to work toward and is achievable pending increased resources and expanded markets for woody materials.

Forest Management Task Force

California's Forest Management Task Force is an entity organized to protect the environmental quality, public health, and economic benefits provided by healthy forests. Its goals include, but are not limited to, implementing Executive Order B-52-18, improve and enhance forest health and resiliency, minimize regulatory barriers for prescribed fire and fuels reduction projects, and improve public education regarding the benefits of a healthy forest (Forest Management Task Force 2021). The Forest Management Task Force is relevant to the Program because objectives of the Program include increasing the use of prescribed burning as a vegetation treatment tool and improving ecosystem health in fire-adapted habitats.

AB1504 Forest Carbon Inventory

AB 1504 (Statutes of 2010) emphasizes the critical role California's forests play in carbon sequestration and formalizes the Board of Forestry and Fire Protection's (the Board) responsibility in meeting or exceeding the statewide GHG emission reduction targets for the forest sector. AB 1504 requires the Board to ensure that its rules and regulations that govern the harvesting of commercial forest tree species consider the capacity of forest resources to sequester carbon sufficient to meet or exceed the state's GHG reduction requirements for the forestry sector by 2020. The initial AB 32 Scoping Plan adopted by CARB in 2008 set a goal of maintaining the forest carbon sink with a net annual sequestration rate of 5 MMTCO2e/year (CARB 2008), a rate that was reiterated in the 2017 Scoping Plan (CARB 2017).

CAL FIRE's Fire and Resource Assessment Program develops an annual Forest Ecosystem and Harvested Wood Product Carbon Inventory (Forest Carbon Inventory) in collaboration with the U.S. Forest Service's (USFS) Forest Inventory and Analysis Program, USFS Pacific Northwest Research Station, and the University of Montana Bureau of Business and Economic Research. This annual Forest Carbon Inventory report assists the Board in assessing whether the goal of sequestering 5 MMTCO2e/year of forest carbon is being met. This report also informs the goals identified in the California Forest Carbon Plan, discussed above. The annual Forest Carbon Inventory has been produced for 2015, 2016, and 2017.

Forest ecosystem carbon estimates for California are based on plot re-measurement of the same trees over time. This method captures and quantifies growth, tree removal, and tree mortality. Harvested wood product carbon estimates are based on a model created by Montana Bureau of Business and Economic Research and the USFS, which follows annual harvest volumes through their timber product class allocation (e.g., softwood sawlogs, softwood pulpwood) and primary product allocation (e.g., softwood lumber, softwood plywood). Among other things, the model estimates how much carbon remains stored in durable wood products in use and at solid waste disposal sites. According to the most recent Forest Carbon Inventory, California's forests are sequestering 25.2 MMTCO2e/year, which exceeds the net annual sequestration target of 5 MMTCO2e (Christensen et al. 2021).

Transportation-Related Standards and Regulations

California has also passed legislation addressing GHG emissions associated with industrial sources, transportation, electricity generation, and energy consumption, as summarized below. Treatment activities under the Program would involve fuel consumption and the use of on-road and off-road vehicles, which are subject to transportation-related standards and regulations.

As part of its Advanced Clean Cars program, CARB established GHG emission standards and fuel efficiency standards for fossil fuel–powered on-road vehicles. With respect to ZEVs, ACC II, adopted in 2022, is designed to reach 100% new vehicle ZEVs and clean plug-in hybrid-electric vehicles in California by the 2035 model year (Section 1961.4, Title 13, CCR).

Executive Order B-48-18, signed into law in January 2018, requires all state entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as 200 hydrogen fueling stations and 250,000 electric vehicle–charging stations installed by 2025. It specifies that 10,000 of these charging stations must be direct-current fast chargers.

CARB adopted the Low Carbon Fuel Standard (LCFS) in 2007 to reduce the carbon intensity of California's transportation fuels. The LCFS applies to fuels used by on-road motor vehicles and by off-road vehicles, including construction equipment. In September 2018, CARB approved amendments to the LCFS to require a 20 percent reduction in carbon intensity by 2030 to further the state towards the 2030 GHG reduction prepare for climate risks. The plan includes 76 policy recommendations across 11 policy sectors. One of the key sectors is forestry, which includes: restoring and protecting forest ecosystem function by reintroducing fire and improving management, protecting California's forest base, and enhancing watershed health; supporting community resilience by rebuilding California's forest management workforce, expanding the extent and health of California's urban tree canopy, and advancing fire preparedness; and fostering creative solutions to sustainably use biomass from fuels reduction activities and to better understand climate trends in forests via research and monitoring.

LOCAL

Santa Cruz County Climate Action and Adaptation Plan

The 2022 Santa Cruz Climate Action and Adaptation Plan (CAAP) casts targets for future goals to address climate change and provide the actionable strategies and measurable objectives and steps towards achieving those targets. The CAAP listed 29 strategies related to energy, transportation, water, waste, Natural/Working Lands, wildfire prevention &mitigation strategies, and government operations. The Program is consistent with the following strategies and goals related to Natural/Working Lands and wildfire prevention and mitigation (County of Santa Cruz 2022):

- Strategy 17: Enhance carbon sequestration strategies through conservation and restoration of natural habitats, sustainable farming practices, and carbon capture technologies.
- Strategy 19: Protect at-risk communities from wildfire risk through improved forest health management.
- Strategy 20: Reduce wildfire risk to structures in at-risk communities.

Santa Cruz County General Plan/Local Coastal program

The Agriculture, Natural Resources + Conservation Element of the GP/LCP implements objectives of the County's Climate Action Strategy (CAS) to increase energy efficiency and strategies for natural systems and agriculture that foster adaption to climate change. The Program is consistent with the goal ARC-3 of protecting and restoring biological resources, in light of their importance in maintaining a healthy environment and mitigating the effects of climate change.

Environmental Setting

SANTA CRUZ COUNTY GHG EMISSION INVENTORY

The County of Santa Cruz developed GHG emissions inventories from government operations and from community activities in unincorporated areas of the county. The County's 2019 GHG inventory was originally completed by the AMBAG as part of a regional GHG emissions inventory in September 2021. The 2019 Inventory was further updated by AMBAG in June 2022 during the completion of the County's 2020 GHG inventory to incorporate updated modeling of estimating Transportation related emissions. The 2019 inventory was completed in accordance with the Community Protocol.

As shown in Figure 7, the Santa Cruz mass emissions for 2019 is 691,262 MT of CO2e. GHG Emissions by Category shows that nearly 70% of all emissions in unincorporated Santa Cruz County are from the transportation sector, and another nearly 25% from our built environment. GHG Emissions by Category below shows the breakdown by sector of the GHG inventory, with 70.4% of GHG emissions coming from transportation, which includes passenger vehicles (51.2%), commercial vehicles (13.6%), public transit (1.0%) and off-road equipment (4.6%). Residential and nonresidential natural gas and propane total 24.1% of GHG emissions compared to 0.4% for both residential and nonresidential electricity. The amount of GHG from transportation is the most significant contributor, with natural gas and propane from the built environment being next (County of Santa Cruz 2022).

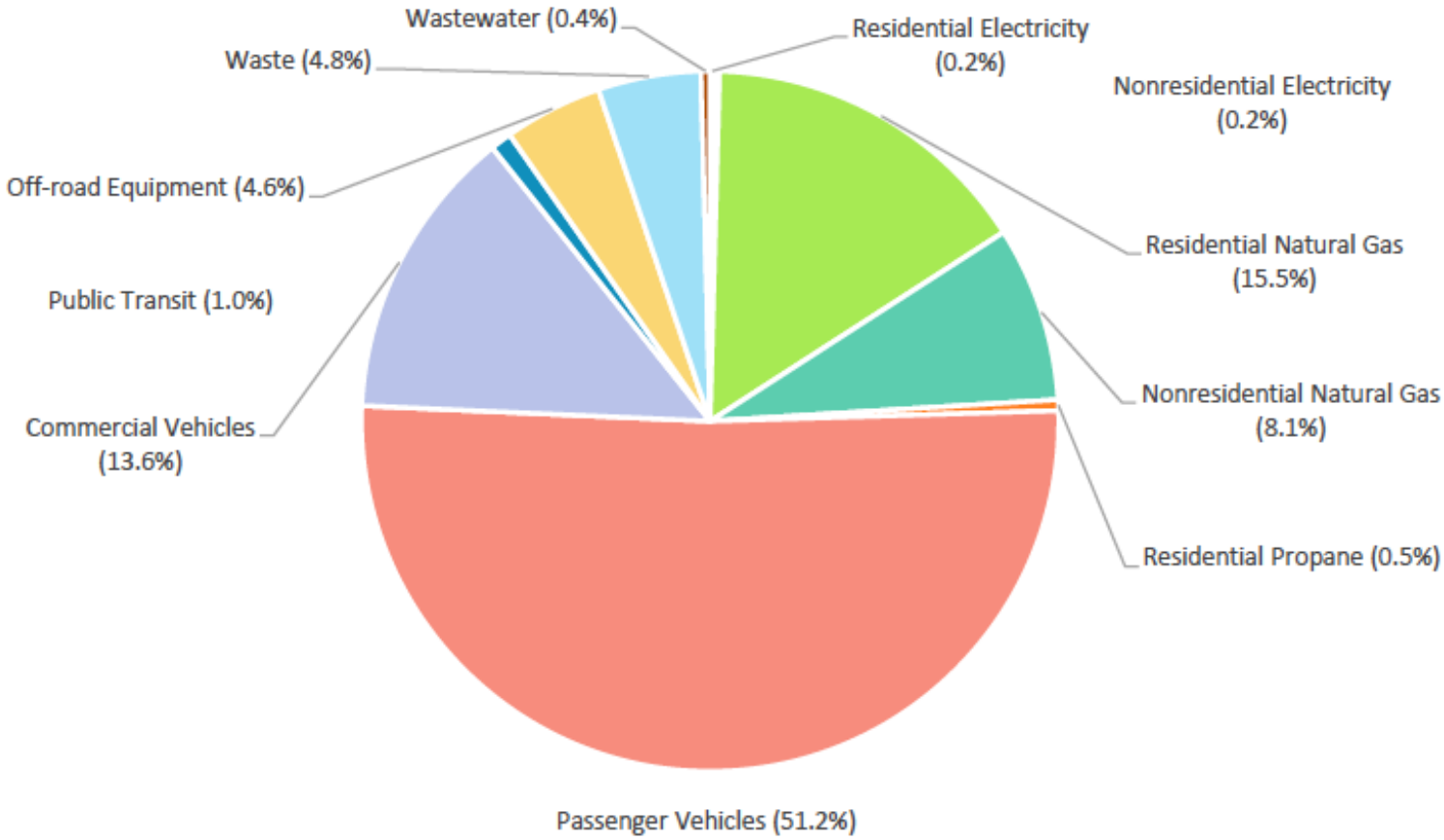


Figure 7 GHG Emissions by Category

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following SPRs, as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR LEDA-3 Protect Mature Trees: No mature, native, healthy trees will be removed from the project area.
SPR VEG-3 Restore Project Area to Pre- Construction Condition or Better: On completion of work, site contours will be returned to preconstruction conditions or designed to provide increased biological and hydrological functions. Where disturbed, topsoil will be conserved for reuse during restoration, to the extent practicable. See Attachment A for detailed description of this SPR.
SPR VEG-4 Restore Project Area with Native Plant Communities: Prepare project-level restoration plan guided by Attachment D, Restoration Program Guidelines, and in coordination with the RCD, the County, and CDFW. Restoration plans will be completed based on site-specific requirements. Native plant assemblages appropriate to the specific geographic area will be the prioritized source of planting materials for revegetation. Plants salvaged from the site, plants propagated vegetatively from on-site plants or plants very close to the site, or plants grown from seed collected from the site or plants very close to the site are preferred. Plant species that are native to the broader region (e.g., California Central Coast) can also be acceptable. Non-native, non-invasive plant species for erosion control (ie common barley) can also be used. Plants rated as invasive by Cal- IPC or designated as noxious weeds by California Department of Food and Agriculture are prohibited from use.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*	☐	☐	☒	☐

Discussion:

Less than Significant. The proposed Program would result in a temporary, localized increase in GHG emissions, primarily from pile burning, equipment operation, and worker commutes. While the removal of eucalyptus trees may lead to a short-term reduction in carbon sequestration capacity, the long-term restoration of native woodland is expected to enhance carbon storage. Additionally, the removal of eucalyptus—which produces highly flammable leaf litter—would reduce the risk of catastrophic wildfires, which are major sources of GHG emissions.

All prescribed burning activities will be subject to oversight by the MBARD, including the development and implementation of Smoke Management Plans. With compliance to these regulatory requirements and applicable SPRs, GHG emissions associated with the Program would not result in a significant impact. [3]

Although the removal of mature non-native trees may cause a short-term release of carbon, the Program will preserve healthy native trees and replant native vegetation following treatment (SPR LEDA-3, VEG-3, and VEG-4). This may result in a temporary reduction in sequestration capacity until the new vegetation becomes established. However, this short-term effect is expected to be minor relative to the total carbon stock in Santa Cruz County and would not result in a significant impact under CEQA.

Over time, restoration of long-lived native woodlands will increase carbon storage and resilience. By reducing the likelihood of catastrophic wildfire, the Program improves the chances of survival for vegetation within and adjacent to the treatment areas, allowing more carbon to remain sequestered in the landscape. This proactive management may help prevent the sudden, large-scale emissions that result from wildfires, effectively "flattening the curve" of climate-forcing emissions by spreading them over a longer period.

Therefore, the net effects of the Program on GHG emissions are expected to be less than significant, and no mitigation is required.

Cumulative Impacts: Cumulative effects include a discussion of the combined, incremental impacts of human activities. For GHG emissions and carbon sequestration, the area for consideration is the airshed and at the County level. Past and present emission producing activities and carbon sequestration are considered as the current condition of the air and carbon resource. Project emissions would temporarily increase GHG emissions in the airshed and the County from pile burning, if conducted, as well as temporal loss in the carbon sequestration ability of eucalyptus trees while native oak woodland establish. However, their direct, indirect and cumulative effects would be regulated by the Monterey Bay Air Quality Management District in order to prevent adverse impacts and exceedances of health standards. The proposed treatments would reduce future potential wildfire smoke and GHG emissions and reduce potential loss of sequestered carbon.

[3] BAAQMD has established thresholds of significance for GHG emissions meant primarily for evaluating GHGs associated with land-use development or stationary-source projects, but the thresholds are not recommended for vegetation-management projects.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*	☐	☐	☒	☐

Discussion: **Less than Significant**. See the discussion under H-1 above. Impacts are expected to be less than significant, and no mitigation is required.

I. Hazards and Hazardous Materials

Regulatory Setting

FEDERAL

EPA is the agency primarily responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Relevant federal regulations pertaining to hazardous materials are contained mainly in CFR Titles 29, 40, and 49. Hazardous materials, as defined in the CFR, are listed in 49 CFR Section 172.101. Management of hazardous materials is governed by the following laws:

- Resource Conservation and Recovery Act (RCRA) of 1976 (42 USC Section 6901 et seq.);
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, also called the Superfund Act) (42 USC Section 9601 et seq.); and
- Superfund Amendments and Reauthorization Act (SARA) of 1986 (Public Law 99-499).

These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials, which are applicable primarily to the Program's use of herbicides. The EPA provides oversight and supervision for federal Superfund investigation/remediation projects, evaluates remediation technologies, and develops hazardous materials disposal restrictions and treatment standards.

Resource Conservation and Recovery Act

RCRA establishes a framework for national programs to achieve environmentally sound management of both hazardous and non-hazardous wastes. RCRA was designed to protect human health and the environment, reduce/eliminate the generation of hazardous waste, and conserve energy and natural resources. RCRA also promotes resource recovery techniques. A waste would legally be considered hazardous if it is classified as ignitable, corrosive, reactive, or toxic. Under RCRA, the EPA regulates hazardous waste from the time that the waste is generated until its final disposal ("cradle to grave"). The Hazardous and Solid Waste Amendments of 1984 both expanded the scope of RCRA and increased the level of detail in many of its provisions. The Hazardous Waste Management subchapter of the RCRA deals with

a variety of issues regarding the management of hazardous materials, including the export of hazardous waste, state programs, inspections of hazardous waste disposal facilities, enforcement, and the identification and listing of hazardous waste. Under RCRA regulations, commercial chemical products such as pesticides and herbicides would become "solid wastes" (and thus, potentially, hazardous wastes) at the point where the project proponent decides to discard them, if the pesticide product is listed in 40 CFR 261.31 or 261.33, or exhibits a hazardous waste characteristic identified in 40 CFR 261.21 through 261.24.

Comprehensive Environmental Response, Compensation, and Liability Act and Superfund Amendments and Reauthorization Act

Hazardous substances are a subclass of hazardous materials. They are regulated under the CERCLA and SARA. Under CERCLA, the EPA has authority to seek out the parties responsible for releases of hazardous substances and ensure their cooperation in site remediation. CERCLA also provides federal funding (the "Superfund") for remediation. SARA Title III, the Emergency Planning and Community Right-to-Know Act (EPCRA), requires companies to declare potential toxic hazards to ensure that local communities plan ahead for chemical emergencies. The EPA maintains a National Priority List of uncontrolled or abandoned hazardous waste sites identified for priority remediation under the Superfund program. The EPA also maintains the Comprehensive Environmental Response, Compensation, and Liability Information System database that contains information on hazardous waste sites, potentially hazardous waste sites, and remedial activities across the nation.

For releases of hazardous substances, the federal government has established Superfund reportable quantities. CERCLA would apply to the program if a hazardous materials release were to occur during treatment activities above an established reportable quantity for the substance.

Emergency Planning Community Right-To-Know Act

EPCRA was included under the SARA law and is commonly referred to as SARA Title III. EPCRA was passed in response to concerns regarding the environmental and safety hazards posed by the storage and handling of toxic chemicals. EPCRA establishes requirements for federal, state and local governments, Indian tribes, and industry regarding emergency planning and "Community Right-to-Know" reporting on hazardous and toxic chemicals. SARA Title III requires states and local emergency planning groups to develop community emergency response plans for protection from a list of extremely hazardous substances (40 CFR Section 355 Appendix A). The Community Right-to-Know provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. In California, SARA Title III is implemented through the California Accidental Release Prevention Program.

Some commonly used pesticides are included in the SARA Title III List of Extremely Hazardous Substances. This list identifies Threshold Planning Quantities (TPQs) and

reportable quantities for reach extremely hazardous substance. The TPQ is the amount of a substance in pounds in your possession at any one time that is at or above the listed quantity of active ingredients. Once this amount or more is in a person's possession, it must be reported within 60 days according to Sara Title III requirements (University of Missouri 2019). EPCRA would apply to the Program if any extremely hazardous materials are proposed for use at or above their established TPQs or are released above the established reportable quantities for the substance.

Occupational Health and Safety Administration

Enacted in 1970, the Occupational Safety and Health Act established the Occupational Health and Safety Administration (OSHA) in order to ensure healthy working conditions in the U.S. There are approximately 2,100 OSHA inspectors, who, along with other experts and support staff, establish and enforce protective standards in the workplace. California, under an agreement with OSHA, operates an occupational safety and health program in accordance with Section 18 of the Occupational Safety and Health Act of 1970. The program applies to all public and private sector places of employment in the State, with the exception of federal employees, the U.S. Postal Service, private sector employers on Native American lands, maritime activities on the navigable waterways of the U.S., private contractors working on land designated as exclusive Federal jurisdiction, and employers that require Federal security clearances.

The OSHA Hazard Communication Standard (29 CFR Section 1910.1200) requires that workers be informed of the hazards associated with the materials they handle. For instance, manufacturers must appropriately label containers, Material Safety Data Sheets must be available in the workplace, and employers must properly train workers. Workers at hazardous waste sites must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response regulations (29 CFR Section 1910.120).

Implementation of treatments under the Program would require compliance with these federal and State safety standards and practices regarding workplace safety and providing a safe and healthy environment for workers.

Federal Insecticide, Fungicide, and Rodenticides Act

The Federal Insecticide, Fungicide, and Rodenticides Act (FIFRA) provides the basis for regulation, sale, distribution, and use of pesticides in the United States. FIFRA authorizes the EPA to review and register pesticides for specified uses. The EPA also has the authority to suspend or cancel the registration of a pesticide if subsequent information shows that continued use would pose unreasonable risks. FIFRA has been amended by the Pesticide Registration Improvement Act of 2003, which provides for the enhanced review of covered pesticide products, to authorize fees for certain pesticide products, and to extend and improve the collection of maintenance fees.

As a part of the federal registration process, the EPA classifies each pesticide product as a "general use pesticide" or "restricted use pesticide" (RUP) based on the potential for the

product to cause unreasonable adverse effects on human health or the environment. Only certified pesticide applicators or those under the supervision of a certified pesticide applicator may use a RUP. Certification is a statement by the certifying agency that the applicator is competent and authorized to use or supervise the use of restricted pesticides (40 CFR Parts 152, 153, 156, 158, and 162).

Individuals applying any type of pesticide must do so consistent with this federal law as well as state and tribal laws and regulations. In general, states have the primary authority within the state for compliance monitoring and enforcement for the use of pesticides in violation of labeling requirements. The equivalent regulations at the state level are described below in under "State." FIFRA requirements, as enforced by the state (such as adhering to herbicide labels and application instructions), would apply to the use of herbicides under the proposed Program.

Worker Protection Standard

The EPA oversees pesticide use through the Worker Protection Standard (WPS). The WPS is a regulation for agricultural pesticides which is aimed at reducing the risk of pesticide poisonings and injuries among agricultural workers and pesticide handlers. WPS protects employees on farms, forests, nurseries, and greenhouses from occupational exposure to agricultural pesticides. The WPS contains requirements for pesticide safety training, notification of pesticide applications, use of personal protective equipment, restricted-entry intervals after pesticide application, decontamination supplies, and emergency medical assistance. The regulation covers two types of workers:

- Pesticide handlers: those who mix, load, or apply agricultural pesticides; clean or repair pesticide application equipment; or assist with the application of pesticides in any way.
- Agricultural workers: those who perform tasks related to the cultivation and harvesting of plants on farms or in greenhouses, nurseries, or forests.

The WPS requirements would apply to herbicide use proposed under the Program to protect the health and welfare of pesticide handlers and appliers.

U.S Department of Transportation

The DOT, in conjunction with the EPA, is responsible for enforcement and implementation of federal laws and regulations pertaining to the transportation of hazardous materials. The Hazardous Materials Transportation Act of 1974 (49 USC 5101 et seq.) directs the DOT to establish criteria and regulations regarding safe storage and transportation of hazardous materials. Hazardous materials regulations are contained in 49 CFR 171–180, and address transportation of hazardous materials, types of materials defined as hazardous, and the marking of vehicles transporting hazardous materials. In particular, 49 CFR 173, titled "Shippers' General Requirements for Shipments and Packaging," defines hazardous materials for transportation purposes; within this portion of the code, 49 CFR 173.3 provides specific packaging requirements for shipment of hazardous materials, and 49 CFR 173.21 lists

categories of materials and packages that are forbidden for shipping. 49 CFR 177, titled "Carriage by Public Highway," defines unacceptable hazardous materials shipments.

The DOT Pipeline and Hazardous Materials Safety Administration has designated many chemical compounds, including some pesticides, as hazardous materials. If transport of one or more of these hazardous pesticides is required under the Program, compliance with DOT Regulation 49 CFR 100-185 would be required.

STATE

The Safe Drinking Water and Toxic Enforcement Act

This Safe Drinking Water and Toxic Enforcement Act (Proposition 65), passed as a ballot initiative in 1986, requires the state to annually publish a list of chemicals known to the state to cause cancer or reproductive toxicity so that the public and workers are informed about exposures to potentially harmful compounds. California EPA's Office of Environmental Health Hazard Assessment administers the act and evaluates additions of new substances to the list. Proposition 65 requires companies to notify the public about chemicals in the products they sell or release into the environment, such as through warning labels on products or signs in affected areas and prohibits them from knowingly releasing significant amounts of listed chemicals into drinking water sources. For pesticide use in a workplace setting, Proposition 65 requirements are met through compliance with State of California's Department of Pesticide Regulation (DPR) regulations, further described below under "California Pesticide Regulatory Program."

California Hazardous Waste Control Act

The California Hazardous Waste Control Act (HWCA) regulates the generation, treatment, storage, and disposal of hazardous waste (California Health and Safety Code Section 2510 et seq.). Hazardous waste is any material or substance that is discarded, relinquished, disposed of, or burned, or for which there is no intended use or reuse, and the material or substance causes or significantly contributes to an increase in mortality or illness; or the material or substance poses a substantial present or potential hazard to human health or the environment. These materials or substances include spent solvents and paints (oil and latex), used oil, used oil filters, used acids and corrosives, and unwanted or expired products (e.g., pesticides, aerosol cans, cleaners). If the original material or substance is labeled Danger, Warning, Toxic, Caution, Poison, Flammable, Corrosive or Reactive, the waste is very likely to be hazardous. The HWCA would apply to any Program activities that require storage or disposal of hazardous waste (primarily pesticide use under the Program).

California Pesticide Regulatory Program

DPR regulates the sale and use of pesticides in California. DPR is responsible for reviewing the toxic effects of pesticide formulations and determining whether a pesticide is suitable for use in California through a registration process. Although DPR cannot require manufacturers to make changes in labels, it can refuse to register products in California unless manufacturers address unmitigated hazards by amending the pesticide label. Consequently, many pesticide labels that are already approved by the EPA also contain California-specific requirements. Pesticide labels defining the registered applications and uses of a chemical are mandated by the EPA as a condition of registration. The label includes instructions telling users how to make sure the product is applied only to intended target pests and includes precautions the applicator should take to protect human health and the environment. For example, product labels may contain such measures as restrictions in certain land uses and weather (i.e., wind speed) parameters.

DPR also designates pesticides that can impair human health or pose hazards to the environment as "restricted materials" (similar to RUPs classification by EPA). Pesticides designated as restricted materials (state or federal) have additional use requirements which may include some or all of the following: (1) applicator certification from DPR or the applicable CAC, (2) enhanced supervision requirements for uncertified applicators, (3) a restricted materials permit from the CAC, and (4) additional requirements established by regulation. DPR usually designates restricted materials on the basis of active ingredient, concentration, container size, or use patterns on the labeling. The goal is to allow determination of the status by examining the product container and its labeling (CDPR, 2025).

Title 3, CCR section 6450, et. seq. further restricts the use of certain pesticides or active ingredients. These restrictions apply to all pesticide applications approved through the restricted materials permit process (through the applicable CAC). Regulatory restrictions may include the amount of pesticide that can be applied; methods of application; where the pesticide can be applied; or additional personal protective equipment that must be worn or used. The permit application process provides CACs with the opportunity to discuss the additional use restrictions with the property operator or pest control business well in advance of the actual application. Unlike permit conditions that are established by the CAC, regulatory use requirements are state regulations and are not attached to the permit (DPR 2018).

All herbicides use under the Program would be required to comply with DPR regulations, such as adhering to pesticide labels and application directions, wearing personal protective equipment, and obtaining a restricted material permit if herbicides designated as 'restricted materials' are proposed for use.

California Department of Toxic Substances Control

The California Department of Toxic Substances Control (DTSC), a division of the CalEPA, has primary regulatory responsibility over hazardous materials in California, working in conjunction with the EPA to enforce and implement hazardous materials laws and regulations. DTSC can delegate enforcement responsibilities to local jurisdictions.

The hazardous waste management program enforced by DTSC was created by the HWCA (California Health and Safety Code Section 25100 et seq.), which is implemented by regulations described in the CCR Title 26. The state program is similar to, but more stringent than, the federal program under RCRA. The regulations list materials that may be hazardous and establish criteria for their identification, packaging, and disposal.

Environmental health standards for management of hazardous waste are contained in CCR Title 22, Division 4.5. In addition, as required by California Government Code Section 65962.5, DTSC maintains a Hazardous Waste and Substances Site List for the state, commonly called the Cortese List.

California's Secretary for Environmental Protection has established a unified hazardous waste and hazardous materials management regulatory program (Unified Program) as required by Senate Bill 1082 (1993). The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities for the following environmental programs:

- hazardous waste generator and hazardous waste onsite treatment programs;
- Underground Storage Tank program;
- hazardous materials release response plans and inventories;
- California Accidental Release Prevention Program;
- Aboveground Petroleum Storage Act requirements for spill prevention, control, and countermeasure plans; and
- California Uniform Fire Code hazardous material management plans and inventories.

The six environmental programs within the Unified Program are implemented at the local level by local agencies—Certified Unified Program Agencies (CUPAs). CUPAs carry out the responsibilities previously handled by approximately 1,300 State and local agencies, providing a central permitting and regulatory agency for permits, reporting, and compliance enforcement.

DTSC regulations would be applicable to the Program if herbicides or other substances proposed for use qualify as a hazardous substance (some pesticides and herbicides become hazardous waste when discarded and, accordingly, must be disposed of as a hazardous waste).

California Division of Occupational Health and Safety Administration

The California, Division of Occupational Safety and Health Administration (Cal/OSHA), assumes primary responsibility for developing and enforcing workplace safety regulations within the state. Cal/OSHA standards are more stringent than federal OSHA regulations and are presented in CCR Title 8. Standards for workers dealing with hazardous materials include practices for all industries (General Industry Safety Orders); specific practices are described for construction, and hazardous waste operations and emergency response. Cal/OSHA conducts on-site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices. Among other requirements, Cal/OSHA requires many entities to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans and provides specific regulation to limit exposure of construction workers to lead.

Implementation of treatments under the Program would require compliance with the Cal/OSHA safety standards and practices regarding workplace safety and providing a safe and healthy environment for workers.

California Air Resources Board

CARB oversees California's Smoke Management Program, which addresses potentially harmful smoke impacts from agricultural, forest, and range land management burning operations. The legal basis of the program is found in the Title 17 Smoke Management Guidelines for Agricultural and Prescribed Burning, adopted by CARB on March 23, 2000 (Cal. Code Regs. tit. 17). The Guidelines state that each air district or region shall adopt, implement, and enforce a smoke management program, in coordination with CARB and other appropriate stakeholders. Elements of the program include permitting requirements for agricultural and prescribed burns, meteorological and smoke management forecasting, and a daily burn authorization system. The California Wildfire Smoke Response Coordination, prepared under the auspices of CARB's California Air Response Planning Agency and the California Interagency and Smoke Council, provides useful information and resources seeking assistance in protecting the public's health from the impacts of smoke during wildfires. This program is discussed in more detail in Section C, "Air Quality" and would be applicable to prescribed burning under the Program.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB and nine RWQCBs are responsible for ensuring implementation and compliance with the provisions of the federal CWA and the State Porter-Cologne Act. The Porter-Cologne Act of 1969 is California's statutory authority for the protection of water quality. Along with the SWRCB and RWQCBs, water quality protection is the responsibility of numerous water supply and wastewater management agencies, as well as city and county governments, and requires the coordinated efforts of these various entities. These entities and water quality protection are discussed in more detail in Section J, "Hydrology, Water Supply, and Water

Quality," and would be applicable to any treatment activities under the Program that could directly or indirectly affect water quality.

California Department of Forestry and Fire Protection

Public Resources Code 4201-4204 directs CAL FIRE to map fire hazards within SRAs based on relevant factors such as fuels, terrain, and weather. These statutes were passed after significant WUI fires occurred; consequently, these hazards are described according to their potential for causing ignitions to buildings. These zones, referred to as FHSZs, provide the basis for application of various mitigation strategies to reduce risks to buildings associated with wildland fires (CAL FIRE 2024). Additionally, the Public Resources Code, beginning with Section 4427, includes fire safety regulations that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment with internal combustion engines; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on site for various types of work in fire-prone areas. These requirements would apply to Program activities within a VHFHSZ.

LOCAL

Santa Cruz County GP/LCP

The Public Safety Element of the GP/LCP outlines policies and regulations related to mitigating wildfire risk to existing and new development. It is applicable to the Program because eucalyptus tree removal would help mitigate fire risk in and adjacent to the Program Area. The Public Safety Element also identifies the following goals and policies related to hazardous and toxic materials and hazardous waste management that are applicable to the Program:

- Policy 6.6.2 County Use of Toxic/Hazardous Materials: Eliminate wherever possible, and minimize where elimination is not feasible, the use of hazardous and toxic materials in the operations and programs of County government.
- Policy 6.6.3 Maintenance of Standards for Use and Control: Ensure that's anta Cruz County maintains standards for the use and control of hazardous materials which are at least equal in their protection for the environment and the community to measures imposed by other local governments within Santa Cruz County, and in adjoining Counties.

Environmental Setting

HAZARDOUS MATERIAL SITES

According to the DTSC Public Envirostor Data, there are no cleanup sites, hazardous waste sites, or inspection, compliance and enforcement (ICE) sites within the Program Area (DTSC 2021).

Cleanup Sites are sites where oil or hazardous chemicals have been or may be released into the environment and where DTSC conducts clean-up activities. Cleanup activities take place at active and abandoned waste sites, federal and state facilities and properties, and where any storage tanks have leaked. DTSC, federal and other state agencies or municipalities, or the company or party responsible for the contamination may perform cleanups. Cleanup can also include site reuse and redevelopment. Hazardous Waste Sites are where hazardous waste management facilities receive hazardous wastes for treatment, storage or disposal. The DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous wastes at ICE sites. DTSC monitors compliance with state and federal hazardous waste requirements by conducting inspections. DTSC works to ensure compliance with environmental requirements. When warranted, DTSC will take civil or criminal enforcement action against violators of environmental laws. DTSC provides compliance incentives and auditing to encourage facilities to find and disclose violations to the Agency. Violations may also be discovered from tips/complaints received by the Agency from the public. Violations discovered as a result of any of these activities may lead to civil or criminal enforcement.

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following SPRs, as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR HAZ-1 Review Cortese List of Hazardous Materials Sites for Avoidance: During the project planning phase, the RCD will conduct a review of the "Cortese List" data resources to ensure that the project area is not located in any hazardous materials sites.

SPR HAZ-2 Contain Equipment Storage, Maintenance, and Refueling at Least 100 Feet from Waterways: A contained area will be designated for equipment storage, short-term maintenance, and refueling of heavy equipment, chainsaws etc. It will be located at least 100-feet from all water bodies, in a location where fluids or accidental discharges cannot flow into waterways. If site conditions (property size) make this 100-foot distance infeasible, these activities will occur at the maximum distance possible from aquatic areas, the Contractor will construct an impermeable containment feature (e.g., a Visqueen-covered earthen berm or gravel bag barrier) to prevent fluids, wash water or other pollutants from escaping the staging site and entering waters of the state or storm drains.

SPR HAZ-3 Reduce Potential for Spills: Discourage "topping-off" fuel tanks. All diesel and gasoline powered equipment will be maintained per manufacturer's instructions. Workers

using fuels or other hazardous materials must be knowledgeable of the specific procedures necessary for hazardous materials cleanup and emergency response. Use of secondary containment and spill rags when fueling.

SPR HAZ-4 Inspect and Cleanup Vehicle Leak: Vehicles will be inspected for leaks and repaired immediately daily. Leaking equipment will not be allowed into the project area. All questionable motor oil, coolant, transmission fluid, and hydraulic fluid hoses, fittings, and/or seals on construction equipment will be replaced. All mechanical equipment will be inspected daily to ensure there are no motor oil, transmission fluid, hydraulic fluid, and/or coolant leaks . If, during the course of operations, a fuel or hydraulic fluid leak is discovered, the machine will stop, and the leak will be contained and fixed immediately. All leaks will be repaired in the equipment staging area or other suitable location (away from watercourses) prior to resumption of construction activity. Leaks, drips and other spills will be cleaned up immediately to avoid soil or groundwater contamination. Operations with that equipment will not resume until the leak has been fixed.

SPR HAZ-5 Maintain and Wash Vehicles to Protect Environment: Major vehicle maintenance and washing will be done in a manner that protects the environment (at a minimum on a paved surface where all wash water, drippings, runoff, etc. is collected and properly disposed, and preferably offsite).

SPR HAZ-6 Properly Dispose of Spent Fluid and Debris: All spent fluids (including motor oil, radiator coolant, and/or other fluids) and used vehicle batteries will be collected, stored, and recycled as hazardous waste off site. All construction debris and sediments (if sediments are not incorporated on site) will be properly disposed. Plans will indicate the approved disposal site.

SPR HAZ-7 Prevent Petroleum Release into Waterways: The RCD will ensure that the use and/or storage of petroleum-powered equipment will be accomplished in a manner to prevent the potential release of petroleum materials into waters of the state (Fish and Game Code 5650). All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

SPR HAZ-8 Comply with Spill Prevention Procedures: Emergency spill supplies and equipment will be available to respond in a timely manner if an incident should occur. Response materials such as oil-absorbent material, tarps, and storage drums will be available in the plan area at all times during management activities and will be used as needed to contain and control any minor releases

SPR HAZ-9 Utilize Dry Clean Up Methods: Dry cleanup methods (i.e., absorbent materials, cat litter, and/or rags) will be used whenever possible. Spilled dry materials will be swept up immediately. Spilled materials will not be washed away with water or buried. If water must be used, the Contractor shall collect the water and spilled fluids and dispose of it as hazardous waste. Proper disposal or management of contaminated soils and materials (i.e., clean up materials) is required.

SPR HAZ-10 Spill Reporting Requirements: Small spills (less than 18 inches in diameter) including small quantities of oil, gasoline, paint, or other materials should be controlled by

the first responder (maintenance staff) and do not necessarily require an emergency response team. Medium spills (greater than 18 inches but less than 6 feet in diameter) are typically controlled by the first responder (maintenance staff) but police or fire department HAZMAT teams may be called based on conditions. Report significant spills (larger than 6 feet in diameter and any "running" spill) immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill, contact the San Mateo County Environmental Health Services Division, or other emergency office (e.g., local fire or police department) as warranted, immediately and document the spill using the spill documentation form. Alternatively, 1) dial 911, the local emergency response number, 2) the National Response Center at (800) 424-8802; or 2) call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours). As appropriate, contact other agencies including California Occupational Safety and Health Administration or the Regional Water Quality Control Board. All chemical spills shall be reported as soon as possible to the emergency site contact.

SPR HAZ-11 Prohibit Use of Hydraulic Fluids Containing Organophosphate Ester: Hydraulic fluids in mechanical equipment working within the active stream channel will not contain organophosphate esters.

SPR HAZ-12 Properly Dispose of Trash and Construction Debris: During treatment activities, the operator will not dump any trash and/or construction debris into the wetted channel; all trash and/or construction debris will be collected and properly disposed. During the project activities, all trash and food that may attract potential predators of salmonids (e.g., raccoons, piscivores, etc.) will be properly contained, removed from the work site, and disposed of daily.

SPR HAZ-13 Comply with fire safety code requirements, General Plan policy and standards, and all other applicable regulations: RCD will incorporate all applicable fire safety code requirements and includes fire protection devices as required by the local fire agency. RCD will meet the General Plan policies related to fire resilience and access in the Santa Cruz County General Plan, and standards for defensible spaces in the public resource code (PRC) and SCCC.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1. *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*	☐	☐	☒	☐

***Discussion*: Less than Significant**. Project operations would involve the routine transportation, use, or disposal of gasoline, oil and diesel used in the power equipment and as a fuel for torches, and herbicides for noxious weed treatments. Accidental spill fuel, oil, or herbicides during transportation, use, or disposal could create significant hazard to the public or the environment. SPR HAZ-1 through 13 are designed to minimize spill of fuel, oil, or herbicides into the environment and minimize impacts related to the transportation, use, or disposal of hazardous materials. Operations will follow all label handling guidelines and all applicable state and federal laws. The herbicide labelling program operated by the DPR is certified as having functional equivalency to an EIR, pursuant to CEQA statute §21080.5. Impacts related to the transport, use, or disposal of hazardous materials are expected to be less than significant with the implementation of SPRs, and no mitigation is required.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*	☐	☐	☒	☐

***Discussion*: Less than Significant**. See discussion under I-1 above. Project impacts would be considered less than significant.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*	☐	☐	☒	☐

***Discussion*: Less than Significant**. While some parts of the program area are within ¼ mile of a school, the program would not handle hazardous materials or waste other than vehicle fuel and oil, which are already present in the school environment. Furthermore, SPR HAZ-1 through 13 related to storage, handling, and disposal of hazardous materials are designed to minimize the risk of spill of fuel, oil, or herbicides into the environment and establish spill response

protocol in the unlikely event that spills occur. Impacts related to hazardous emissions on schools are expected to be less than significant, and no mitigation is required.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

Discussion: **No Impact**. The Program Area does not include hazardous sites in the list compiled by the County pursuant to Government Code section 65962.5 as of April 29, 2025. No impacts are anticipated from project implementation.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒

Discussion:

No Impact. The eastern Program boundary is located within a mile of the Watsonville Municipal Airport. However, the Program does not propose any new development. Therefore, the project would not result in a safety hazard or excessive noise for people residing or working in the project area. No impact would occur.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

Discussion: **No Impact**. The project would not conflict with implementation of the County of Santa Cruz Local Hazard Mitigation Plan 2015-2020 (County of Santa Cruz 2020). Therefore, no impacts to an adopted emergency response plan or evacuation plan would occur from project implementation.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
7. *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?*	☐	☐	☒	☐

Discussion: **Less than Significant**. See discussion under Wildfire Question T-2. Impacts would be less than significant.

J. Hydrology, Water Supply, and Water Quality

Regulatory Setting

FEDERAL

Clean Water Act Section 404

The CWA consists of the Federal Water Pollution Control Act of 1972 and subsequent amendments. The CWA provides for the restoration and maintenance of the physical, chemical, and biological integrity of the nation's waters.

Section 404 of the CWA prohibits the discharge of fill material into waters of the United States, including many wetlands, except as permitted under separate regulations by the USACE and EPA. To discharge dredged or fill material into waters of the United States, including wetlands that come within the definition of that term, Section 404 requires projects to receive authorization from the Secretary of the Army, acting through the USACE. Waters of the U.S. are generally defined as "…waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; territorial seas and tributaries to such waters."

Clean Water Act Section 402

Section 402 of the CWA establishes the NPDES permit program to regulate discharges of pollutants into waters of the United States. An NPDES permit sets specific discharge limits for point sources discharging pollutants into waters of the United States and establishes monitoring and reporting requirements, as well as special conditions. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable. RWQCBs in California are responsible for implementing the NPDES permit system (see the discussion of state regulations below).

Clean Water Act Section 401

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification for the discharge. The certification must be obtained from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over the affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401. Water quality certification requires evaluation of potential impacts in light of water quality standards and CWA Section 404 criteria governing discharge of dredged and fill materials into waters of the United States. The federal government delegates water pollution control authority under CWA Section 401 to the states (and in California, ultimately to the RWQCBs).

Clean Water Act Section 303

Section 303(d) of the CWA requires states to develop lists of water bodies that do not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of the pollutant that the water body can receive and still be in compliance with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. EPA must either approve a TMDL prepared by the state or disapprove the state's TMDL and issue its own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list would be remediated.

Federal Antidegradation Policy

The Federal Antidegradation Policy was enacted to provide protection to high-quality water resources of national importance. It directs states to develop and adopt statewide antidegradation policies that include protecting existing instream water uses and maintaining a level of water quality necessary to protect those existing uses and the water quality of high-quality waters. In EPA's CWA regulations regarding water quality standards (40 CFR Chapter 1, Section 131.12[a][3]), the criteria for requiring an antidegradation standard includes the following conditions:

- Existing instream water uses and a level of water quality necessary to maintain those uses shall be maintained and protected.
- Water quality will be maintained and protected in waters that exceed water quality levels necessary for supporting fish, wildlife, and recreational activities, and water quality, unless the State deems that water quality levels can be lowered to accommodate

important economic or social development. In these cases, water quality levels can only be lowered to levels that support all existing uses.

- Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

STATE

State Water Resources Control Board

In California, SWRCB has broad authority over water quality control issues for the state. SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the state by the federal government under the CWA. Other state agencies with jurisdiction over water quality regulation in California include the California Department of Public Health Services (formerly Department of Health Services) (for drinking water regulations), the DPR, the CDFW (formerly Department of Fish and Game), and the Office of Environmental Health and Hazard Assessment. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act requires that each of the nine RWQCBs prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCB's jurisdiction includes waters of the United States, as well as areas that meet the definition of "waters of the state." "Waters of the state" is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB has the discretion to take jurisdiction over areas not federally protected under CWA Section 404 provided they meet the definition of waters of the state and the SWRCB published a new set of procedures for discharges of dredged or fill material into waters of the state on March 22, 2019. Mitigation requiring no net loss of wetlands functions and values of waters of the state typically is required by the RWQCB.

The SWRCB has adopted the following definition of wetlands:

An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater or shallow surface water or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes, or the area lacks vegetation.

State Nondegradation Policy

In 1968, as required under the federal antidegradation policy described previously, SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy states:

- Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.
- Any activity which produces waste or increases the volume or concentration of waste, and which discharges to existing high-quality waters would be required to meet waste discharge requirements.

California Fish and Game Code Section 1602 (Lake and Streambed Alteration)

CDFW is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. Fish and Game Code Section 1602 states that an entity must notify CDFW prior to substantially diverting or obstructing the natural flow or substantially changing or using any material from the bed, channel, or bank of, any river, stream, or lake, or depositing or disposing of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. If CDFW determines that the proposed activity may substantially adversely affect an existing fish or wildlife resource, CDFW will issue a Lake or Streambed Alteration Agreement for that activity, that includes reasonable measures necessary to protect the resource, and the entity must conduct the activity in accordance with the Agreement. If eucalyptus tree removal and replanting occurs in areas under CDFW jurisdiction, the project would be required to obtain a 1602 permit.

Safe Drinking Water Act

As mandated by the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supply. Such contaminants are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary maximum contaminant levels. Maximum contaminant levels and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting drinking water maximum contaminant levels. EPA has delegated to the California Department of Public Health Services the responsibility for California's drinking water program. California Department of Public Health Services is accountable to EPA for program implementation and for adoption of standards and regulations that are at least as stringent as those developed by EPA. Title 22 of the California Code of

Regulations (Article 16, Section 64449) defines secondary drinking water standards, which are established primarily for reasons of consumer acceptance (i.e., taste) rather than for health issues.

LOCAL

Santa Cruz County Riparian Corridor and Wetlands Protection Ordinance

The County of Santa Cruz Riparian Corridor and Wetlands Protection Ordinance (§16.30) limits development activities in riparian and wetland areas and provides buffer/setback requirements based on the seasonality of the feature (i.e. perennial vs. intermittent vs. ephemeral), slope and vegetation composition. Santa Cruz County may authorize a riparian exception on a case-by-case basis in accordance with the procedures outlined in §16.30.060 of the code . The County must make a series of findings identified in §16.30.060 (D) and is likely to require conditions for granting of the exception to ensure that the project complies with the purpose of the ordinance. Typically, protective measures that prevent degradation of aquatic features are required, including erosion and sediment control measures and water quality protection measures.

Integrated Regional Water Management Plan

The Santa Cruz Integrated Regional Water Management (IRWM) program provides a framework for local stakeholders to manage this region's water and water-related resources. The Santa Cruz IRWM Plan was developed in response to California's IRWM planning initiative to promote an informed, locally-driven, and consensus-based approach to water resources management.

The IRWM Plan includes strategies for developing and implementing policies and projects to ensure sustainable water use, reliable water supply, better water quality, improved flood protection and stormwater management, and environmental stewardship. For the Santa Cruz IRWM program, the RWMG consists of nine local agencies with statutory authority over water management and related resources, including the Central Water District (CWD), County of Santa Cruz, and RCD that manages water and other resources within the Program Area .

Pajaro Valley Basin Management Plan Groundwater Sustainability Update 2022

The Sustainable Groundwater Management Act (SGMA) requires local groundwater sustainability agencies in the state's high and medium priority basins to develop and implement Groundwater Sustainability Plans (GSPs) or Alternatives to GSPs. The Pajaro Valley Water Management Agency (PV Water) has worked to achieve a goal of sustainable groundwater management since its formation in 1984. PV Water continues to meet requirements of the SGMA passed in 2014. PV Water elected to be the groundwater sustainability agency for the Corralitos – Pajaro Valley Subbasin 3-002.01 in August 2015. As the groundwater sustainability agency, PV Water is responsible for achieving groundwater sustainability for the Basin by 2040. The Pajaro Valley Basin Management Plan Groundwater

Sustainability describes the management criteria, subsidence evaluation, and sustainability status and recommends actions to achieve ground water sustainability.

Central Water District Groundwater Sustainability Plan

The Santa Cruz Mid-County Groundwater Agency formed in March 2016 under California's SGMA. SGMA is the first legislation in California history to make sure groundwater is sustainably managed for future generations. The plan outlines the following goals and polices related to achieving ground water sustainability by 2040. The plan also outlines actions and schedule for achieving these goals:

- Ensure groundwater is available for all Basin water users
- Protect groundwater quality to promote public health
- Protect groundwater supply against seawater intrusion
- Protect groundwater supply from over- pumping and resolve historical over- pumping impacts
- Protect groundwater supply from climate change and sea level rise impacts
- Maintain Basin groundwater reserves for use during times of drought
- Maintain or enhance groundwater levels where groundwater dependent ecosystems exist
- Maintain or increase groundwater available to support local stream flow
- Support neighboring groundwater basins in their efforts to achieve regional groundwater sustainability

Santa Cruz County Code

SCCC Chapter 7.69, Water Conservation, aims to prevent water waste and reduce long-term water demand in Santa Cruz County by requiring water-saving measures. Chapter 7.70 includes regulates use of wells to protect groundwater and natural resources.

Environmental Setting

FLOOD HAZARDS

According to the FEMA map searched on May 1, 2025, the Program Area contains areas zoned as A, AE, and X (FEMA 2024). Both Zone A and AE are high risk areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. While Zone AE is based on detailed study where base flood elevations are provided, Zone A uses approximate methods to determine the flood hazard. Zone X area areas with low to moderate risks.

TSUNAMI AND SEICHE ZONES

There are two primary types of tsunami vulnerability in Santa Cruz County. The first is a teletsunami or distant source tsunami from elsewhere in the Pacific Ocean. This type of tsunami is capable of causing significant destruction in Santa Cruz County. However, this type of tsunami would usually allow time for the Tsunami Warning System for the Pacific Ocean to warn threatened coastal areas in time for evacuation.

A greater risk to the County of Santa Cruz is a tsunami generated as the result of an earthquake along one of the many earthquake faults in the region. Even a moderate earthquake could cause a local source tsunami from submarine landsliding in Monterey Bay. A local source tsunami generated by an earthquake on any of the faults affecting Santa Cruz County would arrive just minutes after the initial shock. The lack of warning time from such a nearby event would result in higher causalities than if it were a distant tsunami.

Seiches are recurrent waves oscillating back and forth in an enclosed or semi-enclosed body of water. They are typically caused by strong winds, storm fronts, or earthquakes.

GROUNDWATER

All County water agencies are experiencing a lack of sustainable water supply due to groundwater overdraft and diminished availability of streamflow. Because of this, coordinated water resource management has been of primary concern to the County and to the various water agencies. Projects seeking approval must be consistent with numerous water management plans as described below.

County staff are working with the water agencies on various IRWM programs to provide for sustainable water supply and protection of the environment. Effective water conservation programs have reduced overall water demand in the past 20 years, despite continuing growth. In August 2014, the Board of Supervisors and other agencies adopted IRWM Plan Update 2014, which identifies various strategies and projects to address the current water resource challenges of the region. In 2020, an updated climate change chapter was added to the IRWM Plan. A Countywide Storm Water Resources Plan was created through a related effort in 2016 to ensure the coordinated use of storm water as a resource.

The County is working closely with water agencies to implement the SGMA of 2014. There are three groundwater basins in the County that are subject to SGMA, the Santa Magarita Basin, Santa Cruz Mid-County Basin, and the Pajaro Valley Basin. The Program contains area that are located in the Santa Cruz Mid-County Basin, and the Pajaro Valley Basin.

Santa Cruz Mid-County Basin

In 2016, Soquel Creek Water District (SqCWD), CWD, County, and City of Santa Cruz adopted a Joint Powers Agreement to form the Santa Cruz Mid-County Groundwater Agency for management of the Mid-County Basin under SGMA. The GSP written by the Groundwater Agency was approved by the Department of Water Resources in June 2021. The GSP outlines an approach to reach sustainability by 2040 which relies on projects including a purified

recycled water and an aquifer storage and recovery project to provide additional supply to the Basin. Projects and Management Actions included in the Plan originated through the SqCWD Community Water Plan and the City of Santa Cruz Water Supply Augmentation Strategy.

Corralitos -Pajaro Valley

The PV Water completed its Basin Management Plan update in 2014. The Basin Management Plan was approved as an alternative to a GSP by the Department of Water Resources in 2019. PV Water was required to bring the Basin Management Plan into full compliance with SGMA through their first update, which was completed and submitted to DWR in December 2021. The Basin Management Plan relies on a number of strategies including agricultural water conservation, increasing the geographic scope of their recycled water delivery zone, and investing in several new water supply projects.

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following standard project requirements (SPRs), as well as any other applicable SPRs listed elsewhere in this document, developed for the Program. It also assumes that the Program would comply with relevant federal and state laws, regulations, and ordinances.

SPR LEDA-4 Protect Water Quality: All debris, including sawdust, chips, or other vegetative material, will be prevented from entering the bed, channel, or bank of a waterway, unless authorized by the appropriate regulatory agencies, ie. CDFW.

SPR HL-5 Prohibit Leaching into Waterways: Herbicides must be applied directly to plants and may not be spread upon any water or where they can leach into waterways in subsequent rains.

SPR HL-7 Utilize Aquatic-approved Herbicides Near Waterways: When herbicides are used to control non-native species near waterways, only herbicides labeled for use in aquatic environments will be used when working in riparian habitats or other areas where there is a possibility the herbicide could come into direct contact with water. Only hand application of herbicides will be allowed in riparian habitats and only during low-flow periods or when seasonal streams are dry.

SPR EC-4 Install Erosion Control Devices: Erosion control and sediment detention devices will be incorporated into the project design and implemented at the time of project implementation. These devices will be in place prior to October 15 and the onset of rains for the purposes of minimizing fine sediment and sediment to waterways and of detaining water to retain sediment on-site. These devices will be placed at all locations where the likelihood of sediment input exists. Sediment collected in these devices will be disposed of away from the collection site and outside riparian areas and flood hazard areas.

SPR EC-8 Review Erosion Control Measures at Project Site: The RCD will oversee project implementation to confirm all planned erosion control measures are in place immediately following completion of treatment activities or prior to forecasted rain events. The RCD will conduct annual monitoring to ensure the long-term outcomes have been achieved or propose corrective measures. Annual monitoring will continue and be reported in the Annual Report until erosion control measures are satisfactorily functioning.

SPR HAZ-2 Contain Equipment Storage, Maintenance, and Refueling at Least 100 Feet from Waterways: A contained area will be designated for equipment storage, short-term maintenance, and refueling of heavy equipment, chainsaws etc. It will be located at least 100-feet from all water bodies, in a location where fluids or accidental discharges cannot flow into waterways. If site conditions (property size) make this 100-foot distance infeasible, these activities will occur at the maximum distance possible from aquatic areas, the Contractor will construct an impermeable containment feature (e.g., a Visqueen-covered earthen berm or gravel bag barrier) to prevent fluids, wash water or other pollutants from escaping the staging site and entering waters of the state or storm drains.

SPR HAZ-7 Prevent Petroleum Release into Waterways: The RCD will ensure that the use and/or storage of petroleum-powered equipment will be accomplished in a manner to prevent the potential release of petroleum materials into waters of the state (Fish and Game Code 5650). All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

SPR FP-8 Minimize Burn Pile Size: The project proponent will not create burn piles that exceed 20 feet in length, width, or diameter, except when on landings, road surfaces, or on contour to minimize the spatial extent of soil damage. Piles should be constructed with 10 feet of clearance around them. The project proponent will not locate burn piles in a Watercourse and Lake Protection Zone as defined in 14 CCR Section 916.5 of the California Forest Practice Rules. This SPR applies to mechanical, manual, and prescribed burning treatment activities and all treatment types.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1. *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*	☐	☐	☒	☐

Discussion:

Less than Significant. The proposed Program includes activities such as pile burning and non-native tree removal, which could affect water quality if conducted adjacent to streams or other

surface waters. Large-scale vegetation removal can expose bare soil, which is more susceptible to erosion, runoff, and sedimentation, potentially resulting in degradation of nearby waterbodies.

If work occurs near or within jurisdictional waters, appropriate permits will be obtained from the applicable regulatory agencies. A CDFW LSAA (1600 permit) will be secured if tree removal occurs within or along a watercourse under CDFW jurisdiction, and a replanting and monitoring plan will be implemented for site revegetation. A CWA Section 401 Water Quality Certification will be obtained from the RWQCB for activities involving discharge to jurisdictional waters of the U.S. If no federal permit is required but the activity affects waters of the state (including wetlands), a Waste Discharge Requirement (WDR) will be obtained from the RWQCB. Generally, authorization from USACE is also required before fill is placed in wetlands or waters of the U.S., with the type of permit depending on the extent and purpose of the fill. Compliance with all applicable permits and conditions would reduce potential water quality impacts to less than significant.

Additionally, the Program will incorporate measures designed minimize erosion, protect waterways, and prevent hazardous materials from entering waterways (SPR LEDA-4, SPR HL-5, HL-7, EC-4, EC-8, HAZ-2, HAZ-7). These measures are designed to maximize sediment removal and reflect the best available technology that is economically achievable. All SPRs and BMPs are subject to review and approval by the County and relevant resource agencies. With implementation of these measures, potential impacts to water quality would be less than significant.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*	☐	☐	☐	☒

Discussion: No Impact. The program involves no increase in water use nor any hydrological or hydro morphological alterations that could impede groundwater recharge. In general, reduction in woody plant density promotes groundwater recharge rather than impeding it. No adverse impact would occur to groundwater recharge with project implementation such that the project may impede sustainable groundwater management of the basin.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
A. result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
B. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
C. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or;	☐	☐	☒	☐
D. impede or redirect flood flows?	☐	☐	☒	☐

***Discussion*:**

Less than Significant. Eucalyptus removal activities would not alter the course of any stream or river and does not include the addition of impervious surfaces. However, bare ground associated with large-scale removal and pile burning could be more vulnerable to erosion, run-off, and sedimentation. Burn piles would not exceed be 20 feet in diameter and would not impact a large enough area to cause a significant change in stormwater runoff patterns that could result in sedimentation or siltation (SPR FP-8). Erosion and subsequent sedimentation of waterways would not occur. As discussed in question 1. above, with incorporation of SPRs and compliance with applicable permit conditions should permits are required, impacts to drainage pattern would be less than significant. Therefore, the Program would not alter existing drainage pattern in a manner which would result in substantial erosion or siltation, flooding due to increased run-off, or impede or redirect flood flows.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒

***Discussion*:**

No Impact. The Program does not involve the use of any pollutants other than diesel/gasoline fuels and herbicides, which will be handled and stored in such a way as to make spills and contamination very unlikely (see I. Hazards). Flooding of project areas would not result in the release of pollutants because none would be stored or applied there when rain events approached. No impact would occur.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

***Discussion*:** **No Impact**. The program does not obstruct implementation of a water quality control plan or sustainable groundwater management plan. Furthermore, the Program would likely support these plans through removing eucalyptus that depletes supplies due to high rates of water consumption through transpiration and evaporation and on-going conversion of native plant communities and understory vegetation.

Cumulative impacts: Potential effects on water quality and cumulative watershed effects may include short-term increases in sediment delivered to streams, particularly after prescribed fire, if used as a means for restoration. Although a short-term degradation could occur (as it also does after wildfire if eucalyptus groves that exacerbates wildfire risk remain), reintroduction of more regular and low-intensity fire into this landscape and associated movement toward a more natural fire regime would have a long-term positive benefit. Program SPRs contribute to the prevention of sediment delivery to streams and impacts to riparian areas. Direct and indirect effects from proposed vegetation treatments are minimal and short in duration, particularly when compared with the no-project alternative, and therefore long term cumulative impacts are not expected.

K. Land Use and Planning

Regulatory Setting

FEDERAL

No federal laws or regulations related to land use and planning are applicable to the Program.

STATE

California Department of Fish and Wildlife Land Management Plans

- Per Section 1019 of the Fish and Game Code, CDFW must draft Land Management Plans (LMPs) for any property wholly under its jurisdiction, such as wildlife areas and ecological reserves. LMPs include:
- Inventories of fish, wildlife, and native plant habitats;
- Guidance for management of habitats, species, and programs to protect and enhance native wildlife for their ecological value and enjoyment by the public;
- Guidance for public uses;
- Operation, maintenance, and personnel requirements to implement management goals; and
- Environmental documentation necessary for compliance with state and federal statutes and regulations.

Individual LMPs may also include goals related to wildfire management and coordination with CAL FIRE and other fire protection agencies.

California Coastal Act

The Coastal Act (PRC Section 30000 et seq.) includes specific policies that address issues such as shoreline public access and recreation, lower cost visitor accommodations, terrestrial and marine habitat protection, visual resources, landform alteration, agricultural lands, commercial fisheries, water quality, transportation, development design, and public works. The Coastal Commission partners with local municipalities, such as such as cities and counties, to plan and regulate the use of land and water in the coastal zone. Development within the coastal zone would require a coastal permit from the Coastal Commission or from the local jurisdiction if the activity is within an LCP. The Program Area is not within the coastal zone as defined by the Coastal Act.

LOCAL

Santa Cruz County General Plan/ LCP

California state law requires each city and county to adopt a general plan for "the physical development of the county or city, and any land outside its boundaries which bears relation to its planning" The County's existing GP/LCP was adopted in 1994 and has been amended over time to meet state law requirements, address changing policy goals, and provide for development projects that were not anticipated when the plan was first adopted. The

GP/LCP includes a land use map with land use designations for properties in the unincorporated area of the county, which are described below in the Environmental Setting Section. The Program Area is not within the coastal zone as defined by the Coastal Act. Local coastal program does not apply.

Santa Cruz County Code

Chapter 13.10 of the SCCC contains planning and zoning regulations, including the use charts and site standards for each zone district. Use charts list the uses allowed in the zone district, including specifications for tree removal in different zone districts. Site standards control development by providing requirements such as minimum setbacks to property lines, maximum height, lot coverage, and floor area ratio limits. The fire safe setback requirements are in this chapter is relevant to the Program.

Environmental Setting

The current GP/LCP land use designations within unincorporated areas of Santa Cruz County include 19 designations within four categories as summarized below:

- Residential (R)
- Mountain Residential (R-M)
- Rural Residential (R-R)
- Suburban Residential (R-S)
- Urban Very Low Residential (R-UVL)
- Urban Low Residential (R-UL)
- Urban Medium Residential (R-UM)
- Urban High Residential (R-UH)
- Commercial and industrial
- Neighborhood Commercial (C-N)
- Community Commercial (C-C)
- Professional and Administrative Offices (C-O)
- Visitor Accommodations (C-V)
- Service Commercial and Light Industrial (C-S)
- Heavy Industrial (I)
- Open Space/Resource
- Urban Open Space (U-O)
- Parks, Recreation, and Open Space (O-R)
- Lakes/Reservoirs/Lagoons (O-L)

- Resource Conservation (O-C)
- Agricultural (AG)
- Public Facility/Institutional (P)

In general, land uses within the Program Area are mainly residential or agricultural, characterized by its rural setting, with properties often featuring larger lots and open spaces. As shown in Figure 8, the majority of the Program Area is designated as rural residential (R-R). Lands in the eastern portion of the Program Area are designated as Agricultural (AG), with some very low density residential (R-UVL) use in Freedom. To the western edge of the Program Area, in Day Valley and Aptos, there is a mix of low to medium density residential with some commercial uses. As shown in Figure 9, the Program Area includes areas zoned as Public and Community Facilities (PF), Agriculture (A), rural residential (RR), special use (SU), among others. The purpose of the SU zoning is to provide for flexibility of use and regulation to ensure consistency with the GP/LCP, encourage the planning of large parcels to achieve integrated design of major developments, and protect open space, resource, and environmental values.

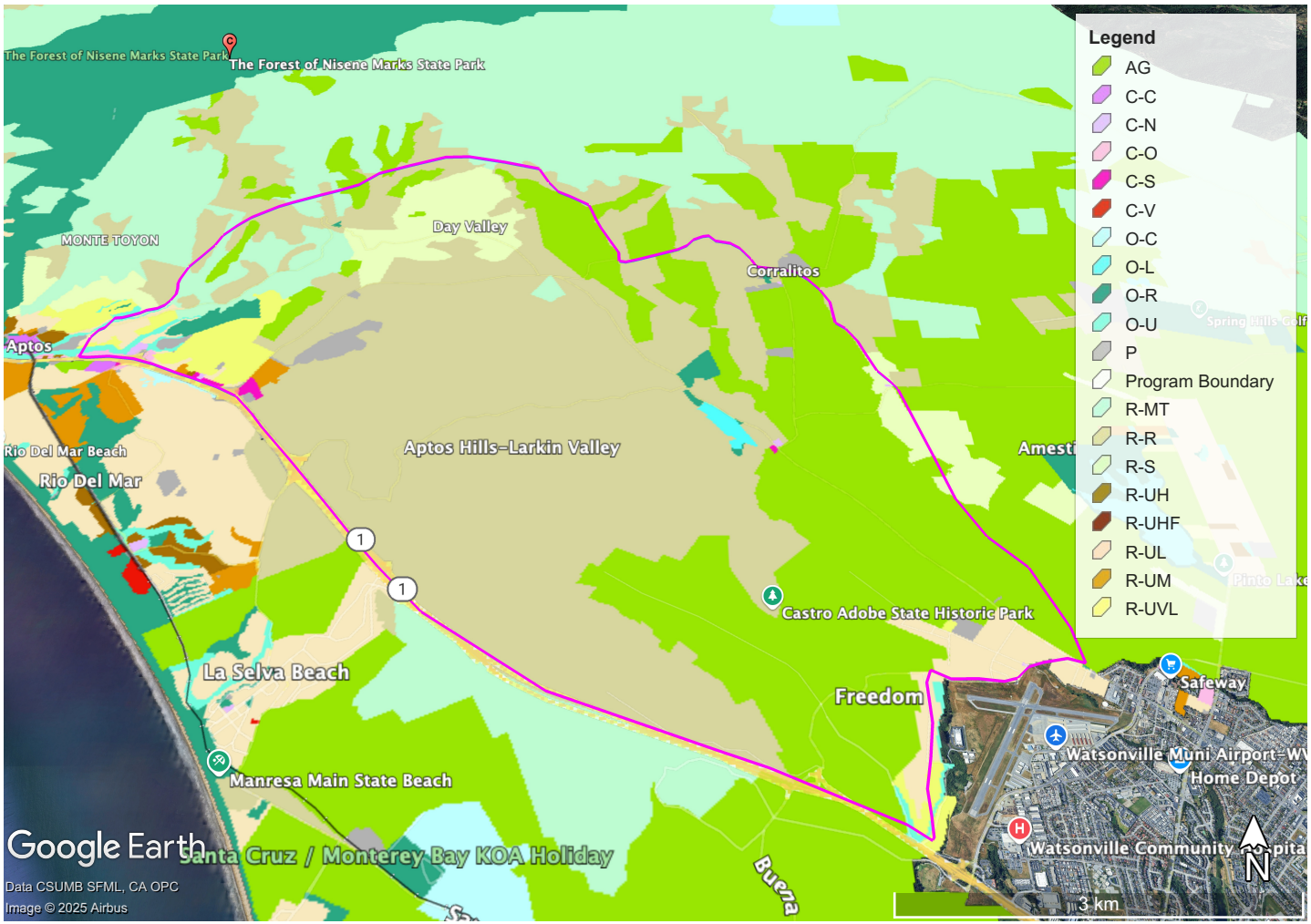


Figure 8 Land Use Designation in the Program Area

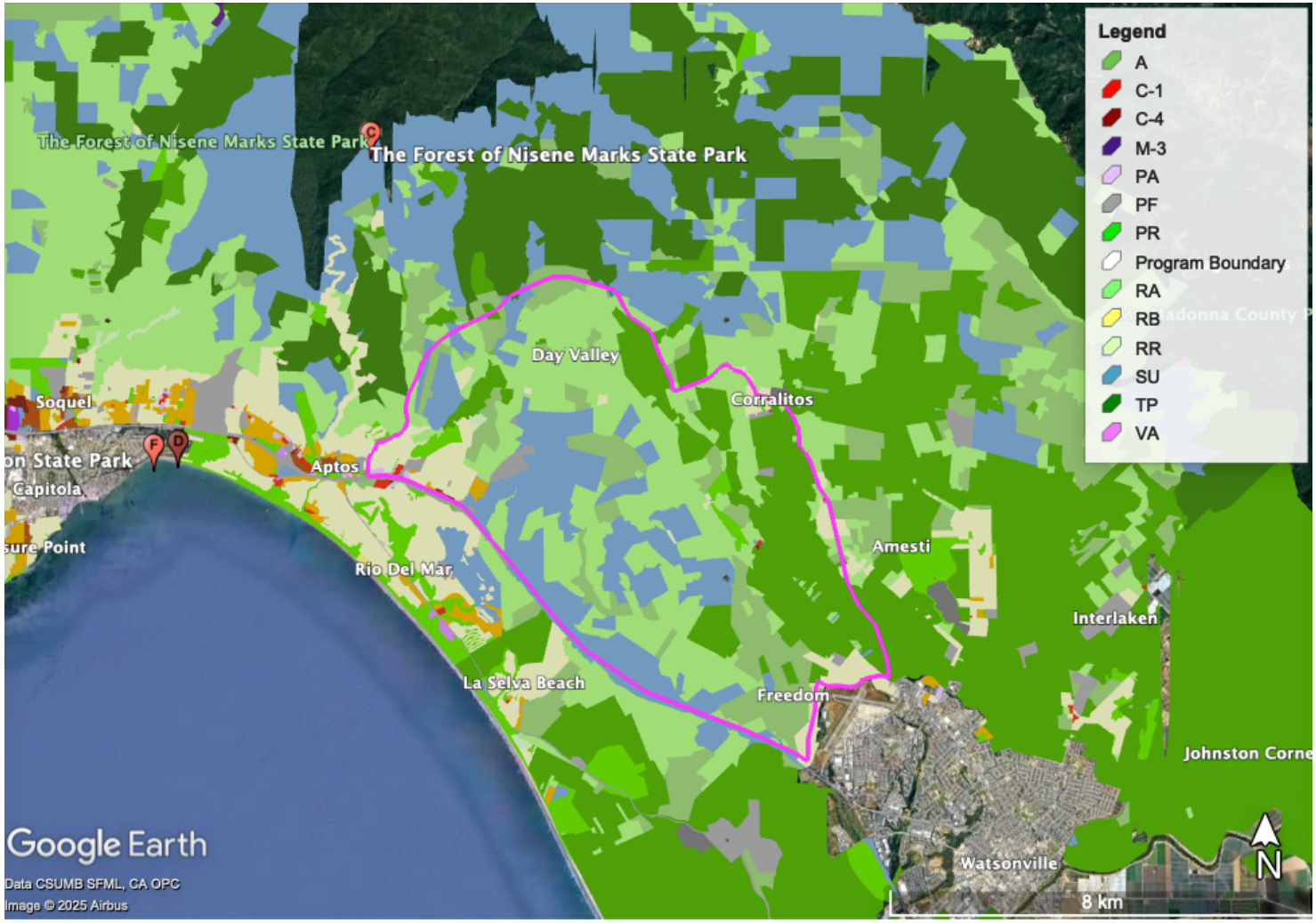


Figure 9 Program Area Zoning

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following SPRs, as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR FP-11 Allowable Pile Burn Locations: Piles will be set back from public roads and trails at a distance to minimize risk to the public or cordoned off from the public.

SPR FP-12 Compliance with CalFire, Fire Departments, and MBARD: All requirements of CAL FIRE, the local fire department, and/or the MBARD will be met, including any permit, notification, burn bans, and reporting requirements. Have fire suppression crews on-site during the fire season determined by CAL FIRE or the local fire department (typically mid-May to mid-November) during curtain and pile burns. Pile burning will adhere to MBARD criteria pollutant thresholds and Regulation 5 for open burning.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1. Physically divide an established community?	☐	☐	☐	☒

Discussion: **No Impact**. The Program proposes tree removal and habitat restoration and does not include any element that would physically divide an established community. In general, raising sightlines and reducing vegetation density promotes travel between parts of a community, at least on foot. No impact would occur.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Discussion: **No Impact**. The Program does not propose any development or conversion of land use. Moreover, the Program will comply with allowable land use set forth in SCCC Chapter 13.10, discussed above in "regulatory setting", and all applicable CAL FIRE, MBARD, Fire District regulations (SPR FP-12). Therefore, the Program would not cause a significant environmental impact due to a conflict with any land use plan, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. No impacts are anticipated.

Cumulative Impacts: The Program would not result in direct or indirect impact related to land use as discussed in question 1. and 2. above. Therefore, the Program would not result in cumulative impacts.

L. Mineral Resources

Regulatory Setting

FEDERAL

There are no federal regulations related to mineral resources that are applicable to the Program.

STATE

Surface Mining and Reclamation Act

The California State Legislature enacted the Surface Mining and Reclamation Act (SMARA) of 1975 (Cal. Pub. Resources Code, § 2710 et seq.) in response to land use conflicts between urban growth and mineral resource extraction. The intent of SMARA is to: 1) assure reclamation of mined lands, 2) encourage production and conservation of minerals, and 3) create and maintain surface mining and reclamation policy and regulations. SMARA also requires the prevention of adverse environmental effects caused by mining, the reclamation of mined lands for alternative land uses, and the elimination of public health and safety hazards from the effects of mining activities. One of the principal requirements of SMARA is the preparation of a reclamation plan and annual mine inspections, as well as the maintenance of a financial assurances cost estimate to guarantee post-mining reclamation of the mine site. The reclamation plan must be prepared by a mining applicant prior to initiation of mining activities and amendments to such plans area required for plan modifications. Reclamation plans must be approved by the SMARA lead agency (usually counties or cities) and the California Department of Conservation, Office of Mine Reclamation and are subject to environmental review under CEQA.

At the same time, SMARA encourages both the conservation and production of extractive mineral resources, requiring the State Geologist to classify land according to the presence or absence of significant mineral deposits. Local governments must consider this information before committing land with important mineral deposits to land uses incompatible with mining. The California Geological Survey is responsible for classifying land into Mineral Resource Zones (MRZs) as follows:

- MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2: Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- MRZ-3: Areas containing mineral deposits, the significance of which cannot be evaluated.

- MRZ-4: Areas where available information is inadequate for assignment to any other zone.

Sections 2762 and 2763 of the SMARA require that jurisdictions issue a Statement of Reasons when projects would result in the elimination of the potential to extract minerals in the areas containing regionally significant mineral resources. SMARA requires that the local agency decision makers consider this elimination of extraction potential in their decision on land use. The Statement of Reasons lists potential reasons to approve the proposed project and to include elimination of the potential for extraction of all this resource; decision makers may adopt or modify any of these. The Statement of Reasons must be submitted to the state geologist and California State Mining and Geology Board for their review for a period of 60 days in conjunction with the environmental review of the proposed project.

LOCAL

County of Santa Cruz General Plan/Local Coastal Program

The County of Santa Cruz GP/LCP is a comprehensive, long-term planning document for the unincorporated areas of the county and includes the County's LCP, which was certified by the CCC in 1994. The County GP/LCP provides policies and programs to establish guidelines for future growth and all types of physical developments. The Agriculture, Natural Resources + Conservation (ARC) Element contains the following goals and policies related to mineral resources that are applicable to the Program:

- Goal ARC-7 Timber and Mineral Resources: Provide for the conservation and environmentally sound and managed economic use of timber and mineral resources to provide employment and income in Santa Cruz County while minimizing impacts to adjoining land uses and the environment.
- Goal ARC-7.2.1 Identification of Mineral Resource Areas: Areas classified by the State Geologist and designated by the State Mining and Geology Board as Regionally or Statewide Significant Mineral Resource Areas1 and areas classified by the State as MRZ-2 Zones (areas containing significant mineral deposits), excluding those areas with existing land uses and/or land use designations which conflict with mineral resource extraction, are shown on the GP/LCP Resources and Constraints Maps (Appendix F) as Mineral Resource lands.
- Goal ARC-7.2.2 Uses in Mineral Resource Areas: Lands within Mineral Resource areas, as identified on the County GP/LCP Resources and Constraints Maps, shall be planned and used in ways that support future mineral extraction. Development on Mineral Resource lands shall be limited to mining and mining-related uses and other uses compatible with mining.

  Uses compatible with future mining operations require a low public or private investment in structures and land improvements, facilitating future mining because of the low economic value of the land and its improvements. Examples of such uses

include large-lot rural development, recreation (public and commercial), agriculture and grazing, timber operations, and open space.

Land uses inherently incompatible with mining require a high public or private investment in structures and land improvements inhibiting future mining because of the higher economic value of the land and improvements. Examples of incompatible uses include high-density residential development, public facilities, commercial uses, and extensive industrial uses.

SCCC Chapter 13.10, Zoning Regulations

The intent of the Mineral Extraction Industrial (M3) zone district is to identify the location of rock, sand, gravel, and other mineral resources within the county which are valuable to the orderly and economic development of the county and region; to conserve mineral resources for future use, and to ensure that the recovery of these resources is not preempted by other uses of the land on which they are located, or by the introduction of noncompatible uses on other lands in the immediate vicinity; to give public notice of the intent to preserve and plan for the continued or ultimate use of mineral resources and proposed access thereto; and to allow the orderly economic extraction of minerals by designating the sites of existing and potential mines and allowing for the establishment, operation, expansion and reclamation of mineral extraction facilities and sites with minimum adverse impacts on aquifers, streams, scenic values, and surrounding land uses.

SCCC Chapter 16.54, Mining Regulations

SCCC Chapter 16.54 provides for the regulation and reclamation of mined lands to prevent or minimize adverse effects on the environment and to protect public health and safety. The chapter recognizes the importance of conserving lands that contain significant mineral resources for future mineral development and encourages the production of minerals while giving consideration to other recreational and environmental values.

SCCC Chapter 17.01, Growth Management

Measure J was approved by Santa Cruz County voters and became law in 1978, codified as Chapter 17.01 of the SCCC. One purpose of this chapter is to state clearly various policies which should govern the future growth and development of Santa Cruz County. Another purpose is to provide for the enactment of a growth management system to regulate the character, location, amount, and timing of future development so as to achieve the stated policies. SCCC 17.01.030 includes policies that shall guide the future growth and development of Santa Cruz County. These include the policy that prevents development and division of lands that contains mineral resources, except when any such development is conditioned so as to prevent the loss of or damage to such resources. The Program does not include any development. Therefore, this chapter is not as relevant.

Environmental Setting

According to the GP/LCP: Minerals are also an important productive natural resource. Several active mining operations in Santa Cruz County provide important mineral resources for industry and construction, including sand and granitic rock (Figure 10 Mineral Resources in the Program Area

). Other quarries are no longer in operation and are in the process of reclamation. Reclamation may result in alternate productive uses, open space, or a combination of uses.

In addition to the quarries, other lands in the County have been designated by the State as Regional or Statewide Significant Mineral Resource Areas and are identified as mineral resource areas in Appendix F: Natural Resource and Environmental Hazard Areas: Maps and Development Constraints and in the County GIS system. Policies in the GP/LCP and implementing regulations of the SCCC require environmentally sound quarry operation and restoration practices and provide guidance for land uses in areas designated as Mineral Resource Lands to support the conservation and future development of mineral resources.

MINERAL RESOURCES AND QUARRIES IN SANTA CRUZ COUNTY AND THE PROGRAM AREA

According to the County's GIS data base, approximately 3,300 acres are in quarry/mineral processing uses. Mineral Resources in the Program Area are shown in Figure 10. Quarries in the County are shown in Figure 11 Quarries in Santa Cruz County.

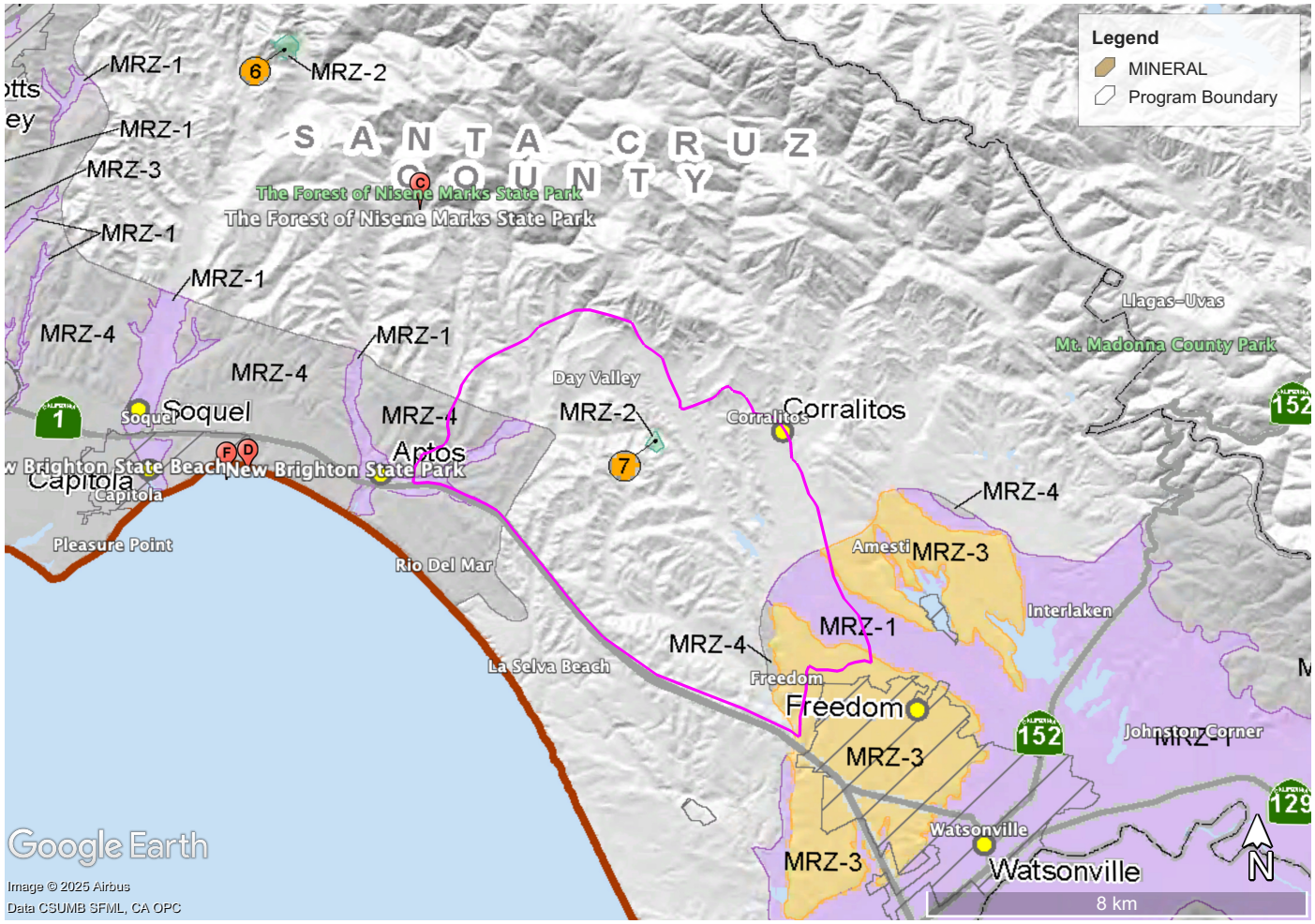


Figure 10 Mineral Resources in the Program Area

As shown in Figure 11 Quarries in Santa Cruz County below, among the eight quarries in the county, four are active. These active quarries include the Felton Quarry, Quail Hollow Quarry, Wilder Quarry, and Olive Springs Quarry. The Cabrillo Sand and Gravel, a quarry that is now closed was located within the Program Area. Cabrillo Sand and Gravel mined sand and gravel from the Aromas Formation for construction and landscape uses. The mined area encompassed approximately 4 acres. By 2005, all on-site excavation of sand had ceased. The Aptos Landscape Supply business has operated on the site since the mid-1960s and has become the primary activity on the parcel as mining activity has ceased. The mined areas have been reclaimed to open space with a native species vegetative cover on the disturbed lands similar to naturally occurring habitats in the surrounding area. The mine is located on Freedom Boulevard in Aptos (County of Santa Cruz 2024).

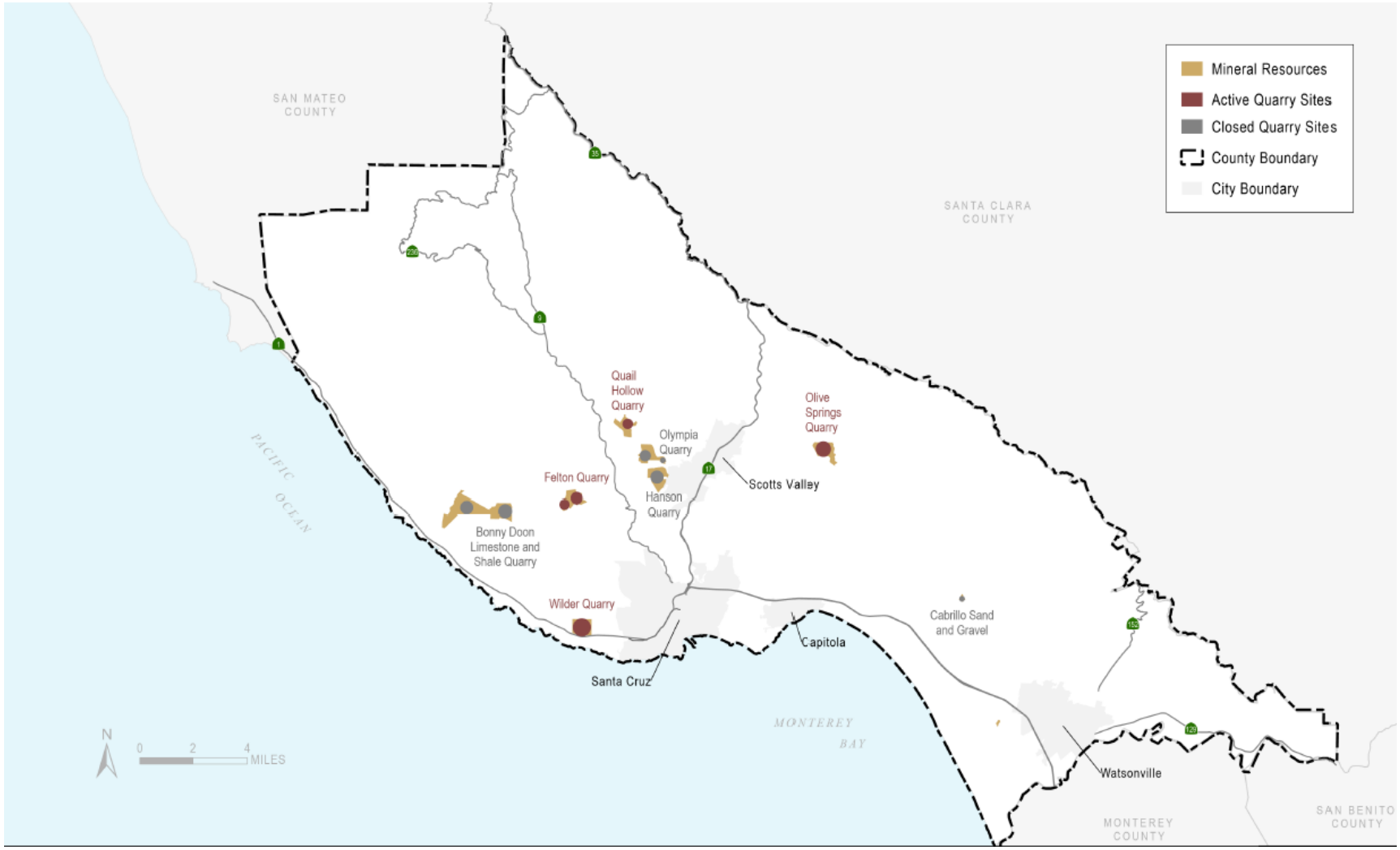


Figure 11 Quarries in Santa Cruz County

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement applicable SPRs developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances. There are no applicable SPRs related to mineral resources for the Program.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1. *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*	☐	☐	☐	☒

Discussion: No Impact. As shown in Figure 10 Mineral Resources in the Program Area

, the Program Area contains areas designated as MRZ-2, which are areas with significant mineral resources. However, the activities under the Program would not include mineral extraction. Program activities would be short-term and would not obstruct access to any mineral resources so it will have no impact on the availability of mineral resources or on the loss of availability of a known mineral resource or locally important mineral resource recovery site.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*	☐	☐	☐	☒

Discussion: No Impact. Program activities would not result in the loss of availability of a known mineral resource because the work would not permanently alter any features. Vegetation clearance is intended to reduce wildfire risk and restore ecosystem health and would not alter land uses, access, or subsurface areas that could impact mineral resources.

Cumulative Impacts: The Program would not result in direct or foreseeable indirect impacts to mineral resources. Therefore, no cumulative impacts would occur.

M. Noise

Regulatory Setting

FEDERAL

U.S. Environmental Protection Agency Office of Noise Abatement and Control

EPA Office of Noise Abatement and Control was originally established to coordinate Federal noise control activities. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments. However, documents and research completed by the EPA Office of Noise Abatement and Control continue to provide value in the analysis of noise effects.

STATE

California General Plan Guidelines for Noise Elements

The State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research, provides guidance for the compatibility of projects within areas of specific noise exposure. Acceptable and unacceptable community noise exposure limits for various land use categories have been determined to help guide new land use decisions in California communities. In many local jurisdictions, these guidelines are used to derive local noise standards and guidance. These guidelines are presented in Table 7.

Citing EPA materials and the State Sound Transmissions Control Standards, the State's general plan guidelines recommend interior and exterior community noise equivalent level (CNEL) of 45 and 60 dB for residential units, respectively (OPR 2017). For commercial land uses, the guidelines recommend an exterior CNEL of up to 65 dB for multi-family residential building and hotels, 70 dB for office buildings, schools, libraries and churches, and 75 dB for industrial, agricultural and recreational land uses. This guideline is adopted by the Noise Element of Santa Cruz County GP/LCP.

LOCAL

County of Santa Cruz General Plan/Local Coastal Program

The County has not adopted noise thresholds for construction noise. The following applicable noise related policy is found in the Public Safety and Noise Element of the Santa Cruz County GP/LCP (Santa Cruz County 2024):

- Policy 9.2.5 The following noise mitigation strategies are preferable to construction of conventional masonry noise barriers where these strategies are a feasible option to reduce impacts on sensitive uses:
    - Avoid placement of noise sensitive uses in noisy areas.
    - Avoid placement of significant noise generators in noise sensitive areas.
    - Increase setbacks between noise generators and noise sensitive uses.

    - Orient buildings such that the noise sensitive portions of a project (e.g. bedrooms) are shielded from noise sources (such as through careful design of floor plan).
    - Use sound-attenuating architectural design and building features.
    - Employ technologies that reduce noise generation, such as alternate pavement materials on roadways, when appropriate.
    - Employ traffic calming measures where appropriate.
- Policy 9.2.6 Require mitigation and/or best management practices to reduce construction noise as a condition of project approvals, particularly if noise levels would exceed 75 dB at neighboring sensitive land uses or if construction would occur for more than 7 days.

The GP/LCP also contains Table 8 below that specifies the maximum allowable noise exposure for stationary noise sources (operational or permanent noise sources) which may be used to determine the effectiveness of noise mitigation measures.

- Nuisance Violations: Under certain conditions, periodic noises have the potential to violate established standards and thus be considered an unlawful violation of the noise ordinance. The County Noise Ordinance (SCCC Chapter 8.3) includes standards to determine if noise transfer across property lines is offensive noise. Conditions or events of unacceptable noise that violate the Noise Ordinance can lead to prosecution as a misdemeanor or as an infraction. Enforcement of the standards in the County Noise Ordinance addresses nuisance noise violations such as loud birds and animals, loud audio equipment, domestic power tools, vehicle repair and testing, powered motor vehicles and construction activities that are used or carried out in manners inconsistent with the noise ordinance. Noise in the County of Santa Cruz is generated by a variety of sources. Evaluation of noise exposure may take into account the nature of the sources and receivers under consideration. For example, community uses and events within residential neighborhoods may be desirable features or occasionally acceptable, even though such uses may have an ongoing or periodic noise characteristic that varies from typical residential area conditions.

Table 7 General Plan Community Noise Exposure Guidance by Land Use

Land Use Category	Noise Exposure Ranges (dB CNEL)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Single-family residential, duplexes, mobile homes	<60	55-70	70-75	>75
Multi-family residential	<65	60-70	70-75	>75
Hotels and motels	<65	60-70	70-80	>80
Schools, Libraries, Churches, Hospitals, Nursing Homes	<70	60-70	70-80	>80
Playgrounds, Neighborhood Parks	<70	67-75	>73	Undefined
Office Buildings	<70	67-77	>75	Undefined
Industrial & Manufacturing	<75	70-80	>75	Undefined

Source: OPR 2017
Notes: CNEL = Community Noise Equivalent Level; dB = decibels.
1 For conventional construction, without any special noise insulation design features.
2 For construction with noise reduction features and/or conventional construction with permanently closed windows.
3 Unacceptable unless noise insulation features have been included in the design and noise reduction requirements in place.
4 Incompatible with construction and development.

Table 8 Maximum Allowable Noise Exposure Stationary Noise Sources

	Daytime (5) (7 AM to 10 PM)	Nighttime (2,5) (10 PM to 7 AM)
Hourly Leq – average hourly noise level, dB (3)	50	45
Maximum level, dB (3)	70	65
Maximum level dB – Impulsive Noise (4)	65	60

Source: Santa Cruz County 2024
Note: dB = decibel
(1) As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures
(2) Applies only where the receiving land use operate or is occupied during nighttime hours
(3) Sound level measurements shall be made with "slow" meter response
(4) Sound level measurements shall be made with "fast" meter response
(5) Allowable levels shall be raised to the ambient noise levels where the ambient levels exceed the allowable levels. Allowable levels shall be reduced 5 dB if the ambient hourly Leq is at least 10 dB lower than the allowable level.

There are no County of Santa Cruz ordinances that specifically regulate construction or operational noise levels. However, Section 8.30.010 (Curfew—Offensive noise) of the SCCC contains the following language regarding noise impacts:

(A) No person shall make, cause, suffer, or permit to be made any offensive noise.

(B) "Offensive noise" means any noise which is loud, boisterous, irritating, penetrating, or unusual, or that is unreasonably distracting in any other manner such that it is likely to disturb people of ordinary sensitivities in the vicinity of such noise, and includes, but is not limited to, noise made by an individual alone or by a group of people engaged in any business, activity, meeting, gathering, game, dance, or amusement, or by any appliance, contrivance, device, tool, structure, construction, vehicle, ride, machine, implement, or instrument.

(C) The following factors shall be considered when determining whether a violation of the provisions of this section exists:

(1) Loudness (Intensity) of the Sound.

(a) Day and Evening Hours. For purposes of this factor, a noise shall be automatically considered offensive if it occurs between the hours of 8:00 a.m. and 10:00 p.m. and it is:

(i) Clearly discernible at a distance of 150 feet from the property line of the property from which it is broadcast; or

(ii) In excess of 75 decibels at the edge of the property line of the property from which the sound is broadcast, as registered on a sound measuring instrument meeting the American National Standard Institute's Standard S1.4-1971 (or more recent revision thereof) for Type 1 or Type 2 sound level meters, or an instrument which provides equivalent data.

A noise not reaching this intensity of volume may still be found to be offensive depending on consideration of the other factors outlined below.

(b) Night Hours. For purposes of this factor, a noise shall be automatically considered offensive if it occurs between the hours of 10:00 p.m. and 8:00 a.m. and it is:

(i) Clearly discernible at a distance of 100 feet from the property line of the property from which it is broadcast; or

(ii) In excess of 60 decibels at the edge of the property line of the property from which the sound is broadcast, as registered on a sound measuring instrument meeting the American National Standard Institute's Standard S1.4-1971 (or more recent revision thereof) for Type 1 or Type 2 sound level meters, or an instrument which provides equivalent data.

A noise not reaching this intensity of volume may still be found to be offensive depending on consideration of the other factors outlined below.

(2) Pitch (frequency) of the sound, e.g., very low bass or high screech;

(3) Duration of the sound;

(4) Time of day or night;

(5) Necessity of the noise, e.g., garbage collecting, street repair, permitted construction activities;

(6) The level of customary background noise, e.g., residential neighborhood, commercial zoning district, etc.; and

(7) The proximity to any building regularly used for sleeping purposes. [Ord. 5205 § 1, 2015; Ord. 4001 § 1, 1989]

Sensitive Receptors

Some land uses are generally regarded as being more sensitive to noise than others due to the type of population groups or activities involved. Sensitive population groups generally include children and the elderly. Noise sensitive land uses typically include all residential uses (single- and multi-family, mobile homes, dormitories, and similar uses), hospitals, nursing homes, schools, and parks.

Environmental Setting

EXISTING NOISE IN UNINCORPORATED AREA OF SANTA CRUZ COUNTY

The unincorporated areas of the county are characterized by a mix of developed and open space uses. The northern coastal area is rural in nature, with coastal bluffs and agricultural areas. Developed areas are limited to the town of Davenport and Bonny Doon. The Santa Cruz Mountains area consists of forested, open areas and rural development, primarily in and adjacent to the communities of Felton, Ben Lomond, Brookdale, and Boulder Creek. The South County is dominated by rural agricultural areas. Residential communities are located adjacent to the City of Watsonville and La Selva Beach.

According to the County's GP/LCP Noise Element, ambient noise levels vary throughout unincorporated Santa Cruz County and differ between urban and rural settings. Noise sources in the county are primarily associated with transportation facilities, including highways and roads, as well as limited rail noise and noise from airport operations. Other non-transportation-related noise generators are commonly referred to as "stationary," "fixed," "area," or "point" sources of noise.

Transportation related noises adjacent to the Program Area include Highway 1 and other heavily traveled roadways such as Freedom Boulevard. Long-term noise measurements were taken adjacent to major roadways in 2017 as part of the County's GP/LCP Noise Element. Noise

level is measured at DNL 72 dB at 25 feet from the centerline of Freedom Boulevard and DNL 77 dB at 102 feet from the centerline of highway 1.

Non-transportation related noise sources in the Program Area include agriculture operations, commercial land uses, and construction noise. However, the majority of the area is rural residential, characterized by large undeveloped lots with scattered residences.

EXISTING NOISE-SENSITIVE LAND USES

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Land uses that are generally considered as sensitive are residential, schools, transient lodging, historic sites, cemeteries, and places of worship. These land use types are also considered vibration-sensitive land uses, as are commercial and industrial buildings where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance.

Portions of the Program Area are adjacent to developed areas that are characterized by a mix of residential and commercial land uses, roadways, freeways and highways. Residences and other buildings are present in some more developed areas of the treatable landscape. Therefore, the likelihood is high that noise-sensitive receptors could be in close proximity to Program activities.

Most of the Program Area is undeveloped and rural. These areas are composed of dense forests, grasslands, and other vegetation and generally have little urban intrusion. Because these undeveloped areas are primarily on private lands, no public access is permitted, and few trails or roadways are present. Scattered residences also exist in the rural areas of the Program Area.

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following standard project requirements (SPRs), as well as any other SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR CE-5 Minimization of Noise Disruption to Nearby Neighbors and Sensitive Receptors: All projects will comply with applicable local noise ordinances. All powered equipment and power tools will be used and maintained according to manufacturer specifications. All diesel- and gasoline-powered treatment equipment will be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations.

SPR CE-6 Measures to minimize Noise Disruption: Noise control technologies will be used on equipment (e.g., mufflers, ducts, and acoustically attenuating shields) when feasible. Equipment will be turned off when not in use. Equipment will not be idled unnecessarily. Require that all construction and maintenance equipment powered by gasoline or diesel

engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation. Prohibit gasoline or diesel engines from having unmuffled exhaust. Use noise-reducing enclosures around stationary noise-generating equipment capable of 6 dB attenuation.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Would the project result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*	☐	☒	☐	☐

***Discussion*:**

Potential Temporary Noise Impacts

Less than Significant with Mitigation. Project activities involving mechanical equipment are expected to cause temporary increases in noise levels near the work areas. The level of noise will vary depending on the specific equipment and type of construction being performed (refer to Table 9 Noise Levels from Treatment Equipment Types for noise level of common construction equipment used for program activities). However, all activities under the Program will include noise-reduction measures (SPR CE-5, CE-6) to minimize disturbances to sensitive receptors and nearby communities.

The majority of the Program is rural residential land use which is typically far from sensitive receptors. Most of the Program area consists of rural residential land uses, typically located at a distance from sensitive receptors. In these areas, temporary construction noise is unlikely to result in significant disturbance. Tree removal and other on-site activities will only occur with the consent and participation of property owners and will be limited to daytime hours (MM NOI-1), when such noise is generally considered accepted.

In more developed areas, where sensitive receptors such as residents, schools, and places of worship may be nearby, some noise during project implementation may be audible. However,

any exposure is expected to be brief and temporary, and impact would be less than significant with the following mitigation measures:

MM NOI-1 Limit construction activity to between the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday, 9:00 a.m. to 5:00 p.m. Saturday in order to avoid noise during more sensitive nighttime hours. Prohibit construction activity on Sundays.

MM NOI-2 Require that all construction and maintenance equipment powered by gasoline or diesel engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.

MM NOI-3 Prohibit gasoline or diesel engines from having unmuffled exhaust.

MM NOI-4 Use noise-reducing enclosures around stationary noise-generating equipment capable of 6 dB attenuation.

Table 9 Noise Levels from Treatment Equipment Types

Equipment Type	Typical Noise Level (dB) at 50 Feet[1]
Chain Saw	85
Dozer	85
Shears (on Backhoe)	85
Excavator	85
Flat Bed Trucks	84
Woodchipper	81.8[2]

Notes: Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of equipment.
Sources: FTA, 2018
1) reference noise levels from FTA 2006 except where indicated otherwise
2) Poje et al., 2015

Potential Permanent Impacts

Less than Significant. The project would not result in a permanent increase in the ambient noise level. The main source of ambient noise in the more developed portion of the Program Area is traffic noise along Freedom Boulevard and Highway 1. However, no substantial increase in traffic trips is anticipated as a result of the project. Impacts are expected to be less than significant.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Would the project result in the generation of excessive groundborne vibration or groundborne noise levels?*	☐	☐	☒	☐

Discussion: **Less than Significant**. The use of treatment equipment would potentially generate periodic vibration in the project area. SPR CE-5 and 6 will further reduce vibration impact from equipment used for treatment activities. This impact would be temporary and periodic and is not expected to cause damage; therefore, impacts are not expected to be significant, no mitigation measure is required.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*	☐	☐	☐	☒

Discussion:

No Impact. The eastern program boundary is located within a mile of Watsonville Municipal Airport. However, the Program does not propose any development. Therefore, projects under the Program would not expose people residing or working in the project area. No impact is anticipated.

Cumulative Impacts: The cumulative impacts related to noise are expected to be negligible.

N. Population and Housing

Regulatory Setting

FEDERAL

No federal laws or regulations related to population and housing are applicable to the project.

STATE

California Housing Element Law

The California Department of Housing and Community Development (HCD) implements the California Housing Element Law, enacted in 1969. HCD is responsible for reviewing local government housing elements for compliance with state law and providing written comments to local governments. HCD determines the regional housing need for each county and allocates funding to meet this need to the council of government for distribution to its jurisdictions. The

regional housing need is informed by population projections developed by the California Department of Finance. Other factors, including economic conditions and regional housing markets, are also considered in developing the regional housing needs. HCD also oversees distribution of funding related to the regional housing need by the council of governments to the local governments to ensure that funds are appropriately allocated.

LOCAL

Santa Cruz County General Plan/Local Coastal Program

The housing element of the Santa Cruz County GP/LCP outlines goals and policies related to population and housing. Pursuant to State law, the Housing Element must be updated periodically (every eight years) according to statutory deadlines. The 2023-2031 Housing Element includes quantified objectives for housing production to address the regional housing needs allocation (RHNA) requirements and indicates that capacity exists within the County's zoning and other land use regulations to exceed the RHNA goals for the 2014-23 planning period. On November 8, 2022, AMBAG's adopted RHNA Methodology, was approved by HCD. For Santa Cruz County, the RHNA to be planned for this cycle is 4,634 units, a slated increase of 353 percent from the last cycle. The Program does not propose any new development and will not induce any population growth. Therefore, the Housing Element of the Santa Cruz County GP/LCP is not applicable.

Environmental Setting

POPULATION

According to the most recent Decennial Census (2020), the County has a population of 270,861 and an estimated 103,345 housing units in the County. Aptos Hill Larkin Valley has a population of 2,383 and 956 housing units (U.S. Census 2020).

The State of California Department of Finance (DOF) publishes annual population estimates for counties across the state in May of each year. Table 10 shows the DOF population estimates for Santa Cruz County in 2023 and provisional estimates for 2024. These population estimates indicate a countywide population of 262,572 (127,451 in the unincorporated area) as of January 1, 2024 (DOF, 2024). Table 10 also includes the estimated population growth rates from 2025 to 2045 in each of the Santa Cruz County jurisdictions.

The County Board of Supervisors adopted a population growth rate of 0.5% growth rate for the unincorporated area for 2023 and 2024. Population growth for the county overall in 2023 experienced a negative growth rate of -0.3%, up from -0.4% growth in 2022. The State of California grew at a rate of 0.2% in 2023, which is up from -0.1% growth last year.

AMBAG develops population and housing forecasts for the region. The current population forecast was adopted by AMBAG in June 2022 and covers the period from 2015 to 2045. The 2026 regional growth forecast is currently under development. Table 10 shows AMBAG's population projections within the county from 2020 through 2045. This forecast projects that the region's population will grow by approximately 107,500 people between 2015 and 2045,

for a total population of just under 869,800 in 2045. This is slightly lower than prior forecasts and follows the slowing growth rates seen at both the state and national level. In addition to slower growth, the new forecast predicts an older age distribution, with a larger proportion of the population age 65 and older. An aging population affects the household and housing unit forecasts. While population growth will slow, which reduces future housing demand, older people are more likely to live alone or in small households. This shift offsets the lower population forecast with a slight upward effect on housing demand. The net result is that the region is expected to build just over 42,200 housing units by 2045, for a total of approximately 304,900 units (AMBAG 2022)

HOUSING

Table 11 shows Santa Cruz County's housing characteristics in 2020 and 2025. According to the 2020 Census, unincorporated Santa Cruz County had 57,327 housing units. This was an increase of 400 housing units over the number of housing units in 2010 (56,927). By comparison, the county as a whole added 1,869 housing units over the last 10 years, from 104,476 housing units in 2010 to 106,345 housing units in 2020. Thus, approximately 21% of the total housing units added in the county over the last 10 years were in the unincorporated area. As of the 2020 Census, the unincorporated area had a higher vacancy rate than the county as a whole (11.1% versus 9.5%). The unincorporated area had a smaller average household size than the county as a whole (2.53 versus 2.64 persons per household) (DOF 2021).

Table 10 Santa Cruz County Population Forecast

Area	2015	2020	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Numeric Change 2015-2045	% Change 2015-2045
City of Capitola	10,224	10,108	10,485	10,794	10,957	11,049	11,126	902 9%	9%
City of Santa Cruz	64,223	64,424	68,845	72,218	75,257	78,828	79,534	15,311	24%
City of Scotts Valley	11,946	11,693	11,718	11,837	11,867	11,868	12,010	64	1%
City of Watsonville	52,410	51,515	52,918	54,270	55,138	55,786	56,344	3,934	8%
Unincorporated Area	**34,990**	**133,493**	**134,675**	**135,027**	**135,304**	**135,625**	**135,953**	**963**	**1%**
County Total	273,793	271,233	278,641	284,146	288,523	293,156	294,967	21,174	8%

Source: CDI 2024
Note: 2015 - 2020 data from DOF. Forecast years were prepared by AMBAG and the Population Reference Bureau.
Unincorporated area that is relevant to the Program Area is shown in **Bold**.

Table 11 Population and Housing Forecast in Unincorporated Area of Santa Cruz

	2010	2015	2020	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Numeric Change	% of Change
Population	129,739	134,990	133,493	134,675	135,027	135,304	135,625	135,953	963	1%
% Change		4.0%	-1.1%	0.9%	0.3%	0.2%	0.2%	0.2%		
Households	128,007	133,153	131,669	132,836	133,175	133,452	133,764	134,089	936	1%
% Change		4.0%	-1.1%	0.9%	0.3%	0.2%	0.2%	0.2%		
Housing	56,927	57,327	57,662	58,807	59,178	59,519	59,697	59,806	2,479	4%
% Change		0.7%	0.6%	2.0%	0.6%	0.6%	0.3%	0.2%		
Jobs	n/a	42,069	45,264	45,748	46,588	47,366	48,202	49,071	7,002	17%
% Change			7.6%	1.1%	1.8%	1.7%	1.8%	1.8%		

Source: DOF 2021

Note: Jobs data for 2000-2015 are from California Employment Development Department and InfoUSA; population, household, and housing data for years 2000-2020 are from the U.S. Census Bureau and the California Department of Finance. Forecast years were prepared by AMBAG and Population Reference Bureau.

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement SPRs developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances. There are no applicable SPRs related to population and housing.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1. *Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*	☐	☐	☐	☒

Discussion: **No Impact**. The Program would not induce substantial population growth in an area because the Program does not propose any physical or regulatory change that would remove a restriction to or encourage population growth in an area. The Program proposes only to remove non-native eucalyptus tree and restore native habitat and would not induce population growth. No impact would occur.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*	☐	☐	☐	☒

Discussion: **No Impact**. The Program involves non-native tree removal and habitat restoration. The Program would not displace any existing housing. No impact would occur.

Cumulative Impacts: There would be now direct or foreseeable indirect impact related to population and housing. Therefore, no cumulative impacts would occur.

O. Public Services

Regulatory Settings

FEDERAL

National Fire Protection Association Standards

Since 1896, the National Fire Protection Association has developed standards directly affecting the fire service at the department level. As an advocate of fire prevention and an authoritative source on public safety, the National Fire Protection Association develops, publishes, and disseminates more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks. Their vision is to advocate for the elimination of death, injury, property and economic loss due to fire, electrical and related hazards.

STATE

California Fire Code

The California Fire Code is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The California Fire Code establishes minimum requirements to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings. The California Fire Code also contains requirements related to emergency planning and preparedness, fire service features, building services and systems, fire resistance–rated construction, fire protection systems, and construction requirements for existing buildings, as well as specialized standards for specific types of facilities and materials.

California Occupational Safety and Health Administration

In accordance with 8 CCR Section 1270, "Fire Prevention," and Section 6773, "Fire Protection and Fire Fighting Equipment," the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include guidelines on the handling of highly combustible materials; fire hose sizing requirements; restrictions on the use of compressed air; access roads; and the testing, maintenance, and use of all firefighting and emergency medical equipment.

Emergency Response/Evacuation Plans

The State of California passed legislation authorizing the Office of Emergency Services to prepare a Standard Emergency Management System program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with Standard Emergency Management System program could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster. The preservation of life, property and the environment is an inherent responsibility of local, state, and federal governments. The County is required to prepare and implement an emergency operations plan under the Standard Emergency Management System program.

LOCAL

County of Santa Cruz General Plan/Local Coastal Program

The County of Santa Cruz GP/LCP is a comprehensive, long-term planning document for the unincorporated areas of the county and includes the County's LCP, which was certified by the California Coastal Commission in 1994. The County GP/LCP provides policies and programs to establish guidelines for future growth and all types of physical developments. The existing Parks and Public Facilities Element includes objectives and policies that address public services and facilities, including fire and police protection, schools, parks, libraries, and other public services and facilities. The existing Conservation and Open Space Element addresses open space protection, and the Public Safety Element also addresses fire hazards.

Environmental Settings

FIRE SERVICES

Local Fire Protection Agencies

Fire protection in California is the responsibility of the federal, state, or local government. Fire protection within Santa Cruz County is provided by 13 entities, including nine fire protection districts (FPDs), two community service areas, and two city fire departments. All of these fire agencies serve unincorporated areas of the county except the City of Santa Cruz Fire Department, whose service area is within the city limits. Each fire protection district conducts its own planning process including the development of a master plan, if the district maintains a master plan. However, most fire protection agencies are supported by mutual aid agreements with other jurisdictions. The Program Area includes planning areas that fall under the jurisdiction of Central Fire District, Santa Cruz County Fire, and Pajaro Valley Fire Protection District.

Approximately 43% of the entire county consists of unincorporated lands outside a fire district or city that provides fire protection. This resulted in the formation of CSA 48, also known as Santa Cruz County Fire. CSA 48 is a special district governed by the County Board of supervisors. (All community service areas are formed and operate pursuant to the County Service Area Law [Government Code section 25210 et seq.]). Santa Cruz County currently contracts with the California Department of Forestry and Fire Protection (CAL FIRE) for the administration of CSA 48 including operational oversight and supervision of all career and volunteer firefighters (SCCFD 2023). CAL Fire San Mateo-Santa Cruz Unit (CZU) station 41 in Corralitos is just north to the Program boundary and Central Fire District station 6 in Aptos is less than a mile south to the Program Area.

Under state law, the fire agencies in Santa Cruz County can provide the following services: fire protection services, rescue services, emergency medical services, hazardous material emergency response services, ambulance services, and other services relating to the protection of lives and property is critical to the public peace, health, and safety of the state. Each agency's service area and staffing levels are summarized in Table 12 Fire Protection Services within Santa Cruz County. According to the latest review by Santa Cruz Local Agency Formation

Commission (LAFCO) in 2021, 54% of the fire agencies in the county (seven out of 13) meet the state standard for two staff members per shift. Only 15% of the agencies (two out of 13) meet the national standard of four staff per shift (LAFCO 2021).

Table 12 Fire Protection Services within Santa Cruz County

Fire Department	Service Area	Fire Stations	Staffing Levels	Planning Area
Aromas Tri-County Fire Protection District (FPD)	63 square miles in Santa Cruz, San Benito, and Monterey counties	1	Staff not reported	Salsipuedes
Ben Lomond FPD	Community of Ben Lomond and the surrounding area	1	1 full-time (FT) employee, 1 part-time (PT) employee, 30 volunteer firefighters	San Lorenzo Valley
Boulder Creek FPD	21 square miles from Boulder Creek and Brookdale	2	1 FT employee, 1 PT employee, 43 volunteer firefighters	San Lorenzo Valley, Skyline
Branciforte FPD	Unincorporated area between the cities of Santa Cruz and Scotts Valley	1	3 FT employees, 13 volunteer firefighters	Carbonera, Summit
Central Fire District	**55 square miles encompassing the communities of Live Oak, Capitola, Soquel, Aptos, Rio Del Mar, and La Selva Beach**	**7**	**101 FT employees, 1 PT employee, 3 seasonal personnel, 10 volunteer firefighters**	**Aptos, Aptos Hills, Live Oak, Soquel, La Selva Beach, San Andreas, Summit**
Pajaro Dunes FPD	0.2 square miles in Pajaro Dunes in	1	Staff not reported	Pajaro Valley

Fire Department	Service Area	Fire Stations	Staffing Levels	Planning Area
(County Service Area 4)	south coastal Santa Cruz County			
Santa Cruz County Fire (CSA 48)	**286 square miles of rural Santa Cruz County's**	**10**	**Staff not reported**	**Countywide (outside of other district boundaries)**
Felton FPD	Community of Felton and the surrounding area	1	1 FT employee, 1 PT employee, 28 volunteer firefighters	San Lorenzo Valley
Pajaro Valley FPD	**52 square miles in the unincorporated portions of South County, surrounding the City of Watsonville**	**1**	**Staff not reported**	**Aptos Hills, Eureka Canyon, Pajaro Valley, Salsipuedes**
Santa Cruz City Fire Department	City of Santa Cruz	4	Staff not reported	NA
Scotts Valley FPD	22 square miles, including the City of Scotts Valley and the surrounding area	2	22 FT firefighters, 3 FT Battalion Chiefs, 1 FT Fire Chief, 2 FT and 1 PT administrative personnel, 15 volunteer firefighters	Carbonera, San Lorenzo Valley, Skyline, Summit
Watsonville City Fire Department	14 square miles including the City of Watsonville and	2	Staff not reported	Pajaro Valley

Fire Department	Service Area	Fire Stations	Staffing Levels	Planning Area
	the surrounding area			
Zayante FPD	Community of Zayante and the surrounding area	3	3 FT firefighters, 2 PT employees, 22 volunteer firefighters	San Lorenzo Valley, Skyline

Source: LAFCO 2021, County GIS 2024.
Notes: CSA = County Service Area; FT = full-time; FPD = Fire Protection District; PT = part-time. Fire departments relevant to the Program Area are shown in **Bold**.

State Fire Agencies

CAL FIRE has mapped areas of significant fire hazards in the state through its Fire and Resources Assessment Program. As further explained in Section T., Wildfire, these areas are referred to as Fire Hazard Severity Zones (FHSZs) and are identified for Federal Responsibility Areas (FRAs), where federal agencies have responsibility for wildfire protection, State Responsibility Areas (SRAs), where CAL FIRE has responsibility for wildfire protection, and Local Responsibility Areas (LRAs), where local fire protection agencies have responsibility for wildfire protection. Different FHSZs (moderate, high, and very high) are based on a hazard scoring system using subjective criteria for fuels, fire history, terrain influences, housing density, and occurrence of severe fire weather where urban conflagration could result in catastrophic losses.

POLICE SERVICES

County Sheriff's Office

Police services in the unincorporated areas of the county are provided by the Santa Cruz County Sheriff's Office (SCSO), which also operates the County jails. The County Sheriff's Office provides primary law enforcement services in the unincorporated areas of the county. The Sheriff's Office provides public protection and law enforcement through the enforcement of local, state, and federal laws. In 2023, the Sheriff's Office had 355 total employees: 167 sworn staff, 111 correctional officers, and 77 professional staff (SCSO 2023).

Approximately half of Santa Cruz County's resident population lives in unincorporated areas. The Sheriff's Office operates out of its headquarter facilities in Live Oak, and there are seven Sheriff stations located throughout the county as shown in Table 13 Santa Cruz County Sheriff's Department Facilities below. Sherrif Station within the Program Area includes South County Service Center that services Corralitos and Freedom and Aptos/La Selva Sheriff's Service Center that services Aptos, Rio Del Mar, Seascape, Seacliff, and La Selva Beach.

Table 13 Santa Cruz County Sheriff's Department Facilities

Sheriff Facilities	Location	Service Area
County Sheriff Headquarters	5200 Soquel Avenue, Santa Cruz	Santa Cruz County
Aptos/La Selva Sheriff's Service Center	171 Aptos Village Way Suite T1, Aptos	Aptos, Rio Del Mar, Seascape, Seacliff, and La Selva Beach
Boulder Creek Sheriff's Service Center	13210 Central Avenue (SR 9), Boulder Creek	Boulder Creek
Cabrillo Sheriff's Office	6500 Soquel Drive, Aptos	Cabrillo College
Live Oak/Soquel Service Center	5200 Soquel Avenue, Santa Cruz	Live Oak, Soquel and Summit
North Coast Substation	75 Marine View Avenue, Davenport	Davenport
San Lorenzo Valley Sheriff's Service Center	6062 Graham Hill Road, Suite A & B, Felton	Ben Lomond, Bonny Doon, Brookdale, Felton, Mount Hermon, and Zayante/Lompico
South County Service Center	790 Green Valley Road, Watsonville	Corralitos and Freedom

Source: SCSO 2023

California Highway Patrol

The California Highway Patrol (CHP) is responsible for patrolling state highways and county roadways, enforcing traffic regulations, responding to traffic accidents, and providing service and assistance to drivers in disabled vehicles. CHP maintains a mutual aid agreement with the Santa Cruz County Sheriff's Office and assists local governments during emergencies when requested. Santa Cruz County is located within the CHP Coastal Division, whose service area includes 325 miles along the Central Coast with 11 area offices, one resident post, two commercial vehicle inspection facilities, and three communication/dispatch centers. These facilities are staffed by nearly 700 uniformed and non-uniformed employees. The area office in Santa Cruz County (Office 720) is located at 10395 Soquel Drive in Aptos (CHP 2025).

SCHOOLS

There are 10 public school districts located within the county with a total enrollment of nearly 38,000 students at the kindergarten to high school levels, as well as one community college district (i.e. Cabrillo) and one state university (i.e. UCSC) that offer education in the county. Two additional school districts are located outside of the county but serve some residents in the county. Existing school districts are summarized in Table 14 Santa Cruz County School Districts. The Program Area is under the Pajaro Valley Unified School District, which includes 20 elementary schools and 15 secondary schools (SCCOE, 2025).

SCCOE is a public agency charged with providing educational leadership, resources, and services to schools to ensure quality educational opportunities for all students. This mission is accomplished through partnerships with teachers, school districts, nonprofits, parents, businesses, and other governmental agencies. Direct instructional programs are offered through special education, alternative education and regional occupational programs. District services are provided in the areas of professional development and fiscal services.

Table 14 Santa Cruz County School Districts

District	Number of School Facilities	2023-2024 Enrollment (students)	County Planning Area Served
Pajaro Valley Unified	**18 Elementary (K-5)** **1 School of the Arts (K-8)** **1 Charter (K-12)** **6 Middle (6-8)** **4 High (9-12)** **1 Adult School**	**17,520**	**Aptos, Pajaro Valley**
San Lorenzo Valley Unified	2 Elementary (K-5) 1 Middle (6-8) 1 High (9-12) 2 Charter	5,540	San Lorenzo Valley
Santa Cruz City Schools-High school	4 Elementary (K-5) 1 Alternative School 2 Middle (6-8) 4 High (9-12)	4,504	Soquel and City of Santa Cruz

District	Number of School Facilities	2023-2024 Enrollment (students)	County Planning Area Served
	1 Charter 3 Alternative		
Scotts Valley Unified	2 Elementary (K-5) 1 Middle (6-8) 1 High (9-12) 1 Charter	2,694	Carbonera
Santa Cruz City Schools-Elementary	4 Elementary (K-5) 1 Alternative School 2 Middle (6-8) 4 High (9-12) 1 Charter 3 Alternative	1,768	City of Santa Cruz
Live Oak Elementary	4 Elementary (K-5) 1 Charter (K-8) 1 Middle (6-8)	1,675	Live Oak
Soquel Union Elementary	3 Elementary (K-5) 1 Middle (6-8)	1,566	Soquel
Pacific Elementary	1 Elementary School (PS-6)	167	Davenport
Mountain Elementary	1 Elementary School (K-6)	163	Soquel
Happy Valley Elementary	1 Elementary (K-6)	122	Carbonera
Bonny Doon Union Elementary	1 Elementary (K-6)	97	Bonny Doon

Source: SCCOE 2024

Note: School District relevant to the Program Area is shown in **Bold**.

PARKS

The Santa Cruz County Parks, Open Space, and Cultural Services Department (County Parks) manages 41 parks and open space properties totaling nearly 1,600 acres and 29 miles of coastline (County Parks 2025). The County parks system serves the county in two ways: regional facilities that serve the entire county's population and local parks (e.g., neighborhood, rural, and community parks) that serve unincorporated neighborhoods that are outside an independent recreation and park district boundary. The County's park system includes 883 acres of county-operated public parks as well as 710 acres of open space (County Parks 2025). The County's parks are classified primarily as neighborhood, community, rural, and regional. County parks in the Program Area include Polo Grounds Park in Aptos, Bert Scott Estate Park in Corralitos, and Scott Park and Freedom Lake Park in Watsonville.

In addition to County parks, there are four independent recreation and park districts within the unincorporated areas of the county: Alba Road, Boulder Creek, La Selva, and Opal Cliffs, which are outside of the purview of the County. Along with parkland belonging to the County, the municipalities, and the special recreation and park districts, there are also a number of state lands. Approximately 1,500 acres are managed by the CDFW, primarily in ecological reserves focused on conservation and which are not accessible to the public (Santa Cruz County Parks 2025). There are also a number of state forests, parks, and beaches, which are accessible to the public. In addition to County parks, the State of California owns and operates 15 state parks within the county, totaling 42,120 acres (California Department of Parks and Recreation 2025).

OTHER PUBLIC FACILITIES

Library services are provided by the Santa Cruz Public Libraries District and are governed by a Joint Powers Authority that includes all jurisdictions in Santa Cruz County, except for Watsonville, which manages its own public library system. The Library's Strategic Plan and Facilities Master Plan contains detailed information on the vision and planned improvements for libraries in the county. The city-County library system serves approximately 200,000 residents throughout the county, (Santa Cruz Public Libraries 2021). The Santa Cruz Public Library system includes 10 neighborhood library branches: Aptos, Boulder Creek, Branciforte, Capitola, Downtown Santa Cruz, Felton, Garfield Park, La Selva Beach, Live Oak, and Scotts Valley. Santa Cruz Public Libraries also administers a web-based digital library, a Bookmobile and community-based education and enrichment programs (Santa Cruz Public Libraries 2025). The City of Watsonville operates two facilities—the Main Library and the Freedom Branch Library. The Watsonville libraries provide a both in-person and virtual services, as well as variety of community programs (Watsonville Public Library 2025).Libraries adjacent to the Program Area include the Freedom Branch library (approximately 1 mile east to the eastern Program Area boundary), Watsonville public library (approximately 3 miles southwest to the Program Area boundary), La Selva beach branch library (approximately 1.2 mile southwest to

the Program Area boundary), and Aptos branch library (approximately 0.8 mile west to the Program Area boundary).

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following standard project requirements (SPRs), as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR FP-2 Immediate Fire Suppression Station (IFSS): A five-gallon backpack pump, Mcleod hand tool, and shovel will be strategically staged within 250 feet of any mastication or chipping operations for ground crew or spotters to immediately extinguish any ignition.

SPR FP-3 Restrict Location of Flammable Materials: Flammable materials will be kept at least 10 feet away from any equipment that could produce a spark, fire, or flame. Portable tools powered by gasoline-fueled internal combustion engines will not be used within 25 feet of any flammable materials unless at least one round-point shovel or fire extinguisher is within immediate reach of the work crew (no more than 25 feet away from the work area).

SPR FP-4 Identify Potential Ignition Hazards: Treatment areas will be walked prior to operations to determine if there are any potential ignition hazards such as rocks, metal objects, or fuel sources that could act as possible ignition points. The Contractor should adjust operational schedules to operate in these areas when fire hazard risks are the lowest, such as early morning.

SPR FP-5 Identify Potential Ignition Hazards: Work areas will be walked at the end of each day to conduct a fire check unless conditions are too wet for an ignition to occur. During times when vegetation is flammable, a minimum of 2-hour fire watches each day following conclusion of mechanized operations. Fire watch may include time spent conducting routine end-of-day equipment maintenance.

SPR FP-6 Avoid Metal Equipment: Avoid metal string or blade weed trimmers.

SPR FP-12 Compliance with CalFire, Fire Departments, and MBARD: All requirements of CAL FIRE, the local fire department, and/or the MBARD will be met, including any permit, notification, burn bans, and reporting requirements. Have fire suppression crews on-site during the fire season determined by CAL FIRE or the local fire department (typically mid-May to mid-November) during curtain and pile burns. Pile burning will adhere to MBARD criteria pollutant thresholds and Regulation 5 for open burning.

SPR TRFFC-3 Submit Traffic Control Plan: The Contractor is responsible for assessing treatment areas to determine where traffic control may be needed. The Contractor will provide the RCD with a traffic control plan to be approved by the County of Santa Cruz Public Works Department.

SPR TRFFC-4 Flag or Sign Road/Lane/Route Closures Per Public Works Protocol: The Contractor is responsible for compliance with the County-approved traffic control plan, including but not limited to the use of signage, cones, a flagger, or additional traffic control personnel as appropriate for the site.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:*				
a. *Fire protection?*	☐	☐	☒	☐
b. *Police protection?*	☐	☐	☐	☒
c. *Schools?*	☐	☐	☐	☒
d. *Parks?*	☐	☐	☐	☒
e. *Other public facilities; including the maintenance of roads?*	☐	☐	☐	☒

Discussion (a through e):

Less than Significant. The proposed Program would not directly or indirectly induce population growth or create a need for new housing, infrastructure, or other development that would increase demand for public services such as fire protection, police services, schools, parks, or other facilities. No new or expanded governmental facilities would be required as a result of Program implementation.

Prescribed burning activities, including pile and broadcast burning, could temporarily increase the risk of uncontrolled fire, which may necessitate fire protection services. However, this risk would be minimized through extensive planning and implementation measures. Prior to any prescribed burn, the County will prepare a Smoke Management Plan, implement stringent safety protocols, and conduct active monitoring throughout the burn process, as outlined in (SPR BIOM-2). Additional measures described in SPRs FP-1 through FP-12 will further reduce fire risk associated with vegetation treatment activities. The County will also coordinate with local fire agencies and provide advance public notification should road closure is necessitated (SPRs TRFFC-3 and TRFFC-4). Collectively, these actions ensure that prescribed burns do not substantially increase fire risk or place additional demands on fire protection services.

In fact, the Program is expected to provide a long-term benefit to fire protection. By removing highly flammable non-native eucalyptus, which generates dense leaf litter and peeling bark,

the Program would reduce fuel loads, slow wildfire spread, enhance defensible space, and improve emergency response effectiveness. Therefore, impacts related to public services would be less than significant, and no mitigation is required.

Cumulative Impacts: As discussed above, the Program would not result in direct or foreseeable indirect impacts. Therefore, no cumulative impacts would occur.

P. Recreation

Regulatory Setting

FEDERAL

No federal laws or regulations related to recreation are applicable to the program.

STATE

California Department of Fish and Wildlife

CDFW manages fish, wildlife, and plant resources, and habitats on which species depend, for their ecological values and for public enjoyment. CDFW is divided into seven regions throughout the state. Each region is responsible for the conservation, protection, and management of wildlife, native plants, and habitat necessary to maintain biologically sustainable populations. Per Section 1019 of the Fish and Game Code, CDFW must draft LMP for any property wholly under its jurisdiction that was purchased after January 1, 2002. Generally, each LMP includes an Element that serves as a guide for appropriate public uses for that property, including recreation. In addition, visitor use of all CDFW properties is subject to 14 CCR, which includes regulations that outline designated public uses, allowed activities, and restrictions for all CDFW properties.

California Department of Parks and Recreation

California State Parks is charged with preparing and adopting a general plan for each of its facilities. The general plan directs the long-range development and management of a park by providing broad policy and program guidance. For the purposes of lands managed by California State Parks, the State is divided into 19 districts. Each district provides oversight for facilities within its service area.

LOCAL

Santa Cruz County General Plan/Local Coastal Program

The Parks, Recreation + Public Facilities Element is an optional element under state planning law. This element addresses topics related to providing community facilities and infrastructure to support existing and future populations. The park development policies and implementation strategies in this element address land uses related to recreation, set standards for parks, and address the provision of adequate park facilities, their funding, sharing with other jurisdictions, and equitable access.

Environmental Setting

LOCAL PARKS

The County Parks manages 43 parks and open space properties totaling nearly 1,600 acres and 29 miles of coastline (County Parks 2025). The County parks system serves the county in two ways: regional facilities that serve the entire county's population and local parks (e.g., neighborhood, rural, and community parks) that serve unincorporated neighborhoods that are outside an independent recreation and park district boundary. The County's Park system includes 883 acres of county-operated public parks as well as 710 acres of open space (County Parks 2025). The County parks system serves communities in the County in two ways: regional facilities that serve the entire County's population, and local parks (e.g., neighborhood, rural, community parks, and coastal access) that serve unincorporated neighborhoods that are outside an independent recreation and park district boundary. County Park within the Program Area includes Polo Grounds Park in Aptos, Bert Scott Estate Park in Corralitos, and Scott Park and Freedom Lake Park in Watsonville.

EFFECTS OF WILDFIRE ON RECREATION

Many of California's ecosystems are fire-adapted. However, in recent decades, increasing drought frequency and warming temperatures have led to an increase in wildfire activity (Westerling 2016). California has seen increases in wildfire activity in terms of area burned, frequency of large fires, and fire season length (Westerling 2016, Abatzoglou and Williams 2016). During wildfire incidents all areas near or adjacent to managed recreational areas are closed to ensure visitor safety. The 2020 CZU Lightning Complex fire caused extensive damage to Big Basin Redwoods State Park and other nearby parks, resulting in closures and restrictions. While some areas have reopened for limited access, including the Redwood Loop Trail in Big Basin, significant portions remain closed due to ongoing recovery work and hazardous conditions.

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following SPRs, as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR TRFFC-2 Restrict Traffic in Residential Areas: Heavy equipment and haul traffic will be prohibited in residential areas to the greatest extent feasible. When no other route to and from the site is available, heavy equipment and haul traffic through residential areas will be restricted to the hours of 8 a.m. to 5:30 p.m., Monday through Friday. If heavy equipment or hauling is required beyond the hours above, the County or their contractor would provide notice to adjacent property owners 48 hours in advance of such activities.

SPR TRFFC-3 Submit Traffic Control Plan: The Contractor is responsible for assessing treatment areas to determine where traffic control may be needed. The Contractor will provide the RCDSCC with a traffic control plan to be approved by the County of Santa Cruz Public Works Department.

SPR TRFFC-4 Flag or Sign Road/Lane/Route Closures Per Public Works Protocol: The Contractor is responsible for compliance with the County-approved traffic control plan, including but not limited to the use of signage, cones, a flagger, or additional traffic control personnel as appropriate for the site.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐

Discussion: **Less than Significant**. Typically, this impact occurs when a project induces population growth, such as a new housing development or a business that would necessitate a large number of new employees. As discussed in Section "Land Use and Planning, Population and Housing," implementation of the proposed Program would not induce substantial population growth. The workers implementing the program activities are anticipated to be sourced from existing contractor crews in the region. This would not substantially increase use of existing recreational facilities by employees associated with program activities. Therefore, implementation of the Program would not substantially increase the use of existing neighborhood and regional parks or other recreational facilities. Impacts related to recreation would be less than significant, and no mitigation is required.

The Program will also include SPR TRFFC-4, Flag or Sign Road/Lane/Route Closures Per Public Works Protocol, in the event that access to recreational resources will be affected by burning activities or non-fire vegetation management activities that could pose a danger to recreational users accessing the unit, such as hazard tree felling and mastication activities.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*	☐	☐	☐	☒

Discussion: **No Impact**. The Program does not propose the expansion or require the construction of additional recreational facilities. Moreover, the proposed Program would result in a net positive effect on recreation by decreasing wildfire effects on recreation resources. No impact would occur.

Cumulative Impacts: As discussed above, the Program would not result in direct or foreseeable indirect impacts. Therefore, no cumulative impacts would occur.

Q. Transportation

Regulatory Setting

FEDERAL

Federal Highway Administration

FHWA, an agency of the U.S. Department of Transportation, provides stewardship over the construction and preservation of the nation's highways, bridges, and tunnels. FHWA also provides regulation and guidance related to work zone safety, mobility, and temporary traffic control device implementation. FHWA regulation and guidance related to work zone safety, mobility, and temporary traffic control device implementation is relevant because it informs the standard project requirements of the proposed Program addressed within this PIS.

STATE

California Department of Transportation

Caltrans is responsible for planning, designing, constructing, operating, and maintaining the state highway system and ramp interchange intersections. Caltrans is also responsible for highway, bridge, and rail transportation planning, construction, and maintenance.

Caltrans provides guidance to local agencies on assessing the performance of rural roadways to enhance safety, mobility, accessibility and productivity under continued use. Caltrans requires transportation permits for the movement of vehicles or loads exceeding the limitations on the size and weight contained in Division 15, Chapter 5, Article 1, Section 35551, of the California Vehicle Code. Treatment activities would require the short-term use of state and locally managed roadways; and thus, Caltrans guidance and standards specifically related to the performance of rural state roadways and vehicle size and weight limitations would apply to the proposed Program.

California Manual on Uniform Traffic Control Devices

This California Manual on Uniform Traffic Control Devices is published by Caltrans and is issued to adopt uniform standards and specifications for all official traffic control devices in California. Temporary traffic control (TTC) applies when the normal function of the roadway, or a private road open to public travel, is suspended and is intended to provide for the reasonably safe and effective movement of road users through or around TTC zones while reasonably protecting road users, workers, responders to traffic incidents, and equipment. TTC planning provides for continuity of the movement of motor vehicle, bicycle, and pedestrian traffic (including accessible passage); transit operations; and access to property and utilities. TTC plans should be prepared by persons knowledgeable about the fundamental principles of TTC and work activities to be performed, and the design, selection, and placement of TTC devices for a TTC plan should be based on engineering judgment (Caltrans 2023). California Manual on Uniform Traffic Control Devices TTC standards and specifications would apply to TTC, or other related plans developed as part of, or in response to the proposed Program.

Transportation Management Plan Guidelines

The Caltrans Transportation Management Plan Guidelines (2015) identify the processes, roles, and responsibilities for preparing and implementing Transportation Management Plans (TMPs), as well as useful strategies for reducing congestion and managing work zone traffic impacts. TMP strategies are required for all planned construction, maintenance, and encroachment permit activities within Caltrans right-of-way and requires a Caltrans encroachment permit. A TMP encompasses activities that are implemented to minimize traffic delays that may result from lane restrictions or closures in a work zone. TMP strategies are designed to improve mobility, as well as safety for the traveling public and highway workers. TMP strategies would be required if treatment activities would require a Caltrans encroachment permit. Additionally, TMP guidance will inform the standard project requirements of the proposed Program addressed.

Senate Bill 743

SB 743, passed in 2013, required the Governor's Office of Planning and Research (OPR) to develop new CEQA guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any." SB 743, signed by Governor Jerry Brown in 2013, changed the way transportation impacts are identified under CEQA. Specifically, the CEQA Guidelines were updated in December 2018, such that vehicle level of service (LOS) will no longer be used as a determinant of significant environmental impacts, and an analysis of VMT will be required as of July 2020.

OPR published its proposal for the comprehensive updates to the CEQA Guidelines in November 2017 which included proposed updates related to analyzing transportation impacts pursuant to Senate Bill 743. These updates indicated that VMT be the primary metric used to identify transportation impacts. In December of 2018, OPR published the most recent version of the Technical Advisory on Evaluating Transportation Impacts (OPR 2018) which provides guidance for VMT analysis. The Office of Administrative Law approved the updated CEQA Guidelines and lead agencies have an opt-in period until July 1, 2020, to implement the updated guidelines.

As noted in the updated guidelines, agencies are directed to choose metrics that are appropriate for their jurisdiction to evaluate the potential impacts of a project in terms of VMT. The guidance provided thus far relative to VMT significance criteria is focused on residential, office, and retail uses which would not apply to the rural and temporary transportation uses that would occur with implementation of the Program. For rural land uses, OPR guidance states that projects in rural areas outside of a metropolitan planning organization, as in the case of many locations of the treatable landscape, fewer options may be available for reducing VMT and significance thresholds may be best determined on a case-by-case basis.

LOCAL

Santa Cruz County VMT Mitigation Program

In June of 2020, the County of Santa Cruz adopted a threshold of 15% below the existing countywide average per capita VMT levels for residential projects, 15% below the existing countywide average per employee VMT for office and other employee-based projects, no net increase in the countywide average VMT for retail projects, and no net increase in VMT for other projects. Based on the countywide travel demand model the current countywide average per capita VMT for residential uses is 10.2 miles. The current countywide per employee average VMT for the service sector (including office land uses) is 8.9 miles, for the agricultural sector is 15.4, for the industrial sector is 13.9, and for the public sector is 8.2. Therefore, the current VMT thresholds for land use projects are 8.7 miles per capita for residential projects. For employee-based land uses the current thresholds are: 7.6 miles per employee for office and services projects, 13.1 miles per employee for agricultural projects, 11.8 miles per employee for industrial projects, and 7 miles per employee for public sector land use projects. The threshold for retail projects and all other land uses is no net increase in VMT. For mixed-use projects, each land use is evaluated separately unless they are determined to be insignificant to the total VMT.

Santa Cruz County GP/LCP

Types of local regulations relevant to transportation include City and County General Plans, zoning ordinances, traffic impact analysis guidelines, and associated policies. The Access and Mobility Element of the GP/LCP includes objectives and policies that address VMT, vehicle occupancy, the bikeway system, pedestrian travel, and roadway capacity/LOS.

SCCC Section 13.11.074, Access, Circulation and Parking

The purpose of this section is to provide standards for lot access, parking design, circulation standards, parking lot design.

SCCC Title 9, Roads, Vehicles and Traffic

This title sets forth rules and regulations regarding the use and specific designations for the county's roadway system as well as sets forth controls for encroachments on county-maintained roads and establishes the administrative procedure for issuance of permits. It also provides for review and approval of plans, inspection procedures, and bonding procedures to guarantee quality and completion of work on the county's roadway system.

Environmental Setting

The majority of the Program Area is characterized by its rural residential setting and limited road infrastructure. The area is primarily accessed via a few key routes, with Highway 1 serving as the main corridor for regional connectivity. Caltrans has jurisdiction over state highways. The Program would be subjected to Caltrans Transportation Management Plan Guidelines should work occurs in Caltrans ROW. Other local access road includes Freedom Boulevard that connects the community to Highway 1 and serves as a primary north-south route as well as Aptos Rancho Road that provides access to the western portions of the Program area, linking to Soquel Drive and facilitating local travel.

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following SPRs, as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR TRFFC-2 Restrict Traffic in Residential Areas: Heavy equipment and haul traffic will be prohibited in residential areas to the greatest extent feasible. When no other route to and from the site is available, heavy equipment and haul traffic through residential areas will be restricted to the hours of 8 a.m. to 5:30 p.m., Monday through Friday. If heavy equipment or hauling is required beyond the hours above, the County or their contractor would provide notice to adjacent property owners 48 hours in advance of such activities.

SPR TRFFC-3 Submit Traffic Control Plan: The Contractor is responsible for assessing treatment areas to determine where traffic control may be needed. The Contractor will provide

the RCDSCC with a traffic control plan to be approved by the County of Santa Cruz Public Works Department.

SPR TRFFC-4 Flag or Sign Road/Lane/Route Closures Per Public Works Protocol: The Contractor is responsible for compliance with the County-approved traffic control plan, including but not limited to the use of signage, cones, a flagger, or additional traffic control personnel as appropriate for the site.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐

***Discussion*: Less than Significant**. The Program proposes removal of non-native vegetation and restoration of habitat and does not propose any new development. There would be no operational changes to the vehicle circulation system because no additional traffic would be generated other than worker's commuting to and from the project site. An estimated 8 to 22 daily one-way vehicle trips would occur, depending on whether the number of projects occurring at the same time. Vehicle trips generated from implementation would not exceed the threshold of 110 trips per day[4].If the project necessitates temporary road closure for construction equipment staging or public safety, the project will comply with all applicable program, plan, ordinance, or policy addressing the circulation system, including the Santa Cruz GP/LCP and the SCCC. Therefore, no impact would occur.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1) (Vehicle Miles Traveled)?	☐	☐	☒	☐

***Discussion:* Less than Significant**. Implementation of projects under the Program could generate additional vehicle trips in the area. An estimated 8 to 22 daily one-way vehicle trips would occur, depending on whether the number of projects occurring at the same time. Vehicle trips generated from implementation would not exceed the threshold of 110 trips per

[4] The Office of Planning and Research identifies a screening threshold for a small land-use project as a project that generates or attracts fewer than 110 trips per day. Projects that generate fewer than this threshold may be assumed to cause a less-than-significant transportation impact (OPR, 2018). Although a vegetation treatment project is not a land use project, it is assumed that the screening threshold would still apply to the proposed project.

day[5].The VMT associated with implementation of the proposed project would not conflict with State CEQA Guidelines section 15064.3, subdivision (b). Pile burning could be conducted as a method of vegetative debris disposal. Pile burns would be performed away from roadways and would not be a hazard to passing motorists or recreationalists due to the small size of the burns and monitoring during the burn. Traffic impacts is expected to be less than significant, and no mitigation is required.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

***Discussion*: No Impact**. The program does not include any alteration in the design or use of existing transportation systems. The Program consists of non-native eucalyptus removal and habitat restoration. No increase in hazards would occur from project design or from incompatible uses. No impact would occur from project implementation.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Would the project result in inadequate emergency access?	☐	☐	☒	☐

***Discussion*: Less than Significant**. A temporary lane closure may be required for short periods of time during tree work for public safety or construction equipment staging. In the event where temporary closure is necessitated, a traffic control plan that outlines alternative route would be prepared (SPR TRFFC-3). As part of the traffic control plan, local public services would be alerted, as applicable, to maintain emergency response times and accessibility throughout project implementation. As a result, the project would not restrict emergency access for police, fire, or other emergency vehicles. Impacts would be less than significant from project implementation.

Cumulative impacts: The cumulative aesthetic impacts of the program are expected to be negligible.

[5] The Office of Planning and Research identifies a screening threshold for a small land-use project as a project that generates or attracts fewer than 110 trips per day. Projects that generate fewer than this threshold may be assumed to cause a less-than-significant transportation impact (OPR, 2018). Although a vegetation treatment project is not a land use project, it is assumed that the screening threshold would still apply to the proposed project.

R. Tribal Cultural Resources

Regulatory Setting

STATE

California Environmental Quality Act

CEQA also requires lead agencies to consider whether projects will impact tribal cultural resources. PRC Section 21074 states the following:

a) "Tribal cultural resources" are either of the following:

1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1. 2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "non-unique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act applies to both state and private lands. The Act requires that upon discovery of human remains, construction or excavation activity cease and the County coroner be notified. If the remains are of a Native American, the coroner must notify NAHC, which notifies and has the authority to designate the most likely descendant (MLD) of the deceased. The Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Health and Safety Code Sections 7050.5 and 7052

Section 7050.5 of the Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the NAHC. Section 7052 states that the disturbance of Native American cemeteries is a felony.

Public Resources Code Section 5097

PRC Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on non-federal land. The disposition of Native American burial falls within the jurisdiction of the NAHC. PRC Section 5097.5 states the following:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Public Resources Code Section 21080.3

AB 52, signed by the California Governor in September of 2014, established a new class of resources under CEQA: "tribal cultural resources," defined in PRC 21074. Pursuant to PRC Sections 21080.3.1, 21080.3.2, and 21082.3, lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation before the release of an environmental impact report, negative declaration, or mitigated negative declaration.

PRC Section 21080.3.2 states:

> Within 14 days of determining that a project application is complete, or to undertake a project, the lead agency must provide formal notification, in writing, to the tribes that have requested notification of proposed projects in the lead agency's jurisdiction. If it wishes to engage in consultation on the project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification. The lead agency must begin the consultation process with the tribes that have requested consultation within 30 days of receiving the request for consultation. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process,

provisions under PRC Section 21084.3(b) describe mitigation measures that may avoid or minimize the significant adverse impacts. Examples include:

(1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

(2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

(A) Protecting the cultural character and integrity of the resource.

(B) Protecting the traditional use of the resource.

(C) Protecting the confidentiality of the resource.

(3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

(4) Protecting the resource.

Environmental Setting

The Project Area was inhabited by Ohlone, or Costanoan populations (Levy 1978; Milliken et al.2007). When first encountered by Spanish explorers, aboriginal inhabitants of the Bay Area and vicinity were referred to as Costaños (Levy 1978). The people came to be known as Costanoans (cf. Levy 1978), although now, the descendants of those earlier inhabitants prefer to be referred to as Ohlone (Bean 1994). Both terms refer to the language group spoken by the people, rather than any sort of political group.

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following standard project requirements (SPRs), as well as any other SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR CUL-1: Tribal Consultation and Protection of Tribal Resources. Using the appropriate Santa Cruz County Native American Contact List, the RCD will notify the identified Native American representatives in writing and provide details about the project location and project activities. For any Native American representatives that do not respond to the initial letter, follow-up communication, via phone call and email, will be undertaken. The goal is to identify potential impacts to Tribal cultural resources early in the project planning phase to ensure that

impacts to these resources are avoided. Tribal cultural resources may include, but are not limited to, sites, features, landscapes, places, or objects of value to a Tribe.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*				
A. *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources Code section 5020.1(k), or*	☐	☒	☐	☐
B. *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*	☐	☒	☐	☐

Discussion: **Less than Significant**. Although program activities that involves ground disturbance could potentially impact tribal cultural resources, implementation of SPR CUL-1 through SPR CUL-10 would reduce impact to a less than significant level.

All future projects under the Program will comply with Section 21080.3.1(b) of the California Public Resources Code (AB 52) that requires a lead agency formally notify a California Native American tribe that is traditionally and culturally affiliated within the geographic area of the discretionary project when formally requested (SPR CUL-1). Furthermore, in accordance with California PRC Sections 5097 and 7050.5, if, at any time, human remains are discovered, the Santa Cruz County Coroner, RCD Project Manager, and landowner will be notified immediately and all work on the project will temporarily halt. If the Coroner determines that the remains are likely to be Native American, the Native American Heritage Commission will be notified and will appoint a Most Likely Descendent (MLD) to provide recommendations for the disposition of the remains and work will not resume until they have made a recommendation to the landowner and RCD, for means of treating and disposing of, with

appropriate dignity, the human remains and any associated grave goods, as provided in California PRC 5097.98 (SPR CUL-9).

S. Utilities and Service Systems

Regulatory Setting

FEDERAL

Clean Water Act

The CWA is the primary federal law that protects our nation's waters, including lakes, rivers, aquifers, and coastal areas. As defined by EPA, the CWA is the primary law regulating pollution of the nation's waterways and is intended to govern the restoration and maintenance of the chemical, physical, and biological integrity of the nation's water.

Section 402 of the CWA implements the NPDES, which is regulated by the EPA. The permitting program prohibits the unauthorized discharge of pollutants from a point source (e.g., pipe, ditch, well) to United States waters. The permitting program addresses municipal, commercial, and industrial wastewater discharges and discharges from large animal feeding operations. Under Section 402 of the CWA, permittees must verify compliance with permit requirements by monitoring their effluent, maintaining records, and filing periodic reports. The Program is administered at the local level by the RWQCBs. Under the NPDES program, the RWQCBs implements Waste Discharge Requirements for some discharges in addition to those subject to NPDES permits. Permits contain specific requirements that limit the pollutants in discharges. They also require dischargers to monitor their wastewater to ensure that it meets all requirements. Wastewater dischargers must maintain their treatment facilities, and treatment plant operators must be certified. The RWQCB routinely inspects treatment facilities and strictly enforce permit requirements.

STATE

Sustainable Groundwater Management Act

The SGMA became law on January 1, 2015, and applies to all groundwater basins in the state (Water Code Section 10720.3). (The SGMA is composed of three separate bills: SB 1168, SB 1319, and AB 1739. All three were signed into law by the Governor on September 16, 2014.) By enacting the SGMA, the Legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdictions (Water Code Section 10720.1). The source of water for treatments implemented under the Program may include groundwater to the extent that a community water system, including its fire hydrants, relies on groundwater. SGMA compliance would be required of the agency or entity providing the water to the Program proponent.

California Integrated Waste Management Act

The California Waste Management Act of 1989 (AB 939) requires State, County, and local governments to substantially decrease the volume of waste disposed at landfills by the year 2000 and beyond. The Act allows the CalRecycle to use per capita disposal as an indicator in evaluating compliance with the requirements of AB 939. Jurisdictions track and report their per capita disposal rates to CalRecycle. The volume of solid waste produced during treatment activities under the Program would need to comply with requirements for per capita disposal rate.

Short-Lived Climate Pollutant Strategy/Diversion of Organic Waste from Landfills

Short-Lived Climate Pollutant Strategy/Diversion of Organic Waste from Landfills (SB 1383) (Statutes of 2016) established methane emissions reduction targets in a statewide effort to reduce emission of short-lived climate pollutants. In addition, the new law codified CARB's Short-Lived Climate Pollutant Reduction Strategy, to achieve reductions in the statewide emissions of short-lived climate pollutants. As it pertains to activities under the Program, SB 1383 established CalRecycle targets to achieve a 75 percent reduction in statewide disposal of organic waste from the 2014 level by 2025, which would be enforced at a local agency level. In 2022, SB 1383 also required the construction of approximately 60 composting facilities and 26 anaerobic digestion facilities. Woody biomass qualifies as an organic waste subject to diversion to comply with SB 1383.

LOCAL

2022 Climate Action and Adaption Plan

The CAAP addresses woody biomass, focusing on reducing GHG emissions and adapting to climate change. The plan integrates mitigation (reducing emissions) and adaptation (adjusting to changes) strategies, including those related to woody biomass, therefore, is applicable to the Program. The Program is consistent with the following goals and strategies outlined in the 2022 CAAP (County of Santa Cruz 2022):

- Strategy 17 Natural/Working Lands: Enhance carbon sequestration strategies through conservation and restoration of natural habitats, sustainable farming practices, and carbon capture technologies.
- Strategy 19 Wildfire Prevention & Mitigation Strategies: Protect at-risk communities from wildfire risk through improved forest health management.
- Strategy 20 Wildfire Prevention & Mitigation Strategies: Reduce wildfire risk to structures in at-risk communities

County of Santa Cruz Stormwater management Plan

The County prepares a Stormwater Management Plan in response to the NPDES General Permit for agencies designated by the SWRCB. Under this General Permit, the agencies are mandated to implement specific types of urban runoff pollutant control measures and submit

annual reports to the Central Coast RWQCB. The County also prepared a Storm Water Resource Plan in 2017 that describes priorities for implementation of regional stormwater projects (County of Santa Cruz 2024).

Environmental Setting

SEWER, WATER, AND STORMWATER

Nearly all of Santa Cruz County's water supply is derived from local surface water (streams and reservoirs - 20% of supply) and groundwater (76% of supply). A small amount of recycled water is produced for irrigation (3.6%) and a small amount was imported from outside of the County (0.1%). In 2024, total water use in Santa Cruz County was estimated at approximately 44,845 acre-feet1/year (AFY) with non-agricultural water use accounting for approximately 53.6% of the total use (County of Santa Cruz 2024).

Domestic supply within the region is provided by five large public agencies, four medium water systems, 115 small water systems, and some 8,000 individual wells. Potable water supplies within the County's urban services line and rural services line are provided by six agencies in the County. The Program Area is located within the Santa Cruz mid-county groundwater basin and Corralito's groundwater basin and served by the PV Water and CWD. Unincorporated areas of the county not serviced by the larger water purveyors rely on private wells and stream diversions for their water supply. The County established the Drinking Water Program in Environmental Health to ensure that small water systems deliver a reliable and adequate supply of groundwater or surface water to their customers. As such, the County acts as the Local Primacy Agency for the California Water Resources Control Board Division of Drinking Water and oversees small public water systems.

In addition to groundwater wells, a small number of residences, agricultural parcels, and other development within the unincorporated regions of the county rely on beneficial water supplies through permitted surface water (stream, spring, or pond) diversions and potentially unpermitted or illegal stream diversions. It is unknown how much surface water diversions within the county account for private water supply each year. Of the 17 watersheds in County, most surface water supplies for municipal or beneficial use are diverted from the San Lorenzo River Watershed, North Coast streams (i.e., Waddell Creek, Scott Creek, San Vincent Creek, and Laguna Creek), and Corralitos Creek.

Surface water supplies, which are the primary source of supply for the northern third of the County, are inadequate during drought periods and will be further diminished as a result of the need to increase stream baseflows to restore habitat for endangered salmonid populations. In addition to overdraft, the use of water resources is further constrained by various water quality issues.

Sewer and water services are provided by over 12 different districts and agencies. The Sanitation Section of the Santa Cruz County Community Development & Infrastructure

Department is responsible for the collection of wastewaters (sewage) and oversees administration and staffing of several of those sanitation districts and county service areas.

ELECTRIC POWER AND TELECOMMUNICATIONS

Electrical service is provided in the County by Central Coast Community Energy using infrastructure provided by Pacific Gas and Electric Company (PG&E). Telecommunications, including landline telephone, cellular telephone, cable, and Internet services are provided by a variety of providers, including AT&T, Verizon, Cruzio, DISH, Spectrum, Comcast, Xfinity, among smaller companies.

SOLID WASTE

The County Community Development & Infrastructure Department sponsors a wide range of recycling and waste reduction programs that have resulted in significant diversion of waste from landfill disposal. In addition, the County owns and operates solid waste facilities and conducts recycling, reuse, and waste diversion operations at those facilities. The combination of various programs and facility operations has resulted in the County (unincorporated area) achieving approximately 58% waste diversion. The cities of Santa Cruz, Capitola and Watsonville are achieving diversion levels of 52%, 51% and 72% respectively, based on the 2002 Santa Cruz Local Agency Formation Commission (LAFCO) report.

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following SPRs, as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR EC-1 Limit Timeframe and Implement Erosion Control: All treatment activities will be completed prior to October 15. Work beyond October 15 will be specifically authorized in advance by the County of Santa Cruz and other permitting agencies. All erosion control will meet specifications in County of Santa Cruz Erosion Control Ordinance Chapter 16.22. An Erosion Control Plan will be provided to the Contractor, as needed. See Attachment A for detailed description of this SPR.

SPR EC-2 Protect Disturbed Areas: All soil exposed as a result of project activities will be stabilized with straw mulch, through broadcast seeding, live planting, hydroseeding, by scattering native slash, lopped vegetation, wood chips or otherwise protected to match pre-construction conditions or better. See Attachment A for detailed description of this SPR.

SPR EC-3 Restore Soil Surface Conditions: Berms, ruts and other operator-caused ground disturbance (over 12 inches) in height/depth will be smoothed out to original contours before leaving the immediate work area.

SPR EC-4 Install Erosion Control Devices: Erosion control and sediment detention devices will be incorporated into the project design and implemented at the time of project implementation. See Attachment A for detailed description of this SPR.

SPR EC-5 Water break Installation: Where appropriate, waterbars (waterbreaks) can be used to address concerns about bare soils and soil erosion. See Attachment A for detailed description of this SPR.

SPR EC-6 Complete Grading Activities During Dry Period: All treatment activities will not be conducted during rain events or on any day for which the National Weather Service has predicted a 25% or more chance of at least 0.1 inch of rain in 24 hours (Predicted Rain Event). See Attachment A for detailed description of this SPR.

SPR EC-7 Soil Saturation: The operation of heavy equipment for tree removal and skidding, and truck traffic will not occur when soils become saturated (from rain event). Saturated soil means that soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur. See Attachment A for detailed description of this SPR.

SPR EC-8 Review Erosion Control Measures at Project Site: The RCD will oversee project implementation to confirm all planned erosion control measures are in place immediately following completion of treatment activities or prior to forecasted rain events. See Attachment A for detailed description of this SPR.

SPR HAZ-6 Properly Dispose of Spent Fluid and Debris: All spent fluids (including motor oil, radiator coolant, and/or other fluids) and used vehicle batteries will be collected, stored, and recycled as hazardous waste off site. All construction debris and sediments (if sediments are not incorporated on site) will be properly disposed. Plans will indicate the approved disposal site.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*	☐	☐	☒	☐

***Discussion*:**

Water

Less than Significant. Implementation of Program activities would require on-site water supplies for fire suppression during pile burning activities, for dust control during vegetation removal, and for irrigation during restoration and revegetation. Depending on the project site, the project would connect to existing municipal water supply or an existing individual well for water supply.

PV Water has determined that adequate supplies are available to serve the Program, and no new facilities are required to serve the Program. In areas where program activities are supported by water supply from private wells, public water facilities would not have to be expanded.

Water needed to implement these activities would be minimal. Also, Program activities would occur over a large geographic area which would disperse pressure on local water providers. Therefore, the increase in demand for water attributable to implementation of the Program would be negligible and would not discernably affect the availability of water supply. This impact would be less than significant, and no mitigation is required.

Wastewater

No Impact. Program activities do not require sanitary sewer connections or access to a septic tank. Depending on the location and duration of vegetation treatment activity, portable restrooms are provided. When provided, waste from onsite portable restrooms is transported offsite for disposal. No new wastewater facilities are required to serve the project. No impact would occur from project implementation.

Stormwater

Less than Significant. Implementation of the SPR EC-1 through 8 related to erosion control would ensure the proposed Program would not generate increased runoff; therefore, it would not result in the need for new or expanded drainage facilities. No impact would occur.

Electric Power

No Impact. PG&E provides power to existing and new developments in the Santa Cruz County area. As of 2018, residents and businesses in the County were automatically enrolled in Monterey Bay Community Power's community choice energy program, which provides locally controlled, carbon-free electricity delivered on PGE's existing lines.

The Program Area is already served by electric power, and no further improvements to serve the site are necessary; therefore, there will be no impact.

Natural Gas

No Impact. PG&E serves the urbanized portions of Santa Cruz County with natural gas. The Program Area is already served with natural gas, and no further improvements to serve the site are necessary; therefore, there will be no impact.

Telecommunications

No Impact. Telecommunications, including telephone, wireless telephone, internet, and cable, are provided by a variety of organizations. AT&T is the major telephone provider, and its subsidiary, DirectTV provides television and internet services. Cable television services in Santa Cruz County are provided by Charter Communications in Watsonville and Comcast in other areas of the county. Wireless services are also provided by AT&T, as well as other service providers, such as Verizon. No improvements related to telecommunications are required, and there will be no impact.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*	☐	☐	☒	☐

***Discussion*:**

Less than Significant. Implementation of Program activities would require on-site water for several purposes, including fire suppression during pile burning, dust control during vegetation removal, and irrigation during restoration and revegetation. Depending on the specific project site, water would be sourced from either an existing municipal water supply or an existing individual well.

The amount of water required for these activities would be minimal, particularly for dust control, which involves only small quantities. Furthermore, because Program activities would be distributed across a broad geographic area, any demand on local water providers would be dispersed, reducing localized pressure on supply systems.

Given the limited and temporary nature of water use, and the availability of existing water sources, sufficient water supplies would be available to support Program implementation as well as reasonably foreseeable future development under normal, dry, and multiple dry-year conditions. As such, impacts related to water supply would be less than significant, and no mitigation is required.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. *Would the project result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*	☐	☐	☐	☒

Discussion: **No Impact**. No wastewater would be connected to the municipal sewer collection system for the implementation of the Program. Therefore, no impacts would occur.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. *Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*	☐	☐	☒	☐

Discussion: **Less than Significant**. Biomass generated from vegetation removal activities may be processed on-site using a chipper if pile burning or other biomass management methods are not utilized. As vegetation regrows and follow-up maintenance occurs in subsequent years, additional vegetative material would be chipped and transported off-site. Chipped materials could be delivered to the City of Santa Cruz Resource Recovery Facility, Buena Vista Landfill, Ben Lomond Transfer Station, or another appropriate processing facility.

The Buena Vista Landfill currently accepts approximately 350 tons of refuse per day, with an additional 100 tons from the Ben Lomond Transfer Station, and has the capacity to accommodate the chipped biomass generated by the Program. The amount of waste generated would not exceed local or state disposal capacity standards, nor would it necessitate the development of new landfill or recycling facilities.

Additionally, the Program will implement SPR HAZ-6, which ensures that all debris and waste generated during implementation are properly disposed of at a designated disposal site. Therefore, impacts related to solid waste would be less than significant, and no mitigation is required.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
5. *Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*	☐	☐	☐	☒

Discussion: **No Impact**. The project would comply with all federal, state, and local statutes and regulations related to solid waste disposal. No impact would occur.

Cumulative impacts: The cumulative utilities impacts of the program are expected to be negligible.

T. Wildfire

Regulatory Setting

FEDERAL

Federal Wildland Fire Management Policy

The Federal Wildland Fire Management Policy was developed in 1995 and updated in 2001 by the National Wildfire Coordinating Group, a federal multi-agency group that establishes consistent and coordinated fire management policy across multiple federal jurisdictions. An important component of the Federal Wildland Fire Management Policy is the acknowledgment of the essential role of fire in maintaining natural ecosystems.

National Fire Plan

The National Fire Plan was a Presidential directive in 2000 as a response to severe wildfires that had burned throughout the United States. The National Fire Plan focuses on reducing fire impacts on rural communities and assurance for sufficient firefighting capacity in the future. It is a long-term investment that will help protect natural resources in addition to communities, as well as a long-term commitment based on cooperation and communication among federal agencies, states, local governments, tribes, and interested members of the public.

STATE

Board of Forestry and Fire Protection

The Board is a Governor-appointed body within CAL FIRE. It is responsible for developing the general forest policy of the state, determining the guidance policies of CAL FIRE, and representing the state's interest in federal forestland in California. Together, the Board and CAL FIRE work to carry out the California Legislature's mandate to protect and enhance the state's unique forest and wildland resources.

The Board is responsible for identifying VHFHSZ (very high fire hazard severity zones) in the State Responsibility Area (SRA) and LRA. Local agencies are required to designate, by ordinance, VHFHSZ and to require landowners to reduce fire hazards adjacent to occupied

buildings within these zones (Government Code Sections 51179 and 51182). The intent of identifying areas with very high fire hazards is to allow CAL FIRE and local agencies to develop and implement measures that would reduce the loss of life and property from uncontrolled wildfires (Government Code Section 51176). Fire hazard severity zones throughout the SRA are depicted in Figure 12. PRC Sections 4114 and 4130 authorize the Board to establish a fire plan, which, among other things, determines the levels of statewide fire protection services for SRA lands. The primary goals of the 2018 Strategic Fire Plan for California (CAL FIRE 2018) include both suppression efforts and fire prevention efforts. Government Code Section 65302.5 gives the Board the regulatory authority to evaluate GP/LCP Safety Elements for their land use policies in the SRA and VHFHSZs, as well as methods and strategies for wildland fire risk reduction and prevention in those areas, which includes projects potentially covered by this PIS.

CAL FIRE

CAL FIRE is the California Department of Forestry and Fire Protection. It is dedicated to the fire protection and stewardship of over 31 million acres of the state's privately-owned wildlands. In addition, CAL FIRE provides emergency services in 36 of the state's 58 counties via contracts with local governments. PRC Section 4291 gives CAL FIRE the authority to enforce 100 feet of defensible space around all buildings and structures on non-federal SRA lands, or non-federal forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material. PRC Sections 4790 through 4799.04 provide the regulatory authority for CAL FIRE to administer the California Forest Improvement Program. PRC 4113 and 4125 give CAL FIRE the responsibility for preventing and extinguishing wildland fires in the SRA (PRC Sections 4113 and 4125). The PRC, beginning with Section 4427, includes fire safety statutes that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment with internal combustion engines; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on site for various types of work in fire-prone areas. These requirements would apply to Program activities.

CAL FIRE currently implements vegetation treatments under PRC Sections 4475 through 4495. PRC Sections 4461 through 4471 and 4491 through 4494 authorize CAL FIRE to implement its existing Chaparral Management Program, now known, in part, as the Vegetation Management Program. In addition, with the 2005 passage of SB 1084, the Legislature modified, and in some cases, added language to PRC Sections 4475 through 4480 that broadened CAL FIRE's range of vegetation treatment practices beyond those described for the existing Chaparral Management Program and Vegetation Management Program, added a definition of "hazardous fuel reduction," and made other changes to the major statutory provisions guiding CAL FIRE's vegetation treatment authorities.

In addition to the 2018 Strategic Fire Plan for California, individual CAL FIRE Units develop Fire Plans, which are major strategic documents that establish a set of tools for each CAL FIRE

Unit to achieve in its local area. Updated yearly, Unit Fire Plans identify wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their Units' geographical boundaries. The Unit Fire Plan identifies strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work locally. The plans include contributions from local collaborators and stakeholders and are aligned with other plans for the area, such as Community Wildfire Protection Plans.

Executive Order B-52-18

On May 10, 2018, in response to the changing environmental conditions and the increased risk to California's citizens, California Governor Brown issued Executive Order (EO) B-52-18 to support the state's resilience to wildfire and other climate impacts, to address extensive tree mortality, increase forests' capacity for carbon capture, and to improve forest and forest fire management. The Executive Order requires the CNRA, in coordination with the Board, CAL FIRE, and other agencies, to increase the pace and scale of fire fuel treatments on state and private lands. EO B-52-18 commits $96 million in additional state funds to for these efforts and calls for doubling the land actively managed through vegetation thinning, prescribed burning, and restoration from 250,000 to 500,000 acres per year to reduce wildfire risk.

Senate Bill 1260

On February 15, 2018, Governor Brown signed SB 1260, which aims to help protect California communities from catastrophic wildfire by improving forest management practices to reduce the risk of wildfires in light of the changing climate. It recognizes that prescribed burning is an important tool to help mitigate and prevent the impacts of the wildfire and includes provisions that encourage more frequent use of prescribed fire in managing California's forest lands. SB 1260 also includes provisions for this PIS to serve as the programmatic CEQA coverage for future prescribed burns within the SRA.

Senate Bill 901

Senate Bill 901 boosts government fire protection efforts by $1 billion over the next five years. CAL FIRE will oversee those funds, generally divided into two categories: $165 million per year for fire prevention grants to landowners and for community prevention efforts, and $35 million to continue CAL FIRE's prescribed burning, research, and monitoring. Landowners will have new permission to help reduce overgrowth by cutting down small and mid-sized trees.

LOCAL

Santa Cruz County GP/LCP

The Public Safety Element of the GP/LCP outlines policies and regulations related to mitigating wildfire risk to existing and new development. It is applicable to the Program because eucalyptus tree removal would help mitigate fire risk in and adjacent to the Program Area.

Environmental Setting

Fire protection in California is the responsibility of the federal, state, or local government. Fire protection in LRAs is provided by the County, a city, or a designated fire protection district. Within SRAs, fire protection is provided by CAL FIRE. In FRAs, fire protection is the responsibility of the federal government. Figure 12 shows the FRA, SRA, and LRA within Santa Cruz County. Most of the unincorporated area of the county is within the SRA, while the LRA includes the county's incorporated cities, as well as some unincorporated areas concentrated near the coast and surrounding the City of Watsonville.

As shown in Figure 12, the Program Area contains areas designated as critical fire hazard area (C), which is defined as a high wildfire hazard area composed of chaparral vegetative cover, and area designated as mitigable critical fire hazard areas (M), which fit into the following categories: (a)Critical Fire Hazard Area within the area bordered by the following access roads: From Day Valley Road to Freedom Blvd., to Hames Road, To Browns Valley Road to Hazel Dell Road , To Gaffey Road, down Highway 152 to Carlton Road, Carlton Road to Highway 129 and ending at Murphy road. (b)Critical Frie Hazard Areas with mitigation based on the following criteria: (1) extent of the critical fire vegetation: (2) distance to adjacent fire hazard areas; (3) accessibility for firefighting equipment; (4) air moisture content; (5) historic record of wildland fires; (6) slope and terrain (County GIS 2022b).

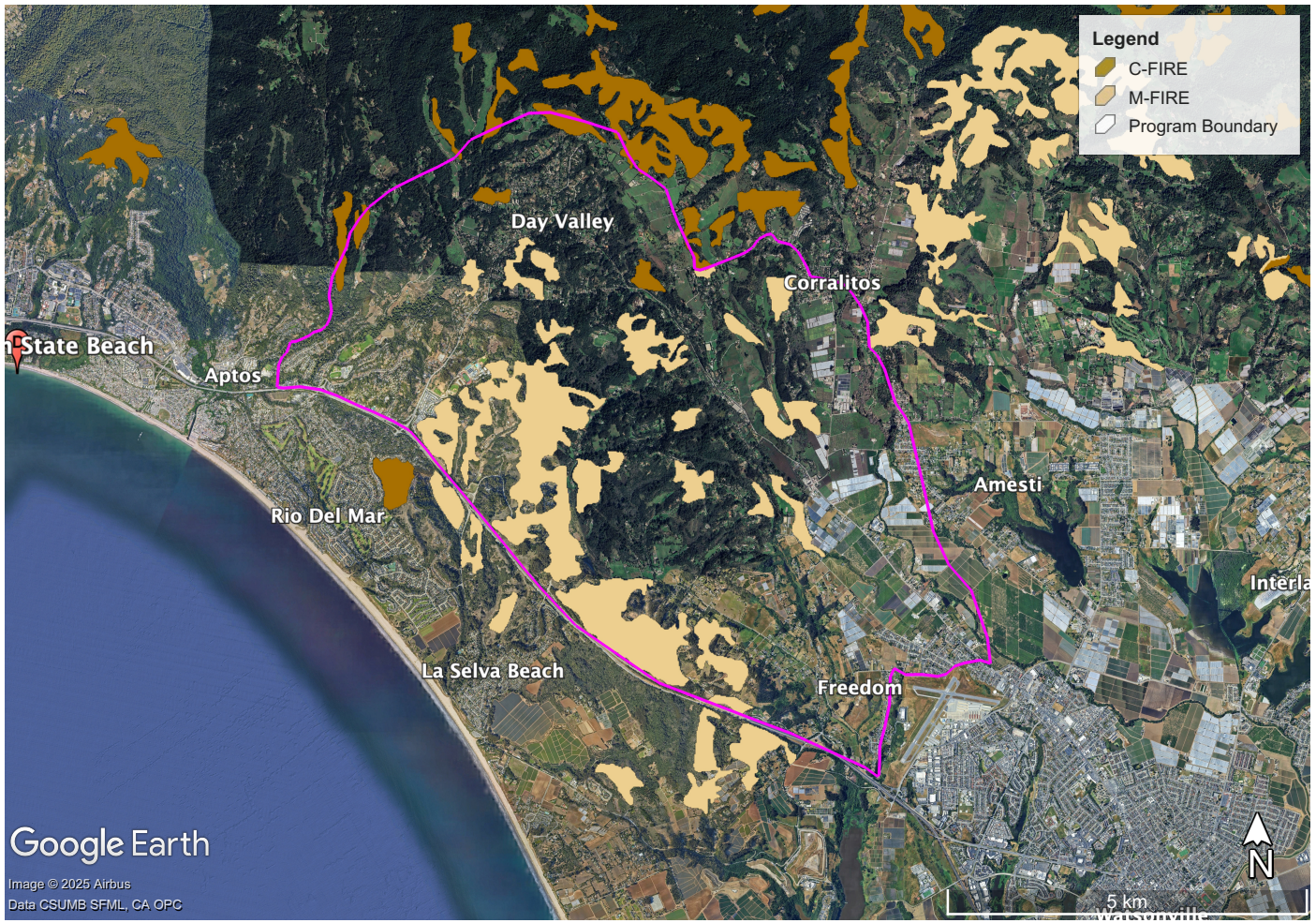


Figure 12 Fire Hazard Areas in the Program Area

Methodology

In determining the level of significance, the analysis assumes that the program and any projects within its scope would implement the following standard project requirements (SPRs), as well as any other applicable SPRs listed elsewhere in this document, developed for the program. It also assumes that the program would comply with relevant federal and state laws, regulations, and ordinances.

SPR FP-1 Maintain Fire Suppression Equipment On-Site

SPR FP-2 Immediate Fire Suppression Station (IFSS): A five-gallon backpack pump, Mcleod hand tool, and shovel will be strategically staged within 250 feet of any mastication or chipping operations for ground crew or spotters to immediately extinguish any ignition.

SPR FP-3 Restrict Location of Flammable Materials: Flammable materials will be kept at least 10 feet away from any equipment that could produce a spark, fire, or flame. Portable tools powered by gasoline-fueled internal combustion engines will not be used within 25 feet of any flammable materials unless at least one round-point shovel or fire extinguisher is within immediate reach of the work crew (no more than 25 feet away from the work area).

SPR FP-4 Identify Potential Ignition Hazards: Treatment areas will be walked prior to operations to determine if there are any potential ignition hazards such as rocks, metal objects, or fuel sources that could act as possible ignition points. The Contractor should adjust operational schedules to operate in these areas when fire hazard risks are the lowest, such as early morning.

SPR FP-5 Identify Potential Ignition Hazards: Work areas will be walked at the end of each day to conduct a fire check unless conditions are too wet for an ignition to occur. During times when vegetation is flammable, a minimum of 2-hour fire watches each day following conclusion of mechanized operations. Fire watch may include time spent conducting routine end-of-day equipment maintenance.

SPR FP-6 Avoid Metal Equipment: Avoid metal string or blade weed trimmers.

SPR FP-7 Foam Fire Suppression System: Heavy equipment conducting mastication will have a foam fire suppression system built in.

SPR FP-8 Minimize Burn Pile Size: The project proponent will not create burn piles that exceed 20 feet in length, width, or diameter, except when on landings, road surfaces, or on contour to minimize the spatial extent of soil damage. Piles should be constructed with 10 feet of clearance around them. The project proponent will not locate burn piles in a Watercourse and Lake Protection Zone as defined in 14 CCR Section 916.5 of the California Forest Practice Rules. This SPR applies to mechanical, manual, and prescribed burning treatment activities and all treatment types.

SPR FP-9 Allowable Pile Burn Wind Speeds: Pile burning will only be allowed on days when fire is less likely to spread (e.g., wind speeds are less than 15 mph).

SPR FP-10 Allowable Pile Burn Slopes: Piles will only be constructed in areas where burning can be safely controlled, for example, on the flattest area possible. Bottoms of steep, vegetated hills will be avoided.

SPR FP-11 Allowable Pile Burn Locations: Piles will be set back from public roads and trails at a distance to minimize risk to the public or cordoned off from the public.

SPR FP-12 Compliance with CalFire, Fire Departments, and MBARD: All requirements of CAL FIRE, the local fire department, and/or the MBARD will be met, including any permit, notification, burn bans, and reporting requirements. Have fire suppression crews on-site during the fire season determined by CAL FIRE or the local fire department (typically mid-May to mid-November) during curtain and pile burns. Pile burning will adhere to MBARD criteria pollutant thresholds and Regulation 5 for open burning.

SPR TRFFC-3 Submit Traffic Control Plan: The Contractor is responsible for assessing treatment areas to determine where traffic control may be needed. The Contractor will provide the RCDSCC with a traffic control plan to be approved by the County of Santa Cruz Public Works Department.

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
1. *Substantially impair an adopted emergency response plan or emergency evacuation plan?*	☐	☐	☒	☐

Discussion:

Less than Significant. The Program Area is within the State Responsibility Area (SRA) in a high to very high fire hazard severity zone (CAL FIRE 2023). The Program Area also contains critical fire hazard areas mapped by the County. The purpose of the Program is to remove non-native eucalyptus that produces highly flammable litter, which would reduce the spread and intensity of a wildfire, should one occur and to revegetate the area with ignition resistant vegetation. Fuel reduction crews would maintain fire suppression equipment (e.g., Pulaski axe, shovel, fire extinguisher) in work vehicles during activities that can generate sparks or heat (SPR FP-2 and FP-7). In the event, that project implementation necessitates road closure to protect public safety, the County will work with local agencies, as applicable, to submit a traffic control plan and ensure consistency with adopted emergency response plan or emergency evacuation plan (SPR TRRFC-3). As such, impact to an adopted emergency response plan or evacuation plan would be less than significant, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*	☐	☐	☒	☐

Discussion: **Less than Significant**. Vegetation treatment activities under the Program could result in temporary risks associated with uncontrolled fire from prescribed burning, as well as from the use of vehicles and heavy machinery in the treatable landscape as each can increase the risk of an accidental wildfire ignition. However, several SPRs would be implemented to reduce the risk of uncontrolled spread of fire from treatment activities. Machine-powered hand tools would have federal- or state-approved spark arrestors; A five-gallon backpack pump, Mcleod hand tool, and shovel will be strategically staged within 250 feet of any mastication or chipping operations for ground crew or spotters to immediately extinguish any ignition (SPR FP-2); and treatment areas will be walked prior to operations to determine if there are any potential ignition hazards such as rocks, metal objects, or fuel sources that could act as possible ignition points. (SPR FP-4 and FP-5). In addition, given the extensive preparation and planning prior to a prescribed burn (e.g., preparation of a smoke management plan) as outlines in SPR BIOM-2, active monitoring and maintenance during a prescribed burn, and implementation of stringent safety protocols, prescription burning would not substantially exacerbate fire risk that could result in the uncontrolled spread of wildfire.

The project design incorporates all applicable fire safety code requirements and includes fire protection devices as required by the local fire agency. Projects under the Program will be required to meet the GP/LCP policies related to fire resilience and access in the Santa Cruz County GP/LCP, and standards for defensible spaces in the PRC and SCCC (SPR FP-12). Furthermore, one of the main objectives of the proposed Program is to remove eucalyptus trees that produce flammable litter, thereby reduce frequency and severity of future uncontrolled wildfire. This impact would be less than significant.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒

Discussion: No Impact. The Program does not propose the installation of any infrastructure. Therefore, the Program would not require the installation or maintenance of infrastructure that may exacerbate wildfire risk. No impact would occur.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Discussion: Less than Significant. The proposed Program does not include new housing, nor would it result in substantial unplanned population growth such that structures or people are put at risk. Broadcast burning implemented under the proposed Program are typically of low severity and retains substantial vegetation after burn, thereby maintaining stability of the soil. In addition, Standard Project Requirements (SPRs) EC-1 through EC-8 would be implemented, where applicable, to stabilize soils disturbed by vegetation treatment activities and minimize erosion. These measures include protecting and restoring disturbed soils following treatment (SPR EC-2 and EC-3), implementing appropriate erosion control techniques and devices (SPR EC-1 and EC-4), and avoiding project implementation during periods when soils are most vulnerable to erosion, such as during or immediately after heavy rainfall (SPR EC-1 and EC-7). Furthermore, one of the Program's primary objectives is to reduce the frequency and severity of wildfires. By achieving this, the Program is also expected to reduce the potential for post-wildfire hazards, such as erosion, debris flows, landslides, and flooding. With the implementation of SPRs, the Program would not expose people or structures to significant risks related to post-treatment landslides or flooding. Impacts related to geologic or flooding hazards following vegetation treatment activities would be less than significant, and no mitigation is required.

Cumulative impacts: The cumulative wildfire impacts of the program are expected to be negligible or positive.

U. Mandatory Findings of Significance

Impact Discussion

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal community or eliminate important examples of the major periods of California history or prehistory?*	☐	☒	☐	☐

Discussion:

Less than Significant with Mitigation. The potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory were considered in the response to each question in Section III (A through T) of this Initial Study. Resources that have been evaluated as significant would be potentially impacted by the project, particularly related to noise and biological resources. However, mitigation has been included that clearly reduces these effects to a level below significance. Mitigation related to noise includes:

MM NOI-1 Limit construction activity to between the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday, 9:00 a.m. to 5:00 p.m. Saturday in order to avoid noise during more sensitive nighttime hours. Prohibit construction activity on Sundays.

MM NOI-2 Require that all construction and maintenance equipment powered by gasoline or diesel engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.

MM NOI-3 Prohibit gasoline or diesel engines from having unmuffled exhaust.

MM NOI-4 Use noise-reducing enclosures around stationary noise-generating equipment capable of 6 dB attenuation.

Mitigation measures related to biological resources include:

MM BIO-1 Implement Applicable Species Specific Mitigation Measures (MM BIO1.A through MM BIO-1.K in Attachment A).

MM BIO-2 Sensitive Upland Habitats Protective Measures.

MM BIO-3 Sensitive Aquatic Habitat Protective Measures.

MM BIO-4 Wildlife Movement Protective Measures.

As a result of this evaluation, there is no substantial evidence that, after mitigation, significant effects associated with this project would result. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Does the project have impacts that are individually limited, but cumulatively considerable? ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*	☐	☒	☐	☐

***Discussion*:**

Less than Significant with Mitigation. In addition to project specific impacts, this evaluation considered the project's potential for incremental effects that are cumulatively considerable. As a result of this evaluation, there were determined to be potentially significant cumulative effects related to biological resources. However, mitigation has been included that clearly reduces these cumulative effects to a level below significance. This mitigation includes measures to reduce these impacts to a less than significant level. As a result of this evaluation, there is no substantial evidence that there are cumulative effects associated with this project. In addition, the Program would result in a net positive impact to environmental resources particularly biological resources, hydrology and water quality, and wildfire. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

California Environmental Quality Act (CEQA) Initial Study/Environmental Checklist	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

***Discussion*:**

Less than Significant. In the evaluation of environmental impacts in this Initial Study, the potential for adverse direct or indirect impacts to human beings were considered in the response to specific questions in Section III (A through T). As a result of this evaluation, no potentially adverse effects to human beings associated with this project were identified. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

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Attachment A

Standard Project Requirements and Mitigation Measures

Attachment A: Standard Project Requirements and Mitigation Measures

Standard Project Requirements

General Construction Protection Measures		**Description**
SPR GENPS-1	Pre-Construction Meeting	Prior to beginning operations, RCDSCC, and/or their supervised designee will conduct a pre-operational meeting to discuss project implementation, special protection measures and any potential operational constraints regarding the conduct of this contract that may impact project completion; including, but not limited to, planned start date, special protection measures, operational constraints, operating schedule, and order of project completion.
SPR GENPS-2	Project Oversight	A pre-designated Contractor foreman will be required to be on site at all times while the crew is working. The foreman must be able to address concerns from RCDSCC, their supervised designees, landowners, or adjacent landowners.
SPR GENPS-3	Receipt and Copies of All Permits and Authorizations	Work will not begin until all necessary permits and authorizations have been issued (e.g., USACE, USFWS, NMFS, State and/or Regional Boards, or CDFW). The Project Proponent will ensure that a readily available copy of the applicable agency permits and authorizations (e.g., USFWS PBO, NMFS PBO, or Section 404 permit) is maintained.
Air Quality - Dust Control Measures		**Description**
SPR AQ-1	Compliance with Monterey Bay Air Resources District (MBARD)	The Program will comply with all applicable Monterey Bay Air Resources District (MBARD) regulations as well as permit conditions set forth in the burn permit and smoke management plan to be submitted and approved by MBARD.
SPR AQ-2	Water Active Treatment Areas in Dry or Windy Conditions	All active construction areas will be watered, as necessary and indicated by soil and air conditions.

SPR AQ-3	Sweep Paved Roads	All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers, or other appropriate methods. at least once per day. The use of dry power sweeping is prohibited.
SPR AQ-4	Cover or Stabilize Disturbed or Inactive Areas	All disturbed areas, including staging areas and temporary access roads, which are not being actively utilized for project implementation purposes, will be effectively stabilized for dust emissions using water, chemical stabilizer/suppressant, covered with a tarp/ visqueen or other suitable protection measures.
SPR AQ-5	Restrict Work During High Winds	Prohibit all grading activities during periods of high wind (over 15 mph).
AQ-6	Limit Driving Speeds	All vehicle speeds on unpaved roads will be limited to 15 mph.
Least Environmentally Damaging Alternative		**Description**
SPR LEDA-1	Minimize Project Footprint	Where there are various possible points of access, approaches/designs, etc., use of the least environmentally damaging alternative will be required (e.g., removing the least amount of vegetation possible, placing the least amount fill possible, etc.) unless there are extenuating circumstances as approved by the County.
SPR LEDA-2	Avoid Sensitive Habitats and Species	Areas of disturbance will be limited to the smallest footprint necessary and a single access pathway, where feasible. Whenever possible, activities will be located to fully avoid negative resource impacts, including impacts on potential habitats of sensitive species identified during site evaluations or discovered subsequently. In some cases, short-term disturbance to potential habitat may be necessary to prevent further degradation of the site and to improve habitat for the species of concern. Staging, access, and parking areas will be located outside of sensitive habitats to the greatest extent feasible. The designated work area will be clearly identified in the field using highly visible material, and work will not be conducted outside this area.
SPR LEDA-3	Protect Mature Trees	No mature, native, healthy trees will be removed from the project area.
SPR LEDA-4	Protect Water Quality	All debris, including sawdust, chips, or other vegetative material, will be prevented from entering the bed, channel, or bank of a waterway, unless authorized by the appropriate regulatory agencies, ie. CDFW.

SPR LEDA-5	Minimize Ground Disturbance and Vegetation Removal in Sensitive Habitats	In environmentally sensitive habitat areas, alternatives that minimize ground disturbance and/or native vegetation removal will be selected. When removing vegetation, focus first on removing invasive and highly flammable species, and dead or diseased vegetation. Retain beneficial, low-fire risk native plant species whenever possible.
SPR LEDA-6	Follow Conditions in State and Federal Agreements/Permits	In situations where ground disturbance and/or vegetation removal in such areas cannot be avoided, all conditions specified in the agreements/permits of the participating State and/or Federal resource agencies will be followed to minimize negative impacts to State and/or federally listed animals and plants and their habitats during implementation of the conservation practices.
Limitations on Equipment		**Description**
SPR CE-1	Use Existing Ingress or Egress Points	When possible, existing ingress or egress points will be used to access project areas. Temporary access routes will be flagged. ESA fencing will be used, when necessary, to limit unintended impacts and disturbance outside of designated areas.
SPR CE-2	Avoid Heavy Equipment Use in Waters of the State and Waters of the US.	Use of heavy equipment will be avoided in Waters of the US and Waters of the State. If access to the work site requires heavy equipment to cross Waters of the US and/or State, rubber tire loader/backhoe is the preferred vehicle. Only if this option has been determined infeasible will the use of tracked vehicles be allowed. Most work will be performed from the top of the creek banks. The amount of time this equipment is stationed, working, or traveling within the creek bed will be minimized. In fish-bearing streams or their tributaries, if it is necessary to repeatedly cross the stream (i.e., more than once prior to and once following completion of construction activities) with heavy equipment to access a work site, a temporary culvert crossing with clean gravel backfill, or other appropriate temporary crossing structure will be installed and utilized.
SPR CE-3	Stage Equipment Away from Wetlands	No staging will occur in or directly adjacent to wetlands. Heavy equipment will not be allowed to operate in wetlands. If it is not feasible to completely avoid movement of construction vehicles through wetlands, whenever possible rubber-tired vehicles will be used or a protective mat will be laid down prior to moving across these areas.

SPR CE-4	Utilize Rubber Tired Vehicles in Wetlands	If it is not feasible to completely avoid movement of construction vehicles through wetlands, whenever possible rubber-tired vehicles will be used or a protective mat will be laid down prior to moving across these areas.
SPR CE-5	Minimization of Noise Disruption to Nearby Neighbors and Sensitive Receptors	All projects will comply with applicable local noise ordinances. All powered equipment and power tools will be used and maintained according to manufacturer specifications. All diesel- and gasoline-powered treatment equipment will be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations.
SPR CE-6	Measures to minimize Noise Disruption	Noise control technologies will be used on equipment (e.g., mufflers, ducts, and acoustically attenuating shields) when feasible. Equipment will be turned off when not in use. Equipment will not be idled unnecessarily. Require that all construction and maintenance equipment powered by gasoline or diesel engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation. Prohibit gasoline or diesel engines from having unmuffled exhaust. Use noise-reducing enclosures around stationary noise-generating equipment capable of 6 dB attenuation.
SPR CE-7	Operating Hours	Construction activity will be limited to between the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday, 9:00 a.m. to 5:00 p.m. Saturday in order to avoid noise during more sensitive nighttime hours. Construction activity is prohibited on Sundays.
SPR CE-8	Road Protection	Heavy equipment with rubber tracks or excavators with street pads may operate on paved or chip-sealed surfaces. The Contractor will be responsible for damage to surfaced roads resulting from heavy equipment use.
SPR CE-9	Register All Portable Chippers	Portable chippers rated at 50 HP or greater will be registered either with the Monterey Bay Air Resources District (MBARD) or through the statewide Portable Equipment Registration Program (PERP).
SPR CE-10	Idling Times	Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]).
Limitations on Herbicide Use		**Description**

SPR HL-1	Use of Soil Amendments	Except as noted below, no pesticides or soil amendments will be used in the streambed or bank to hasten or improve the growth of plantings. Soil amendments will only be used when the establishment of new plants is prohibited by poor soil conditions that cannot support new plantings. In most circumstances, organic amendments will be used to ensure successful establishment of restoration vegetation associated with the practices. In situations where organic amendments will not guarantee adequate establishment of restoration vegetation, application rates for non-organic soil amendments will be based on soil nutrient testing and will utilize slow release or split applications to minimize leaching or runoff into water bodies. Use of soil amendments within 10 ft of a waterbody must be authorized in advance by other regulatory agencies, such as CDFW.
SPR HL-2	Use of Herbicides	Chemical control of invasive plants and animals will only be used when other methods are determined to be ineffective or would create greater environmental impacts than chemical control**.** Herbicide use will be evaluated on a project-by-project basis, with consideration of (and preference given toward) IPM strategies wherever possible. Projects will comply with all herbicide application regulations and ecologically sound integrated pest management principles
SPR HL-3	Use Herbicide According to Registered Label Conditions	Where it is necessary to use herbicides to control established stands of non-native plants or to control the invasion of non-native plants into restoration plantings, the herbicides must be applied according to registered label conditions.
SPR HL-4	Application by Licensed Applicator	The licensed Applicator will follow recommendations for all California restrictions, including wind speed, rainfall, temperature inversion, and ground moisture for each herbicide used. The licensed applicator will keep a record of all plants/areas treated; amounts and types of herbicides used; and dates of application as well as other monitoring elements prescribed by the PCA in VHDR-7; pesticide application reports must be completed within 24 hours of application and submitted to the applicable agencies for review. Wind and other weather data will be monitored and reported for all application reports.
SPR HL-5	Prohibit Leaching into Waterways	Herbicides must be applied directly to plants and may not be spread upon any water or where they can leach into waterways in subsequent rains.
SPR HL-6	Use of Herbicide Adjuvants	Herbicide adjuvants are limited to water or nontoxic or practically nontoxic vegetable oils and agriculturally registered, food grade colorants (e.g., Dynamark U.V. [red or blue],

		Aquamark blue, or Hi-Light blue) to be used to detect drift or other unintended exposure to waterways.
SPR HL-7	Utilize Aquatic-approved Herbicides Near Waterways	When herbicides are used to control non-native species near waterways, only herbicides labeled for use in aquatic environments will be used when working in riparian habitats or other areas where there is a possibility the herbicide could come into direct contact with water. Only hand application of herbicides will be allowed in riparian habitats and only during low-flow periods or when seasonal streams are dry.
SPR HL-8	Comply with Herbicide Application Regulations.	Projects will comply with all herbicide application regulations and ecologically sound integrated pest management principles.
SPR HL-9	Limit the Potential for Herbicide Drift	Herbicide drift to public areas or sensitive areas will be minimized through the following measures: • Application will cease when weather parameters exceed label specifications or when sustained winds at the site of application exceeds 7 miles per hour (whichever is more conservative). • No herbicide will be applied during precipitation events or if precipitation is forecast 24 hours before or after project activities. • Spray nozzles will be configured to produce the largest appropriate droplet size to minimize drift. • Low nozzle pressures will be utilized. • Spray nozzles will be kept within 24 inches of vegetation, if spraying.
SPR HL-10	Notice of Herbicide Application	When herbicide is applied adjacent to public recreation areas, residential areas, schools, or any other public areas within 500 feet, signs will be posted at each end of herbicide application areas and any intersecting trails notifying the public of the use of herbicides at a minimum 1 day before and 1 day after herbicide use.
SPR HL-11	Mixing of Herbicides	Herbicide mixing sites will be located in areas devoid of vegetation and where there is no potential of a spill reaching non-target vegetation or a waterway.
Prescribed Fire and Fire Prevention		**Description**

SPR FP-2	Immediate Fire Suppression Station (IFSS)	A five-gallon backpack pump, Mcleod hand tool, and shovel will be strategically staged within 250 feet of any mastication or chipping operations for ground crew or spotters to immediately extinguish any ignition.
SPR FP-3	Restrict Location of Flammable Materials	Flammable materials will be kept at least 10 feet away from any equipment that could produce a spark, fire, or flame. Portable tools powered by gasoline-fueled internal combustion engines will not be used within 25 feet of any flammable materials unless at least one round-point shovel or fire extinguisher is within immediate reach of the work crew (no more than 25 feet away from the work area).
SPR FP-4	Identify Potential Ignition Hazards	Treatment areas will be walked prior to operations to determine if there are any potential ignition hazards such as rocks, metal objects, or fuel sources that could act as possible ignition points. The Contractor should adjust operational schedules to operate in these areas when fire hazard risks are the lowest, such as early morning.
SPR FP-5	Identify Potential Ignition Hazards	Work areas will be walked at the end of each day to conduct a fire check unless conditions are too wet for an ignition to occur. During times when vegetation is flammable, a minimum of 2-hour fire watches each day following conclusion of mechanized operations. Fire watch may include time spent conducting routine end-of-day equipment maintenance.
SPR FP-6	Avoid Metal Equipment	Avoid metal string or blade weed trimmers.
SPR FP-7	Fire Suppression Systems for Mastication	Heavy equipment conducting mastication will have a foam fire suppression system built in.
SPR FP-8	Minimize Burn Pile Size	The project proponent will not create burn piles that exceed 20 feet in length, width, or diameter, except when on landings, road surfaces, or on contour to minimize the spatial extent of soil damage. Piles should be constructed with 10 feet of clearance around them. The project proponent will not locate burn piles in a Watercourse and Lake Protection Zone as defined in 14 CCR Section 916.5 of the California Forest Practice Rules. This SPR applies to mechanical, manual, and prescribed burning treatment activities and all treatment types.
SPR FP-9	Allowable Pile Burn on Permissable Burn Days and in	Pile burning will only be allowed on days when fire is less likely to spread (e.g., wind speeds are less than 15 mph).

	compliance with Burn Permits	
SPR FP-10	Allowable Pile Burn Slopes	Piles will only be constructed in areas where burning can be safely controlled, for example, on the flattest area possible. Bottoms of steep, vegetated hills will be avoided.
SPR FP-11	Allowable Pile Burn Locations	Piles will be set back from public roads and trails at a distance to minimize risk to the public or cordoned off from the public.
SPR FP-12	Compliance with CalFire, Fire Departments, and MBARD.	All requirements of CAL FIRE, the local fire department, and/or the MBARD will be met, including any permit, notification, burn bans, and reporting requirements. Have fire suppression crews on-site during the fire season determined by CAL FIRE or the local fire department (typically mid-May to mid-November) during curtain and pile burns. Pile burning will adhere to MBARD criteria pollutant thresholds and Regulation 5 for open burning.
Biomass Management		**Description**
SPR BIOM-1	Cover Trucks Hauling Logs	Cover all trucks hauling logs off site or require all trucks hauling off site to maintain at least 2 feet of freeboard.
SPR BIOM-2	Smoke Management Plan for All Burns	Unless an exemption (e.g. for very small cultural burn demonstrations) is negotiated at least a week in advance with MBARD, all prescribed burns within the Program Area will have a Smoke Management Plan (SMP) developed for them and approved by MBARD before implementation. As part of burn planning, managers will coordinate prescribed burns with MBARD staff in order to choose the optimal conditions with which to burn in order to generate minimal smoke impacts to the community.
SPR BIOM-4	Minimization of Pile Burning Disturbance	Pile burning will not be performed in sensitive habitats, such as wetlands or riparian areas. If piles are burned on a different day than piled, the piles should be moved prior to burning to ensure wildlife is not present, such as by re-piling by hand, or a qualified biologist will inspect the pile prior to burning to ensure wildlife are not present. If moving or inspection of the piles is not feasible, the pile will be lit from one side and allowed to burn slowly to the other side, in order to allow any wildlife to relocate, rather than lighting the entire pile at once.

Traffic Control and County Right of Way		Description
SPR TRFFC-1	Restrict Traffic in Residential Areas	Heavy equipment and haul traffic will be prohibited in residential areas to the greatest extent feasible. When no other route to and from the site is available, heavy equipment and haul traffic through residential areas will be restricted to the hours of 8 a.m. to 5:30 p.m., Monday through Friday. If heavy equipment or hauling is required beyond the hours above, the County or their contractor would provide notice to adjacent property owners 48 hours in advance of such activities.
SPR TRFFC-2	Submit Traffic Control Plan	The Contractor is responsible for assessing treatment areas to determine where traffic control may be needed. The Contractor will provide the RCDSCC with a traffic control plan to be approved by the County of Santa Cruz Public Works Department.
SPR TRFFC-3	Flag or Sign Road/Lane/Route Closures Per Public Works Protocol	The Contractor is responsible for compliance with the County-approved traffic control plan, including but not limited to the use of signage, cones, a flagger, or additional traffic control personnel as appropriate for the site.
Erosion Control Standards		**Description**
SPR EC-1	Limit Timeframe and Implement Erosion Control	All treatment activities will be completed prior to October 15. Work beyond October 15 will be specifically authorized in advance by the County of Santa Cruz and other permitting agencies. Revegetation and invasive species management can occur year-round. All inactive areas (defined as a five-day period) will have all necessary soil stabilization practices in place two days after identification of inactivity and/or before a rain event, whichever comes first. All erosion control will meet specifications in County of Santa Cruz Erosion Control Ordinance Chapter 16.22. An Erosion Control Plan will be provided to the Contractor, as needed.
SPR EC-2	Protect Disturbed Areas	All soil exposed as a result of project activities will be stabilized with straw mulch, through broadcast seeding, live planting, hydroseeding, by scattering native slash, lopped vegetation, wood chips or otherwise protected to match pre- construction conditions or better. Where straw or wood mulch is used, it will be tamped into the ground surface so that it is sufficiently in contact with the soil surface. If erosion control fabrics are used in revegetated areas, they will be slit in appropriate locations to allow for plant root growth. Only non-monofilament, wildlife-safe fabrics will be used.

<table>
<tr><td>SPR EC-3</td><td>Restore Soil Surface Conditions</td><td>Berms, ruts and other operator-caused ground disturbance (over 12 inches) in height/depth will be smoothed out to original contours before leaving the immediate work area.</td></tr>
<tr><td>SPR EC-4</td><td>Install Erosion Control Devices</td><td>Erosion control and sediment detention devices will be incorporated into the project design and implemented at the time of project implementation. These devices will be in place prior to October 15 and the onset of rains for the purposes of minimizing fine sediment and sediment to waterways and of detaining water to retain sediment on-site. These devices will be placed at all locations where the likelihood of sediment input exists. Sediment collected in these devices will be disposed of away from the collection site and outside riparian areas and flood hazard areas.</td></tr>
<tr><td>SPR EC-5</td><td>Water break Installation</td><td>Where appropriate, waterbars (waterbreaks) can be used to address concerns about bare soils and soil erosion. Waterbreaks will be placed at an approximate 45-degree angle, be cut diagonally to a minimum 6 inches into the firm roadbed or disturbed area, have a continuous firm embankment of at least 6 inches in height, and a width of 6 inches immediately adjacent to the lower edge of the waterbreak cut-out flow. Waterbreaks will be located to allow water to be discharged into some form of vegetative cover, duff (forest floor detritus), slash, rocks, or less erodible material wherever possible, and will be constructed to provide for unrestricted discharge at the lower end of the waterbreak so that water will be discharged and spread in such a manner that erosion will be minimized.

Waterbreak spacing will conform with the table below. The waterbreak spacing may also be adjusted by the RCDSCC or their supervised designee to create a greater level of protection than identified under general soil stabilization measures.
<table>
<tr><td colspan="4">Maximum Distance Between Waterbreaks Measured in *Feet</td></tr>
<tr><td colspan="4">U.S. Equivalent Measure Road or Trail Gradient in percent</td></tr>
<tr><td>10% of less</td><td>11-12%</td><td>26-50%</td><td>>50%</td></tr>
<tr><td>100</td><td>75</td><td>50</td><td>50</td></tr>
</table>
*Feet = Measured along the ground based on slope</td></tr>
<tr><td>SPR EC-6</td><td>Complete Grading Activities During Dry Period</td><td>All treatment activities will not be conducted during rain events or on any day for which the National Weather Service has predicted a 25% or more chance of at least 0.1 inch of rain in 24 hours (Predicted Rain Event). Effective erosion control, sediment control, and</td></tr>
</table>

		other protective measures will be installed no later than the day prior to the Predicted Rain Event, and prior to the start of any rainfall. Construction activities will resume after the rain has ceased, the National Weather Service predicts clear weather for at least 24 hours, and site conditions are dry enough to continue work without discharge of sediment or other pollutants from the project site.
SPR EC-7	Soil Saturation	The operation of heavy equipment for tree removal and skidding, and truck traffic will not occur when soils become saturated (from rain event). Saturated soil means that soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur. Indicators of saturated soil conditions may include, but are not limited to: (1) areas of ponded water, (2) pumping of fines from the soil or road surfacing material during Mechanized Equipment Operations, (3) loss of bearing strength resulting in the deflection of soil or road surfaces under a load, such as the creation of wheel ruts, (4) spinning or churning of wheels or tracks that produces a wet slurry, or (5) inadequate traction without blading wet soil or surfacing materials."
SPR EC-8	Review Erosion Control Measures at Project Site	The RCDSCC will oversee project implementation to confirm all planned erosion control measures are in place immediately following completion of treatment activities or prior to forecasted rain events. The RCDSCC will conduct annual monitoring to ensure the long-term outcomes have been achieved or propose corrective measures. Annual monitoring will continue and be reported in the Annual Report until erosion control measures are satisfactorily functioning.

Slope Protection		**Description**
SPR SOIL-1	Slope restrictions for mechanical equipment	Ground-based equipment (e.g., masticators, feller-bunchers) will be restricted to slopes less than 30%. This measure automatically excludes heavy equipment from all program area soils with erodibility ratings of "severe" or "very severe". Exceptions may be made for short pitches of 100 feet slope distance, up to 50 percent slope. Exposed soils resulting from ground-based equipment on slopes over 30% slope will be 90% covered with operational slash or low-weed-seed hay/straw to a minimum 2" depth prior to the winter period (Nov. 15 – April 1). This will occur after the conclusion of each individual operation and prior to each winter period for the life of the Program. When areas over 30% slope occur in a project area, then the following methods will be used to keep operators out of areas over 30% slope: flagging, mapping, and/or meeting with equipment operators. Hand work crews may work

		on slopes of any steepness, constrained only by crew supervisor judgement about personnel safety.
SPR SOIL-2	Ensure Slope Stability	The project proponent will require a Registered Professional Forester (RPF) or licensed geologist to evaluate treatment areas with slopes greater than 50 percent for unstable areas and unstable soils. If unstable areas or soils are identified within the treatment area, are unavoidable, and will be potentially directly or indirectly affected by the treatment, a licensed geologist (P.G. or C.E.G.) will determine the potential for landslide, erosion, of other issue related to unstable soils and identity measures that will be implemented by the project proponent such that substantial erosion or loss of topsoil would not occur. Feller-bunchers will be restricted to slopes less than 30%.
SPR SOIL-3	Equipment Operation on Slopes	Equipment will operate parallel to the slope (up and down the fall line) to the greatest extent feasible.
Hazardous Materials and Spill Prevention		**Description**
SPR HAZ-1	Review Cortese List of Hazardous Materials Sites for Avoidance	During the project planning phase, the RCDSCC will conduct a review of the "Cortese List" data resources to ensure that the project area is not located in any hazardous materials sites.
SPR HAZ-2	Contain Equipment Storage, Maintenance, and Refueling at Least 100 Feet from Waterways	A contained area will be designated for equipment storage, short-term maintenance, and refueling of heavy equipment, chainsaws etc. It will be located at least 100-feet from all water bodies, in a location where fluids or accidental discharges cannot flow into waterways. If site conditions (property size) make this 100-foot distance infeasible, these activities will occur at the maximum distance possible from aquatic areas, the Contractor will construct an impermeable containment feature (e.g., a Visqueen-covered earthen berm or gravel bag barrier) to prevent fluids, wash water or other pollutants from escaping the staging site and entering waters of the state or storm drains.

SPR HAZ-3	Reduce Potential for Spills	Discourage “topping-off” fuel tanks. All diesel and gasoline powered equipment will be maintained per manufacturer's instructions. Workers using fuels or other hazardous materials must be knowledgeable of the specific procedures necessary for hazardous materials cleanup and emergency response. Use of secondary containment and spill rags when fueling.
SPR HAZ-4	Inspect and Cleanup Vehicle Leak	Vehicles will be inspected for leaks and repaired immediately daily. Leaking equipment will not be allowed into the project area. All questionable motor oil, coolant, transmission fluid, and hydraulic fluid hoses, fittings, and/or seals on construction equipment will be replaced. All mechanical equipment will be inspected daily to ensure there are no motor oil, transmission fluid, hydraulic fluid, and/or coolant leaks . If, during the course of operations, a fuel or hydraulic fluid leak is discovered, the machine will stop, and the leak will be contained and fixed immediately. All leaks will be repaired in the equipment staging area or other suitable location (away from watercourses) prior to resumption of construction activity. Leaks, drips and other spills will be cleaned up immediately to avoid soil or groundwater contamination. Operations with that equipment will not resume until the leak has been fixed.
SPR HAZ-5	Maintain and Wash Vehicles to Protect Environment	Major vehicle maintenance and washing will be done in a manner that protects the environment (at a minimum on a paved surface where all wash water, drippings, runoff, etc. is collected and properly disposed, and preferably offsite).
SPR HAZ-6	Properly Dispose of Spent Fluid and Debris	All spent fluids (including motor oil, radiator coolant, and/or other fluids) and used vehicle batteries will be collected, stored, and recycled as hazardous waste off site. All construction debris and sediments (if sediments are not incorporated on site) will be properly disposed. Plans will indicate the approved disposal site.
SPR HAZ-7	Prevent Petroleum Release into Waterways	The RCDSCC will ensure that the use and/or storage of petroleum-powered equipment will be accomplished in a manner to prevent the potential release of petroleum materials into waters of the state (Fish and Game Code 5650). All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

SPR HAZ-8	Comply with Spill Prevention Procedures.	Emergency spill supplies and equipment will be available to respond in a timely manner if an incident should occur. Response materials such as oil-absorbent material, tarps, and storage drums will be available in the plan area at all times during management activities and will be used as needed to contain and control any minor releases
SPR HAZ-9	Utilize Dry Clean Up Methods	Dry cleanup methods (i.e., absorbent materials, cat litter, and/or rags) will be used whenever possible. Spilled dry materials will be swept up immediately. Spilled materials will not be washed away with water or buried. If water must be used, the Contractor shall collect the water and spilled fluids and dispose of it as hazardous waste. Proper disposal or management of contaminated soils and materials (i.e., clean up materials) is required.
SPR HAZ-10	Spill Reporting Requirements	Small spills (less than 18 inches in diameter) including small quantities of oil, gasoline, paint, or other materials should be controlled by the first responder (maintenance staff) and do not necessarily require an emergency response team. Medium spills (greater than 18 inches but less than 6 feet in diameter) are typically controlled by the first responder (maintenance staff) but police or fire department HAZMAT teams may be called based on conditions. Report significant spills (larger than 6 feet in diameter and any "running" spill) immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill, contact the San Mateo County Environmental Health Services Division, or other emergency office (e.g., local fire or police department) as warranted, immediately and document the spill using the spill documentation form. Alternatively, 1) dial 911, the local emergency response number, 2) the National Response Center at (800) 424-8802; or 2) call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours). As appropriate, contact other agencies including California Occupational Safety and Health Administration or the Regional Water Quality Control Board. All chemical spills shall be reported as soon as possible to the emergency site contact.
SPR HAZ-7	Prohibit Use of Hydraulic Fluids Containing Organophosphate Esters	Hydraulic fluids in mechanical equipment working within the active stream channel will not contain organophosphate esters.
SPR HAZ-8	Properly Dispose of Trash and Construction Debris	During treatment activities, the operator will not dump any trash and/or construction debris into the wetted channel; all trash and/or construction debris will be collected and properly disposed. During the project activities, all trash and food that may attract potential predators of salmonids (e.g., raccoons, piscivores, etc.) will be properly contained, removed

		from the work site, and disposed of daily.
SPR HAZ-12	Comply with fire safety code requirements, General Plan policy and standards, and all other applicable regulations	RCDSCC will incorporate all applicable fire safety code requirements and includes fire protection devices as required by the local fire agency. RCDSCC will meet the General Plan policies related to fire resilience and access in the Santa Cruz County General Plan, and standards for defensible spaces in the PRC and SCCC.
Limitations on Earthmoving and Vegetation Removal		**Description**
SPR EM-1	Minimize Ground Disturbance and Vegetation Removal	Disturbance to existing grades and vegetation will be limited to the actual site of the treatment area and necessary access routes. Existing access routes and staging areas should be utilized as much as possible. In areas where new staging areas must be created, the size of the staging area including access roads will be less than 0.25 acres.
SPR EM-2	Minimize Disturbance to Native Vegetation	Disturbance of native shrubs, woody perennials or tree removal on the streambank or stream channel will be avoided or minimized to the fullest possible extent.
SPR EM-3	Avoid Thinning of Riparian Stands	As much as possible, project activities will avoid thinning out stands of riparian vegetation to minimize potential for increased cowbird predation and minimize loss of canopy cover. If riparian vegetation will be disturbed, it will be replaced with similar and/or native riparian species. Riparian vegetation will be cleared by hand, leaving as much as possible of the root wad and base of native plants intact.
SPR EM-4	Wetland Delineations	If potential wetlands are identified in the project area, wetland delineation, consistent with procedures outlined by the U.S. Army Corps of Engineers will be performed during the site evaluation stage of planning to assist in avoiding impacts to wetlands.
Revegetation of the Project Area and Removal of Non-Native Plants		**Description**

SPR VEG-1	Monitor Baseline Conditions for Non-Native Plants	Significant infestations of invasive plant species (i.e., those rated as invasive by Cal-IPC or designated as noxious weeds by California Department of Food and Agriculture) will be identified during reconnaissance-level surveys and targeted for removal during treatment activities. Treatment methods will be selected based on the invasive species present and may include herbicide application, manual or mechanical treatments, prescribed burning, and/or herbivory, and will be designed to maximize success in killing or removing the invasive plants and preventing reestablishment based on the life history characteristics of the invasive plant species present. Treatments will be focused on removing invasive plant species that cause ecological harm to native vegetation types, especially those that can alter fire cycles.
SPR VEG-2	Monitor Baseline Conditions for -Native Plants	If native vegetation is disturbed during project implementation, the native plant community will be restored to pre-construction condition or better. Native plants characteristic of the local habitat type will be the preferred alternative for revegetation, however temporary erosion control seed (ie common barley) can be used, as well.
SPR VEG-3	Restore Project Area to Pre-Construction Condition or Better	On completion of work, site contours will be returned to preconstruction conditions or designed to provide increased biological and hydrological functions. Where disturbed, topsoil will be conserved for reuse during restoration, to the extent practicable. The project area vegetation will be restored to pre-construction condition or better (including as directed by project specific success criteria) and will be maintained until this goal and/or project specific success criteria have been met and plants have become established. Revegetation and non-native plant removal programs will be monitored for at least two years and until success criteria are reached. If information has been submitted by a qualified individual that demonstrates that certain characteristics of the site and/or the revegetation plan indicate that the revegetation may be established more quickly, and if success criteria are reached after shorter period of time, then a shorter period of monitoring may be adequate.
SPR VEG-4	Restore Project Area with Native Plant Communities	Prepare project-level restoration plan guided by Attachment D, Restoration Program Guidelines and in coordination with the RCD, the County, and CDFW. Restoration plans will be completed based on site-specific requirements. Native plant assemblages appropriate to the specific geographic area will be the prioritized source of planting materials for revegetation. Plants salvaged from the site, plants propagated vegetatively from on-site plants or plants very close to the site, or plants grown from seed collected from the site or

		plants very close to the site are preferred. Plant species that are native to the broader region (e.g., California Central Coast) can also be acceptable. Non-native, non-invasive plant species for erosion control (ie sterile common barley) can also be used. Plants rated as invasive by Cal- IPC or designated as noxious weeds by California Department of Food and Agriculture are prohibited from use. See Attachment D Restoration Plan Guidelines.
SPR VEG-5	Prevent Use of Contaminated Plant Materials	Plant materials used for revegetation should be grown using phytosanitary BMPs to protect against introduction of *Phytophthora ramorum* (the pathogen that causes sudden oak death). Plants and seeds used in revegetation should not have been treated with neonicotinoids or other persistent insecticides that can kill or harm insects at the project site. Native plant materials that are grown at or delivered from a nursery will be closely inspected for disease and pests prior to use.
SPR VEG-6	Prevent Spread of Plant Pathogens	When working in sensitive natural communities, riparian habitats, or oak woodlands that are at risk from plant pathogens, the following measures should be taken: Clean and sanitize vehicles, equipment, footwear, and clothing; minimize soil disturbance; minimize soil and plant material movement; and clean soil and debris from equipment and sanitize tools. Each time equipment or vehicles leave the site, the equipment or vehicles should be inspected by operations personnel for host plant debris (leaves, twigs, and branches). Host plant debris should be removed from equipment and vehicles prior to their departure. This applies to all equipment and vehicles associated with the operation, including heavy equipment, equipment transport trucks and trailers, pick-up trucks, employee's personal vehicles, etc. After working in an infested area, accumulations of soil, mud, leaves, twigs, and other organic debris from shoes, boots, vehicles and heavy equipment, etc. will be washed off/removed before traveling to an area that is not infested with pitch canker, dwarf mistletoe, western gall rust, and potentially sudden oak death. Lysol® or a bleach solution should be used to disinfect shoes and boots after cleaning.

SPR VEG-7	Prevent Spread of Disease	Disease host species, or disease infected trees should only be chipped back into areas where infected or host species are already present to avoid and minimize the risk of spreading disease. Diseased material of any kind i.e., firewood, logs, or lumber should not be transported off the Project without observing the requirements for transport of material within a quarantine area or zone of infestation.
SPR VEG-8	Treat Invasive Plants Prior to Seeding	Activities will be scheduled to maximize the effectiveness of control efforts and minimize introduction and spread of invasive plants as feasible, with consideration for project objectives and location. Equipment will be staged in areas free of invasive plant infestations unless there are no uninfested areas present within a reasonable proximity to the treatment areas.
SPR VEG-9	Prevent Spread of Invasive Species	For all heavy equipment and vehicles traveling off road, pressure wash, if feasible, or otherwise appropriately decontaminate equipment at a designated weed-cleaning station prior to entering the treatment area from an area with infestations of invasive plants, noxious weeds, or invasive wildlife. Anti-fungal wash agents will be specified if the equipment has been exposed to any pathogen that could affect native species. Invasive species should only be masticated or chipped back into areas where non-native species are already present to avoid and minimize the risk of spreading invasive species.
SPR VEG-10	Monitor Revegetation and Non-native Cover	Inspections for the purpose of assessing the survival and growth of revegetated areas and the presence of exposed soil will be conducted by the RCDSCC until vegetation is established and the project is functioning as intended, and success criteria have been met. Revegetation success will be documented in the Annual Report provided to the County and participating agencies each year. If the status reviews reveal that the vegetative plantings are not becoming well established an adaptive management plan that provides erosion control and habitat value at least equivalent to that which existed on the site prior to the project, and which considers cost and feasibility, will be implemented. The spread or introduction of invasive plant species will be avoided to the maximum extent possible by avoiding areas with established native vegetation during project activities wherever possible, restoring disturbed areas of native communities with native species where appropriate (as described above), and post-project monitoring and control of invasive species being treated as part of the project. Removal of invasive exotic species will be strongly recommended. Mechanical removal (hand tools, weed whacking, hand pulling, brush raking)

		of exotics will be done in preparation for establishment of plantings. To the greatest extent possible, vegetation will be removed by hand. To the extent possible, revegetation should be implemented at the same time removal of exotic vegetation occurs. If *Arundo donax* (or similar exotics that reproduce from cuttings) is removed, cuttings will be disposed of in a manner that will not allow re-establishment to occur and will not expose other areas to cuttings. Each specific project area disturbed by a project activity will be monitored for an increase in non-native plant cover. Non-native, invasive plants that have colonized the area or expanded will be removed using BMPs designed to prevent re- establishment, unless the site is adjacent to an established, existing infestation that cannot reasonably be prevented from spreading on to the site without constant removal efforts.
SPR VEG-11	Completing Revegetation Requirements	All exclusion netting/caging placed around plantings, irrigation lines and other materials will be removed after 2 years or sooner.
Vernal Pool Restrictions		**Description**
SPR VP-1	Prohibit Work in Vernal Pools	No work will be allowed in vernal pools under the Program.
SPR CUL-1	Native American Consultation	Consultation with Native American tribe prior to implementation of the project or activity. Native American consultation should include contacting representatives from the local Native American community that are identified by the NAHC as potentially having information pertinent to the project area to discuss the project and gather information on any potential impacts to Tribal resources or Native American concerns about the project activity. Initial communication should be in writing and include details about the project area, project activities and the results of any cultural resource inventory efforts to date, as well as a map of the project area. Follow up communication via phone call and email should be conducted for all representatives that did not respond to the initial letter. All three method of investigation should be documented in a report and the final report submitted to

		the NWIC.
SPR BIO-1	Protect Sensitive Habitats	If sensitive habitat is in or adjacent to the work area and/or will be used for staging/access, qualified biologist will assess potential impacts to sensitive habitats. The Program would avoid permanent impacts (tree removal/clearing/grubbing/ ground disturbance/earth movement) to the extent feasible, minimize the footprint and protect sensitive habitats during work, which may include ESA fencing.
SPR BIO-2	Protect Aquatic Features/Associated Riparian	A USFWS/CDFW-approved biologist will assess potential impact to aquatic features and associated riparian within the Program Area. When the Project Area is within 50 meters of aquatic habitat, a USFWS/CDFW-approved biologist or approved biological monitor will be present during all activities. When the Project Area is within 200 meters, a USFWS/CDFW-approved biologist or approved biological monitor will conduct a morning site check each day. Work will not be conducted during the rainy season.
SPR BIO-3	Protect Sensitive Plant Species	If suitable habitat for sensitive plant species is adjacent to work area and/or will be used for staging/access, the qualified biologist will conduct a rare plant survey and implement salvage measures that are appropriate for the specific plant. The Program will avoid impacts to sensitive plant species if feasible. If not, the Program will minimize the disturbance footprint and implement salvage measures that are appropriate to the species. See Table 3 of the Biotic Assessment (Attachment B) for species specific salvage measures.
SPR BIO-4	Protect Sensitive Wildlife Species	For all Program activities, a qualified biologist shall review proposed work areas and adjacent habitats to identify suitable habitat for special-status fish, amphibians, reptiles, birds, bats, and mammals, conduct any necessary pre-activity surveys, and prescribe appropriate avoidance and minimization measures (e.g., no-work buffers, seasonal timing restrictions, relocation under agency authorization, and erosion/sediment/water-quality controls). If special-status species, nests, roosts, or occupied burrows/houses are detected, the biologist shall coordinate with the appropriate resource agencies (e.g., CDFW, USFWS, NMFS) and implement protective measures so that direct and indirect impacts to special-status species and their habitats are avoided or minimized to the maximum extent feasible.

SPR CUL-1	Tribal Consultation and Protection of Tribal Resources	Using the appropriate Santa Cruz County Native American Contact List, the RCD will notify the identified Native American representatives in writing and provide details about the project location and project activities. For any Native American representatives that do not respond to the initial letter, follow-up communication, via phone call and email, will be undertaken. The goal is to identify potential impacts to Tribal cultural resources early in the project planning phase to ensure that impacts to these resources are avoided. Tribal cultural resources may include, but are not limited to, sites, features, landscapes, places, or objects of value to a Tribe
SPR CUL-2	Low Impact Program Project Cultural Resource Assessment	Low Impact Program projects are defined as meeting the following two criteria: 1. Ground-disturbing project elements are limited to no more than 4 inches (10 cm) below current grade outside an existing agricultural field, or ground-disturbing project elements limited to no more than 12 inches (30 cm) below current grade within an existing agricultural field or an area of documented disturbance within the upper foot of the soil prism; and 2. No heavy equipment is used (i.e., backhoe, skid steer, etc.); hand tools and foot traffic only will be used to implement all project elements. For Program projects that meet the two criteria above, a cultural resource assessment will be completed for the area where all project activities will take place. The assessment will be completed by an archaeologically trained resource professional include the following at minimum: - Background research o Conduct a non-confidential record search at the NWIC o Review historical maps and aerial imagery o Review existing historic, ethnographic, and archaeological context of the project vicinity o Conduct a Sacred Lands File search with the Native American Heritage Commission - Pedestrian survey o Conduct field reconnaissance covering the entire project area, conducted via systemic transects spaced 10 meters apart, or, for rugged terrain, a coverage strategy that targets all landforms that could reasonably support the formation of archaeological sites and built environment resources. - Letter report of findings o Documentation should include all information gathered during background research and pedestrian surveys tasks, as well as any pertinent information gathered (and

		appropriate to share) during RCD's Tribal consultation (see CUL-1). If any cultural resources are identified during the assessment, the RCD will consult with a qualified archaeologist for next steps and implement CUL-4 and CUL-5 if the resource cannot be avoided.
SPR CUL-3	Program Project Phase I Cultural Resource Inventory	For all Program projects that do not meet the criteria as Low Impact projects, a Phase I Cultural Resource Inventory study will be completed for the area where all project activities will take place. The inventory will be completed by a qualified archaeologist that meets the Secretary of the Interior Standards and will include the following at minimum: - Background research o Conduct a confidential record search at the NWIC o Review historical maps and aerial imagery o Review and, if needed, develop historic, ethnographic, and archaeological context of the project vicinity o Conduct a Sacred Lands File search with the Native American Heritage Commission o Conduct a desktop geoarchaeological sensitivity assessment for the project area - Pedestrian survey o Conduct field reconnaissance covering the entire project area, conducted via systemic transects spaced 10 meters apart, or, for rugged terrain, a coverage strategy that targets all landforms that could reasonably support the formation of archaeological sites and built environment resources. - Report of findings o Documentation will meet the Secretary of the Interior Standards and should include all information gathered during background research and pedestrian surveys tasks, as well as any pertinent information gathered (and appropriate to share) during RCD's Tribal consultation (see CUL-1).
SPR CUL-4	Cultural Resource Extended Phase I Presence/ Absence Testing	For all Program projects that have positive Cultural Resource Assessments and positive or inconclusive Phase I Cultural Resource Inventories, and the cultural resource cannot be avoided through project re-designs, a small-scale presence/absence subsurface study will be completed by a qualified archaeologist that meets the Secretary of the Interior Standards and will include the following at minimum: Excavation of a series of Shovel Probes (~40-cm diameter hand-dug units) to the maximum depth of project impacts. Shovel probes should be spaced across the project area in a quantity sufficient to investigate the subsurface matrix of the project area (i.e., 50–75 feet apart). Report of findings

		o Documentation will meet the Secretary of the Interior Standards and should include all information gathered during the presence/absence testing, as well as any pertinent information gathered (an appropriate to share) during RCD's Tribal consultation (see CUL-1).
SPR CUL-5	Cultural Resource Evaluation and Significance Study	For all Program projects that have positive Extended Phase I Cultural Resource Inventories, and the cultural resource cannot be avoided through project re-designs, an Evaluation and Significance Study will be completed by a qualified archaeologist that meets the Secretary of the Interior Standards and will include the following at minimum: - Develop a research design that details the pertinent historical context and outlines important research questions and data requirements. - Conduct fieldwork appropriate to the cultural resource (i.e., archaeological subsurface testing; or ethnographic interviews on site with Tribal members; or built environment field documentation for HABS/HAER/HAL). - Conduct laboratory analysis and specialized studies on archaeological materials. - Combine the data collected from the research design, fieldwork, and laboratory analysis to determine if the resource is a historical resource, or is a contributing element of an existing historical resource, meeting the established criteria for inclusion in the California Register of Historical Resources (CRHR) (CEQA Guidelines, Section 15064.5 [a]). - Report of findings o Documentation will meet the Secretary of the Interior Standards and should include all information gathered during the study, as well as any pertinent information gathered (an appropriate to share) during RCD's Tribal consultation (see CUL-1). - In accordance with CEQA, cultural resources within the Project Area that have the potential to be impacted by project activities and that cannot be avoided or that are encountered during Program project implementation (i.e., not previously known) shall be evaluated to determine if the resource is a historical resource, or is a contributing element of an existing historical resource, meeting the established criteria for inclusion in the CRHR (CEQA Guidelines, Section 15064.5 [a]).
SPR CUL-6	Cultural Resources Treatment Plan	For all Program projects that have cultural resources located within the project area that are determined eligible for listing on the CRHR, a Cultural Resources Treatment Plan (CRTP) will be developed and implemented to reduce the impacts of the Project to less than significant. The CRTP should be developed and implemented in consultation with the local Native American community and any other stakeholders to ensure their input. The CRTP should, at a minimum, include a detailed description of the project and its subsurface impacts;

		description of the environmental setting and precolonial/historic-era background; research questions and goals to be addressed by the investigation; detailed field strategy used to record and recover data from eligible resources; analytical methods; reporting requirements; curation plans; and appendices including site records, correspondence, artifact catalogs, etc.
SPR CUL-7	Cultural Resource Training	Prior to any project activities commencing, the RCD Project Manager will administer a cultural resource sensitivity and awareness training on the protection of sensitive archaeological, historical, and Tribal cultural resources, to be presented to all construction crew members and site supervisors. The training will include details about archaeological sensitivity of the general area, the legal requirements related to protecting cultural resources, a review of the kinds and types of artifacts and features that may be encountered, the importance of cultural resources to the Native American community, and the protocols to follow should cultural resources be discovered during project construction.
SPR CUL-8	Discovery of Cultural Resources	If previously unidentified cultural materials are unearthed during construction activities/installing a conservation practice, then it is CEQA policy that work be halted within a 50-foot radius of the find until a qualified archaeologist can evaluate the nature and significance of the find. If the find is determined to be significant, steps shall be taken to protect the find from further damage or disruption. Additionally, an appropriate mitigation plan shall be developed and implemented with the concurrence of the Lead Agencies and in consultation with local Native American representatives.
SPR CUL-9	Discovery of Human Remains	In accordance with California PRC Sections 5097 and 7050.5, if, at any time, human remains are discovered, the Santa Cruz County Coroner, RCD Project Manager, and landowner will be notified immediately and all work on the project will temporarily halt. If the Coroner determines that the remains are likely to be Native American, the Native American Heritage Commission will be notified and will appoint a Most Likely Descendent (MLD) to provide recommendations for the disposition of the remains and work will not resume until they have made a recommendation to the landowner and RCD, for means of treating and disposing of, with appropriate dignity, the human remains and any associated grave goods, as provided in California PRC 5097.98.
SPR CUL-10	Confidentiality of Archaeological or Sacred Lands Sites	All information obtained from a Tribe will be kept confidential and RCD staff will not disclose the location of an archaeological site or sacred lands or any other information that is exempt from public disclosure pursuant to the Public Records Act.

Mitigation Measures

Biological Resources		**Description**
MM BIO-1	Implement Applicable Species Specific Mitigation Measures.	For each project covered under the Program, the Program Applicant shall identify and implement all applicable species-specific mitigation measures (MM BIO-1.A through MM BIO-1.K) based on the biological resources present, the activities proposed, and the timing of work. These measures address potential impacts to sensitive plants, Crotch's bumble bee, sensitive fish, Santa Cruz long-toed salamander, California red-legged frog, California giant salamander/Santa Cruz black salamander, northwestern pond turtle, nesting birds, roosting bats, San Francisco dusky-footed woodrat, and American badger. See Table 1 below that outlines sensitive resources with potential to occur by supportive habitat types , conditions under which these resources should be considered, and summary of surveys required and protective measures, if detected.
MM BIO-1.A	Sensitive Plant Species Protective Measures	1. Prior to initiating program activities, perform preconstruction surveys for sensitive plant species within eucalyptus groves, access, and equipment staging areas during the appropriate phenological (blooming) period for plants with potential to occur in those areas. 2. Occurrences of sensitive plants will be mapped using GPS and GIS to facilitate avoidance of these populations to the extent feasible. Sensitive plant occurrences identified in the field will be marked with pin flags or flagging at the outermost extent of the population. All flagging would be removed after completion of Program activities. 3. Where impacts to sensitive plants are unavoidable, a qualified biologist would coordinate with the appropriate regulatory agencies depending on listing/status (i.e., USFWS, CDFW) for the protection of botanical resources based on the habitat requirements and life history of plants encountered during preconstruction surveys. • For annual herbaceous plants, implement salvage measures including topsoil and seed collection. Store salvaged materials following CDFA and CNPS nursery standards for collected topsoil and/or seed for dispersal at suitable donor sites for transplantation/restoration near the area of impact. • For perennial herbaceous plants, implement salvage measures including seed collection for direct dispersal and/or nursery propagation, or collect and transplant individual plants to suitable donor sites near the area of impact. • For perennial woody shrubs and/or trees, implement salvage measures by collecting and propagating seed in a nursery setting for out-planting at suitable transplantation sites. Directly

		salvage and transplant individual shrubs and trees, where feasible. The following general BMPs for the protection and conservation of sensitive plant species will be employed in combination with those listed below for other protected resources, including sensitive habitat types: 4. Minimize removal of, or disturbance to, vegetation outside of the footprint of the eucalyptus grove. To the maximum extent feasible, confine project activities and operation of equipment and vehicles, including site access, staging and parking to the designated staging areas. 5. Clean all equipment caked with mud, soils, or debris from offsite sources or previous project sites prior to staging equipment on site to avoid introducing or spreading invasive exotic plant species. When practicable, remove invasive exotic plants from areas supporting sensitive plants in and adjacent to eucalyptus groves. All equipment used on the premises should be cleaned prior to leaving the site for future projects. 6. Where sensitive plants in or near eucalyptus groves may be impacted by tree removal activities, erect a suitable barrier, (e.g. a temporary construction mesh fencing) to prevent encroachment by vehicles and other construction activity, and to protect the area from inadvertent erosion or stockpiling of materials. The location and integrity of the fencing would be field checked by a qualified botanist/plant ecologist prior to the onset of construction and periodically during the construction period. 7. Prohibit use of non-native, invasive plant species for landscaping or restoration within areas supporting sensitive plants. All species listed as potentially invasive by the California Invasive Plant Council should be included on the prohibited list. 8. Prohibit all use of herbicides, pesticides, or fertilizers within areas supporting sensitive plants. If herbicides will be applied in the adjacent work areas upwind of sensitive plants, implement a drift spray buffer for work. The buffer will depend on the specific herbicide to be used, the method of application (including droplet size), the directions for application on the label (e.g. if buffer reduction mitigation options are recommended and employed), the surrounding conditions (habitat types that would intercept spray drift prior to reaching sensitive habitats), the conservation status of the rare plant and the potential impact to the population. Buffer reduction mitigation options may include setting applicators to a larger drop size, reducing the application rate, using hand applicators, and using hooded sprayers or drop nozzles. 9. Do not access areas supporting sensitive plant occurrences with vehicles or heavy equipment during rain events or when soils are saturated. 10. Ensure that biomass management techniques (chipping, prescribed burning) are suitable for specific sensitive plant species, if present, within or near a given Project Area.

MM BIO-1.B	Crotch's Bumble Bee (and General Wildlife) Protective Measures	1. For all Project sites, a qualified USFWS/CDFW-approved biologist will conduct an environmental training session for all construction personnel regarding sensitive wildlife species with potential to occur in or near the specific Project Area. For all Project sites, the training will cover: • Santa Cruz long-toed salamander In addition, the training will cover the following sensitive wildlife species, as applicable to the specific Project Area, and based on the results of pre-construction surveys by a USFWS/CDFW-approved biologist: • Crotch's bumble bee • sensitive fish species (Pacific lamprey, riffle sculpin, and steelhead) • California red-legged frog • California giant salamander • Santa Cruz black salamander • northwestern pond turtle • common and sensitive nesting birds • common and sensitive roosting bats • San Francisco dusky-footed woodrat • American badger The training will cover the following topics: • description, identification, and photograph of sensitive species; • natural history information; • protective measures and Best Management Practices to be implemented to protect sensitive wildlife species and their habitat; • the importance of avoiding impacts to sensitive species and the steps to take if individuals are encountered, alive or dead, including contacting the USFWS/CDFW-approved biologist. All construction personnel will receive the training prior to beginning work. Any new crew members that join after work has been initiated will also receive the training prior to beginning work. A sign-in sheet will document completion of the training. 2. For all project activities initiated during the colony active period (April-August), a qualified biologist will conduct a preconstruction survey for nesting and foraging bumble bees. If Project activities are initiated outside of the colony active period, surveys will be conducted during the colony active period immediately preceding the proposed project start date. 3. Surveys will occur prior to beginning construction activities and will include all work, staging, and access areas and a buffer radius of 100 feet.

		4. Surveys will occur when temperatures are at or above 60 degrees Fahrenheit and at or below 90 degrees Fahrenheit on sunny or partially sunny days when wind speeds are below 8 miles per hour. Surveys will begin no earlier than 2 hours after sunrise and no later than 3 hours before sunset. 5. If CBB are detected, consult with CDFW prior to initiating project activities. 6. Crotch's Bumble Bee nests will be given a buffer of 50 feet in which no Program activities will occur. The qualified biologist will develop a plan with CDFW to prevent the take of the nest or any individual within the Program area. 7. Where feasible, promote suitable habitat for CBB through restoration activities such as planting of native thatched grasses and retaining some downed logs.
MM BIO-1.C	Sensitive Fish Species Protective Measures	See MM BIO-1.B Crotch's Bumble Bee Protective Measure above, MM BIO-2 Upland Sensitive Habitat Protective Measures and MM BIO-3 Sensitive Aquatic Habitat Protective Measures below.
MM BIO-1.D	Santa Cruz Long-toed Salamander Protective Measures	See MM BIO-1.B Crotch's Bumble Bee Protective Measure above, MM BIO-2 Upland Sensitive Habitat Protective Measures and MM BIO-3 Sensitive Aquatic Habitat Protective Measures below. 1. For all Project sites, a qualified USFWS/CDFW-approved biologist will perform pre-construction surveys prior to project commencement and determine the level of effort needed during the course of the Project, as follows: • When eucalyptus removal will occur within 50 meters of aquatic habitat, a qualified USFWS/CDFW-approved biologist or USFWS/CDFW construction monitor will be on-site all day during all activities to provide biological monitoring. A pre-activity visual survey will be conducted by inspecting under accessible woody debris. Note that such surveys are insufficient to report a negative finding since the species is typically in subterranean mammal burrows during the summer months. During eucalyptus removal activities, the biologist will inspect any areas of surface disturbance that may expose an individual. If a SCLTS is found, in consultation with the USFWS and CDFW, it will be relocated to the nearest appropriate habitat. Any dead individuals will be documented, photographed and salvaged, if appropriate, according to the qualified biologist's permit. • When eucalyptus removal will occur within 200 meters of aquatic habitat, a qualified USFWS/CDFW-approved biologist or USFWS/CDFW-approved biological monitor will perform a morning site check as described above. The USFWS/CDFW-approved biologist or biological monitor and be on-call if an individual is observed, alive or dead, during the day. 2. Approved herbicides (not subject to the Environmental Protection Agency's injunction against the application of herbicide near aquatic habitats for CRLF and those safe for application near aquatic features) are typically permissible within 20 meters of the aquatic habitat of federally-listed amphibians. Reduced buffers may be allowable with the approval of USFWS, if the herbicide will be

		applied with a backpack sprayer, hand-held applicator, cone nozzle, or for spot treatment. For applications of approved herbicides that are safe near aquatic features, a minimum buffer of 10 meters will be implemented. For all other herbicide types and application techniques, the standard 20 meter will be implemented. 3. Avoid activities that will result in ground disturbance. Avoid grubbing or grading when preparing access and staging areas. Leave a layer of vegetation intact on the ground surface. Trampling and crushing vegetation (during the appropriate time of year and outside of refuge habitat) is preferable to ground disturbance. If ground disturbance must occur, a USFWS/CDFW-approved biologist will assess the area for potential SCLTS. 4. No stump removal will occur within the Program Area. Individual exceptions may be made if the Project Area is a monospecific stand of eucalyptus and upland over-summering habitat is not present within or adjacent to the stump proposed for removal. This exception will be made through an assessment by a USFWS/CDFW-approved biologist. 5. If mastication is employed as a technique for managing eucalyptus with small dbh or invasive weeds, the blade will be maintained a minimum of 6-8 inches above the ground at all times and no ground disturbance will occur. Individual exceptions may be made through an assessment by a USFWS/CDFW-approved biologist. 6. Debris from mastication and chipping will be spread only in Project Areas that are located outside of the 200-meter buffer around ponds within the Program Area. For Project Areas that are situated between 50 meters and 200 meters from ponds within the Program Area, a USFWS/CDFW approved biologist will assess the site to determine if the spreading of debris from mastication and chipping may occur or the thickness of the debris will be limited to a layer 1 inch thick. In Project Areas located within 50 meters of ponds the thickness of the debris will be limited to a layer 1 inch thick. All other mastication and chipping debris will be removed from this sensitive habitat. 7. If debris piles are established following Program activities, they must be moved or dismantled prior to the first rain of the year. If debris piles are to be left in place until after the first rain event of the year, the following measures will apply: • For Project Areas outside of the 200-meter buffer from ponds within the Program Area, prior to the first rain of the year, a USFWS/CDFW-approved biologist will oversee installation of drift fencing around the debris pile and placement of cover boards near (outside of) the fencing to detect SCLTS. The USFWS/CDFW-approved biologist will check the cover boards and fencing prior to further action on the debris piles. If no SCLTS are detected and the silt fencing has remained intact, the pile may be moved, dismantled or burned. • For Project Areas between 50-meter and 200-meter buffer from ponds within the Program Area,

		no pile burning will occur. Prior to the first rain of the year, a USFWS/CDFW-approved biologist will oversee installation of drift fencing around the debris pile and placement of cover boards near (outside of) the fencing to detect SCLTS. Prior to any further action on the pile, a USFWS/CDFW-approved biologist will check the cover boards and fencing to detect presence of SCLTS. At the discretion of the biologist, with biologist on-site to monitor, the debris piles may be moved or dismantled. • For Project Areas within the 50-meter buffer from ponds within the Program Area, debris piles will not be burned, moved or dismantled after the first rain of the year.
MM BIO-1.E	California Red-legged Frog Protective Measures	MM BIO-1.B above, MM BIO-1.D.1-7 Santa Cruz Long-toed Salamander Protective Measures above (to be implemented at the discretion of a USFWS/CDFW-approved biologist), MM BIO-2 Upland Sensitive Habitat Protective Measures and MM BIO-3 Sensitive Aquatic Habitat Protective Measures below. 1. If eucalyptus removal occurs within 100 meters of known or potential habitat: • a USFWS/CDFW-approved biologist will perform pre-construction surveys prior to project commencement. • If CRLF are observed during preconstruction surveys or any time during construction, a USFWS/CDFW-approved biologist or approved biological monitor will be present during all activities. • A USFWS/CDFW-approved biologist or approved biological monitor will inspect the work area each day before construction activities begin. At the discretion of the USFWS/CDFW-approved biologist, a construction monitor may be trained to conduct morning site checks. The approved biologist will remain on-call and will check the Project Area weekly for compliance with all protected measures.
MM BIO-1.F	California Giant Salamander and Santa Cruz Black Salamander Protective Measures	See MM BIO-1.B Crotch's Bumble Bee Protective Measure above, MM BIO-1.D-7 Santa Cruz Long-toed Salamander Protective Measures above (to be implemented at the discretion of a USFWS/CDFW-approved biologist), MM BIO-2 Upland Sensitive Habitat Protective Measures and MM BIO-3 Sensitive Aquatic Habitat Protective Measures below. 1. Prior to construction, a CDFW-approved biologist will conduct a ground survey throughout appropriate microhabitats within and adjacent to work areas by searching moist areas including culverts and under woody debris, cobbles, and small boulders (<20 lbs.). All potential cover objects will be returned to their original position after inspection. If either species is subsequently observed by project personnel, with the approval of CDFW, the approved will relocate the individual to the nearest appropriate habitat.
MM BIO-1.G	Northwestern Pond Turtle Protective Measures	See MM BIO5-1.B Crotch's Bumble Bee Protective Measure above, MM BIO-1.D-7 Santa Cruz Long-toed Salamander Protective Measures above (to be implemented at the discretion of a USFWS/CDFW-

		approved biologist) , MM BIO-2 Upland Sensitive Habitat Protective Measures and MM BIO-3 Sensitive Aquatic Habitat Protective Measures below. 1. Prior to establishing a staging area or access route in potential pond turtle nesting habitat within 100-meters of known/potential aquatic habitat, a CDFW-approved biologist will conduct a preconstruction ground survey for evidence of past or active nests. 2. If staging areas will be established in proximity to occupied aquatic habitat during the turtle nesting period (typically May – July), staging areas will be enclosed with silt fencing that will prevent encroachment. Access roads will not be fenced to allow free movements of turtles and other wildlife.
MM BIO-1.H	Common and Sensitive Nesting Birds Protective Measures	See Protective Measure MM BIO-1.B under Crotch's bumble bee above. 1. If feasible, perform vegetation removal activities outside of breeding bird season to avoid direct harm, mortality, or disturbance to potential nesting bird species. 2. For all project activities initiated during the breeding bird season, or if construction activities lapse for a period of one week or more during breeding bird season, a qualified biologist will conduct a breeding bird survey for nesting birds, including raptors. Surveys will be conducted within 7 days, prior to beginning construction activities and will include all work, staging, access areas, and minimum survey radii surrounding the work area, where accessible or visible, as follows: a. 250 feet for non-raptors; b. 500 feet for small raptors such as accipiters; and c. 1,000 feet for larger raptors such as buteos. 3. If no nesting sensitive or common avian species are observed during breeding bird surveys, no additional measures would be required. 4. If common nesting birds are observed within survey radii from vegetation (eucalyptus trees and invasive non-native weeds) proposed for removal, postpone vegetation removal activities until young have fledged to avoid direct harm or mortality of nesting birds and/or establish buffers depending on the activity and appropriate to the species, such as protective buffers recommended in PG&E et al. (2015). 5. Sensitive bird species, if nesting in or near the Program Area, will be given special consideration and may require additional protective measures as determined through consultation with the relevant agency (USFWS or CDFW). 6. A qualified biologist will monitor active nest sites for construction-related disturbances and adjust protective buffers as necessary to prevent further disruption of nesting activities. 7. Bald and Golden Eagle nests will receive protection year-round. No trees containing eagle nests or within 1,320 feet of an eagle nest will be removed. 8. To stagger the temporal loss of suitable avian cover, shelter, foraging, roosting, and nesting

		habitat, the Program will limit eucalyptus removal to 90 acres/year within the Program Area and 45 acres/year within HUC 12 watersheds.
MM BIO-1.I	Common and Sensitive Roosting Bats Protective Measures	See MM BIO-1.B under Crotch's bumble bee above. 1. To avoid impacts to individual roosts, winter hibernacula, and maternity roosts, during all months, prior to tree removal, a qualified biologist will conduct a pre-construction survey for bats. 2. Authorization from California Department of Fish and Wildlife (CDFW) would be required to evict bats from winter hibernacula if present. 3. If established maternity colonies are found, buffers will be established around the colony to protect pre-volant young from construction noise until the young can fly. Buffer size will be determined through consultation with CDFW. 4. If foliage roosting bats are determined to be present outside of maternity or winter hibernacula season, limbs will be lowered, inspected for bats by a bat biologist, and chipped immediately or moved to a dump site. Alternately, limbs may be lowered and left on the ground until the following day, when they can be chipped or moved to a dump site. No logs or tree sections will be dropped on downed limbs or limb piles that have not been in place since the previous day. 5. If the tree is not limbed or removed within four days of the survey, the survey efforts will be repeated. 6. If no bats are present, remove trees immediately. 7. To stagger the temporal loss of suitable bat roosting habitat, the Program will limit eucalyptus removal to 90 acres/year within the Program Area and 45 acres/year within HUC 12 watersheds.
MM BIO-1.J	San Francisco Dusky-footed Woodrat Protective Measures	1. At least 2 weeks prior to eucalyptus removal activities, a qualified biologist will conduct a preconstruction survey and flag woodrat houses and determine, to the extent feasible, whether the houses are active or inactive [e.g. freshly chewed (green) vegetation is visible on the house, at least some entrances are clear and free of cobwebs, fresh sticks are piled on the top of the house, the house is not composed entirely of old dry sticks and has a flattened shape (has collapsed over time)]. If this determination cannot be made, the house will be presumed to be active. If an active SFDFW house is found during SFDFW surveys, the active house will be designated as "Ecologically Sensitive Area" (ESA) and protected during construction with flagging or silt fencing between the work area and the house. The size of the protective buffer will vary depending on habitat conditions: • If native vegetation (trees and shrubs) are present and will be protected in place during tree removal activities, the buffer can be as little as 5 feet, as long as microclimate conditions and cover are retained, and foraging habitat is abundant near the house. • In sites where little to no native vegetation is initially present, buffer wood rat houses up to 25 feet, at the discretion of the qualified biologist, depending on available resources.

		• In all cases, preserve cover, adjacent food sources, and microhabitat conditions (sun, shade, insulation from heat, cold, and wind). 2. If avoidance of woodrat houses and preservation of resources are not possible, in coordination with CDFW, a qualified biologist will develop and implement a plan to dismantle single houses or relocate colonies if needed. 3. If relocation is required, CDFW would be provided with a site-specific plan to be implemented during the appropriate time of year, when dependent young are not expected to be present in the nest (typically July 1-October 15).
MM BIO-1.K	American Badger Protective Measures	1. At least 2 weeks prior to construction, a qualified biologist will conduct a preconstruction survey of the proposed Project Area/s for suitable badger habitat and dens. If present, implement a buffer from the den, as follows: • Outside of rearing season- 50 feet to 100 feet depending on intervening vegetation, cover, insulation from noise and vibrations. • Within rearing season (March – August or if young are present)- 250 feet.
MM BIO-2	Sensitive Upland Habitats Protective Measures	1. Prior to initiation of Program activities, a qualified biologist will identify all areas to be avoided and/or protected, mark sensitive habitats in the field, and/or a qualified biologist will work with the contractor to avoid sensitive habitats to the extent feasible. 2. Sensitive habitats outside of the work, staging, and access areas will be avoided. 3. Equipment will be staged in ruderal and developed areas to the extent feasible. Confine Program activities, operation of equipment and vehicles, and parking to designated work, staging, and access areas. Restrict and minimize access roads/skid roads into and out of the work areas to the greatest extent feasible. When access through sensitive habitat types is required, limit these access areas in sensitive habitat to 0.25 acres. 4. Removal and disturbance of native vegetation will be minimized. Where access through sensitive habitats is necessary, because no other feasible access route exists, or when native vegetation occurs within or immediately adjacent to eucalyptus stands: • Limbing of native trees and cutting (above the ground) of shrubs will be favored in lieu of removal. Stumps and burls of native vegetation will be retained to allow for re-sprouting following Program completion. • Maintain native understory plants to the extent feasible. Do not grub or grub within sensitive habitat types unless no other alternative exists. • Protect native habitat in place through strategic tree removal, using one or more of the following techniques as appropriate to the site- • Approach the eucalyptus grove from a location where developed, ruderal, or non-native habitat is

		present or eucalyptus is near monospecific. Remove trees working gradually toward the location where native habitat is present. Using the area cleared by tree removal, direct felling (with chains or ropes) toward this opening to avoid impacting native habitat. • When native vegetation is present under the canopy of eucalyptus to be removed, in lieu of felling, limb and lower large limbs to prevent collateral damage to native trees and understory. • Employ girdling instead of felling. 5. When eucalyptus removal will impact riparian vegetation, limit the impact area to 0.5 acres to reduce temporary and indirect impacts. If vegetation removal is required in eucalyptus stands greater than 0.5 acres that will impact riparian habitat, all native riparian vegetation will be cleared by hand, leaving as much of the root wad and base of plants intact. 6. Reserve native edge habitats wherever feasible. 7. Where temporary impacts to sensitive habitats occur, re-vegetate as needed with native seed mix or locally-sourced native plantings. Revegetate all disturbed areas. A qualified biologist will determine a plant palette/seed mix suitable to the location. Adjacent non-native grassland and ruderal habitats may also be planted with native vegetation, preserving edge effects, where appropriate. Details and requirements regarding revegetation of temporary impact areas will presented in a Programmatic Restoration Plan, as outlined in Section 6 of the Biotic Assessment (Attachment B). 8. Prior to staging equipment on-site, clean all equipment caked with mud, soils, or debris from off-site sources or previous project sites to avoid introducing or spreading invasive exotic plant species. All equipment used on the premises should be cleaned prior to leaving the site for future projects. 9. Remove invasive non-native plants from the work area, particularly those designated by Cal-IPC as having high potential for "severe ecological impacts on physical processes, plant and animal communities, and vegetation structure." Temporary impact areas will be restored to pre-Project conditions or better and maintained until Program-specific success criteria have been met. No new non-natives (that were not present prior to the Project) will be allowed to colonize the site. 10. To minimize the risk of entangling and strangling wildlife, erosion control materials containing synthetic (e.g., plastic or nylon) monofilament netting will not be used, and any geo-textile material or filter fabric used will not contain any petroleum-based products. Geotextiles, fiber rolls, and other erosion control measures will be made of loose-weave mesh, such as jute or coconut (coir) fiber. 11. All construction vehicles and equipment will be checked daily for fuel, oil, and hydraulic fluid leaks or other problems that could result in spills of toxic materials. 12. Prohibit smoking or allow workers to smoke in designated areas clear of dry vegetation and

		away from hazardous materials. Dispose of cigarette butts in an appropriate area away from the project site. 13. During construction, all food trash that may attract predators into the work area should be properly contained and removed from the work site on a daily basis. Construction debris and trash should also be properly contained and removed from the work site on a regular basis. See Table 1 below that outlines sensitive resources with potential to occur by supportive habitat types , conditions under which these resources should be considered, and summary of surveys required and protective measures, if detected.
MM BIO-3	Sensitive Aquatic Habitats Protective Measures	1. Implement all protective measures described above for MM BIO-2 related to sensitive upland habitats. 2. Minimize the footprint of disturbance within 100 feet of aquatic/riparian habitats. Avoid permanent impacts within this buffer area and, if feasible, avoid temporary impacts (soil disturbance) within 10 feet of aquatic habitats. 3. Restrict and minimize access/skid roads near aquatic features. 4. All construction vehicles and equipment will remain outside of aquatic features (above the ordinary high-water mark). 5. Water quality, erosion control and sediment control protective measures will be implemented to avoid indirect impacts to all wetlands, and "other waters", (as well as to sensitive fish and amphibians and their designated critical habitats, where present). For work activities with ground disturbance on slopes adjacent to or within aquatic/riparian features, straw wattles will be placed on the slopes or around the perimeter of the work areas, to minimize erosion and sedimentation and prevent transport of sediment downstream. 6. All bare soils created as a result of Program activities will be covered with erosion control materials, including application of mulch on areas with slopes of 30% of less (where suitable to the habitat proposed for restoration), seeding with a native seed mix and/or site stabilization with jute or coconut (coir) fiber rolls and erosion control blankets (on slopes) in a manner that prevents downstream discharges. 7. Fueling, lubrication, maintenance, storage, and staging of vehicles and equipment will take place 100 feet (or as far away as possible) from aquatic features, in a location where fluids or accidental discharges cannot flow into a waterbody, and such activities will not result in a discharge to aquatic features. Secondary containment measures to protect water quality, such as placement of visqueen under equipment, will be implemented if staging closer than 100 feet to an aquatic feature. 8. All materials will be stockpiled at least 50 feet away from waterbodies where feasible. Any materials that are not being actively used will be covered and protected.

		9. The contractor will retain a spill plan and appropriate spill control and clean up materials (e.g., oil absorbent pads and drip pans) on site in case spills or leaks from equipment occur. 10. If construction-related materials reach surface waters, appropriate spill response procedures must be initiated as soon as the incident is discovered. 11. The contractor will visually inspect the Project site and aquatic features adjacent to the Project impact areas following completion of work activities to ensure that the Project is not causing excessive erosion, bank or road instability, or other water quality problems. 12. All equipment, materials, debris, and management practices no longer needed will be removed from the site immediately following Program completion. 13. Herbicides will be applied during the dry season (typically May 1 – October 15, or until the first rain of the season) when the risk of run-off into aquatic features is minimized. Herbicides will not be applied during or within 48 hours of rain events. 14. Approved herbicides (not subject to the Environmental Protection Agency's injunction against the application of herbicide near aquatic habitats for CRLF and those safe for application near aquatic features) are typically permissible within 60 feet of the aquatic habitat of federally-listed amphibians. Reduced buffers may be allowable with the approval of USFWS, if the herbicide will be applied with a backpack sprayer, hand-held applicator, cone nozzle, or for spot treatment. For applications of approved herbicides that are safe near aquatic features, a minimum buffer of 33 feet will be implemented. For all other herbicide types and application techniques, the standard 60-foot buffer will be implemented. See Table 1 below that outlines sensitive resources with potential to occur by supportive habitat types , conditions under which these resources should be considered, and summary of surveys required and protective measures, if detected.
MM BIO-4	Wildlife Movement Protective Measures	1. If silt fencing is installed around the Project Area, ensure breaks in the fencing are present every 50 feet to allow wildlife to move around the Project Area without significant disruption.
Noise		**Description**
MM NOI-1	Limit Construction Hours	Limit construction activity to between the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday, 9:00 a.m. to 5:00 p.m. Saturday in order to avoid noise during more sensitive nighttime hours. Prohibit construction activity on Sundays.
MM NOI-2	Construction Equipment	Require that all construction and maintenance equipment powered by gasoline or diesel engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.
MM	Prohibit unmuffled	Prohibit gasoline or diesel engines from having unmuffled exhaust.

NOI-3	exhaust	
MM NOI-4	Noise-reducing enclosures	Use noise-reducing enclosures around stationary noise-generating equipment capable of 6 dB attenuation.

Table 1 Sensitive Resources with potential to occur by supportive Habitat Types , Conditions under which these resources should be considered, and Summary of Surveys Required and Protective Measures, if detected

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																	
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
HABITATS																					
Sensitive Habitats[1]				X[2]	X			X	X	X	X	X	X	X						Sensitive habitat is in or adjacent to the work area and/or will be used for staging/access.	Assess potential impacts to sensitive habitats. Avoid permanent impacts (tree removal/clearing/grubbing/ ground disturbance/earth movement) to the extent feasible. Minimize the footprint and protect sensitive habitats during work, which may include ESA fencing.

[1] Details on sensitive habitats are provided in the Section 5.2 of this Biotic Assessment.

[2] In discrete locations rare scrub species (e.g. Hooker's manzanita) occur within eucalyptus forest, where maritime chaparral intergrades with eucalyptus.

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
Aquatic Features/ Associated Riparian											X	X	X	X						All Aquatic Features within the Program Area	A USFWS/CDFW-approved biologist will assess potential impacts. When the Project Area is within 50 meters of aquatic habitat, a USFWS/CDFW-approved biologist or approved biological monitor will be present during all activities. When the Project Area is within 200 meters, a USFWS/CDFW-approved biologist or approved biological monitor will conduct a morning site check each day. Do not work during the rainy season.
PLANT SPECIES																					
Arctostaphylos andersonii Santa Cruz manzanita	-	-	1B.2	X		X			X	X										Eucalyptus intergrades with suitable habitat and/or openings in woodland/forest are present.	Conduct a rare plant survey. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant younger/smaller individuals and stockpile seed if larger individuals will be impacted).

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Arctostaphylos hookeri ssp. *hookeri* Hooker's manzanita	-	-	1B.2	X		X			X	X										Eucalyptus intergrades with suitable habitat and/or openings in woodland/forest are present.	Conduct a rare plant survey. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant younger/smaller individuals and stockpile seed if larger individuals will be impacted).
Arctostaphylos pajaroensis Pajaro manzanita	-	-	1B.1							X										Eucalyptus intergrades with suitable habitat and/or openings in woodland/forest are present.	Conduct a rare plant survey. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant younger/smaller individuals and stockpile seed if larger individuals will be impacted).
Calandrinia breweri Brewer's calandrinia	-	-	4.2						X	X										Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed (unlikely), avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (topsoil and seed collection).

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																			
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
Ceanothus rigidus Monterey ceaothus	-	-	4.2	X	X				X	X										Eucalyptus intergrades with suitable habitat and/or openings in woodland/forest are present.	Conduct a rare plant survey. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant younger/smaller individuals and stockpile seed if larger individuals will be impacted).
Centromadia parryi ssp. *congdonii* Congdon's tarplant	-	-	1B.2					X												Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed (unlikely), avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (topsoil and seed collection).
Chorizanthe pungens var. *pungens* Monterey spineflower	FT	-	1B.2		X			X	X	X								X		Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint, coordinate with the USFWS, and implement salvage measures (topsoil and seed collection).

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	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
Chorizanthe robusta var. *robusta* robust spineflower	FE	-	1B.1		X	X		X	X											Suitable habitat (with openings in woodland/forest) is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint, coordinate with the USFWS and implement salvage measures (topsoil and seed collection).
Elymus californicus California bottle-brush grass	-	-	4.3	X	X	X				X	X									Suitable habitat (with openings in woodland/forest) is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant individuals and/or collect topsoil and seed).

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	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Holocarpha macradenia Santa Cruz tarplant	FT	SE	1B.1					X												Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint, coordinate with the USFWS, and CDFW, and implement salvage measures (transplant individuals and/or collect topsoil and seed).
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	-	-	1B.1		X			X	X	X										Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant individuals and/or collect topsoil and seed).

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	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Hosackia gracilis harlequin lotus	-	-	4.2					X						X						Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant individuals and/or collect topsoil and seed).
Leptosiphon grandiflorus large flowered leptosiphon	-	-	4.2		X	X		X	X							X				Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Lomatium parvifolium small-leaved lomatium	-	-	4.2	X	X	X			X		X									Suitable habitat (with openings in woodland/forest) is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																			
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
Monardella sinuata ssp. nigrescens northern curly leaved monardella	-	-	4.2			X		X	X	X										Suitable habitat (with sandy openings in woodland/forest) is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Pedicularis dudleyi Dudley's lousewort	-	SR	1B.2		X	X		X		X										Suitable habitat (with openings in woodland/forest) is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint, coordinate with CDFW and implement salvage measures (collect topsoil and seed).
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah	-	-	4.2		X	X		X		X				X						Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).

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	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
Piperia michaelii Michael's rein orchid	-	-	4.2	X	X	X			X	X										Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect tubers and seed).
Plagiobothrys chorisianus var. chorisianus Choris' popcorn-flower	-	-	1B.2					X	X	X										Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Plagiobothrys chorisianus var. *hickmanii* Hickman's popcorn-flower	-	-	4.2		X	X			X	X		X		X						Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).

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	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Plagiobothrys diffusus San Francisco popcornflower	-	SE	1B.1					X												Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Sanicula hoffmannii Hoffmann's sanicle	-	-	4.3		X	X			X	X										Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Sidalcea malachroides maple-leaved checkerbloom	-	-	4.2		X	X		X	X		X									Suitable sandy habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).

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	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Trifolium buckwestiorum Santa Cruz clover	-	-	1B.1		X	X		X						X						Suitable (moist) habitat, edge habitat along woodlands/forest are adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Trifolium polyodon Pacfic Grove Clover	-	SR	1B.1			X		X						X						Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint, coordinate with CDFW, and implement salvage measures (collect topsoil and seed).
INVERTEBRATES																							
Crotch's bumble bee *Bombus crotchii*	-	SCE	S2					X	X	X					X		X	X	X	Suitable habitat is adjacent to work area and/or will be used for staging/access.	Survey during active colony period (April-August) in advance of work, regardless of what time of year work will be conducted. Consult with CDFW if observed; Protect active nest sites.
FISH SPECIES																							

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	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
Pacific Lamprey *Entosphenus tridentatus*	-	SSC	S3										X							Suitable stream habitat is adjacent to work area.	Assess potential impacts. Avoid direct impacts; Implement erosion/sediment control/water quality protection measures to avoid/minimize indirect impacts. Consult with CDFW.
Riffle Sculpin *Cottus gulosus*	-	SCC	S3/S2										X							Suitable stream habitat is adjacent to work area.	Assess potential impacts. Avoid direct impacts; Implement erosion/sediment control/water quality protection measures to avoid/minimize indirect impacts. Consult with CDFW.
Steelhead (CCC and SCC DPS) Oncorhyynchus mykiss irideus pops. 8 and 9	FT	SSC	S3/S2										X							Valencia Creek or Corralitos Creek is adjacent to the work area.	Assess potential impacts. Avoid direct impacts; Implement erosion/sediment control/water quality protection measures to avoid/minimize indirect impacts. Consult with CDFW and NMFS.
AMPHIBIANS AND REPTILES																					
California giant salamander *Dicamptodon ensatus*	-	SSC	S2S 3			X	X				X		X							Suitable habitat is adjacent to work area and/or will be used for staging/access.	Assess potential impacts. Conduct pre-activity survey within 48 hours of work. Avoid suitable habitat features; Relocate terrestrial individuals as needed with approval of CDFW.

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	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
Santa Cruz black salamander *Aneides niger*	-	SSC	S3								X	X	X	X						Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Assess potential impacts. Conduct pre-activity survey within 48 hours of work. Avoid suitable habitat features; Relocate animals as needed with approval of CDFW.

Santa Cruz long-toed salamander *Ambystoma macrodactylum croceum*	FE	SE/FP	S2	X	X	X	X	X	X	X	X	X	X	X		X	X			All Activities within the Program Area.	Assume presence for all work within the Program Area. A USFWS/CDFW-approved biologist will assess potential impacts. When the Project Area is within 50 meters of known/potential aquatic habitat (**Figure 3**), a USFWS/CDFW-approved biologist or approved biological monitor will be present during all activities. The biologist will conduct a pre-activity visual survey for SCLTS by checking under accessible woody debris and inspect any areas of surface disturbance created during project activities. If observed, with authorization from the USFWS and CDFW, relocate to nearest appropriate habitat. Note that visual surveys are insufficient to report a negative finding since the species is typically underground during the dry season. When the Project Area is within 200 meters, a USFWS/CDFW-approved biologist or approved biological monitor will conduct a morning site visual ground survey each day and be on-call if a SCLTS is observed by project personnel. Do not work during the rainy season. Only minimally-invasive Eucalyptus removal techniques shall be used in groves that provide upland habitat. More aggressive removal methods may be used in dispersal habitat.
California red-legged frog	FT	SSC	S2S		X	X	X	X	X	X	X	X	X	X		X	X			All Activities	Assess potential impacts.

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Rana draytonii			3																	within 1.6 km of known/potential breeding habitat.	Conduct pre-activity survey within 48 hours of work. Do not work during the rainy season. If observed, with authorization from USFWS, relocate animals as needed.
Northwestern pond turtle	FPT	SSC	S3					X			X	X	X	X						All Activities within 100 m of known/potential aquatic habitat.	Assess potential impacts, include both aquatic and nesting habitat. Conduct pre-activity survey within 48 hours of work. If nesting activity is observed in grassland or woodland to be used for laydown or access roads, avoid these areas during during nesting season. If observed in aquatic habitat, avoid direct impacts and/or consult and obtain authorization from CDFW if relocation is required. Implement erosion/sediment control/water quality protection measures to avoid/minimize indirect impacts.
BIRDS																					

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bald eagle *Haliaeetus leucocephalus* (nesting and wintering)	-	SE/FP	S3	X	X	X	X									X				All Activities	Pre-activity survey for nest sites (protected year-round). If observed (unlikely) avoid nest site. Buffer active nest site by 400 meters or consult with USFWS for a reduced buffer of 100-200 meters with biological monitoring.
golden eagle Aquila chrysaetos (nesting and wintering)	-	FP	S3	X	X	X	X	X								X				All Activities	Pre-activity survey for nest sites (protected year-round). If observed (unlikely) avoid nest site. Buffer active nest site by 400 meters or consult with USFWS for a reduced buffer of 100-200 meters with biological monitoring.
northern harrier *Circus cyaneus* (nesting)	-	SSC	S3					X							X					Activities during Breeding Bird Season if suitable habitat is adjacent to work area and/or will be used for staging/access.	Pre-activity survey for breeding activity during the breeding season. If observed, buffer active nest site by 100 meters or consult with CDFW for a reduced buffer with biological monitoring.

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	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
white-tailed kite *Elanus leucurus*	-	FP	S3S 4	X	X	X	X									X				All Activities during Breeding Bird Season	Pre-activity survey for breeding activity during breeding season; Consider adjacent suitable foraging habitat for access and staging areas. If observed, buffer active nest site by 100 meters or consult with CDFW for a reduced buffer with biological monitoring. May be sensitive to disturbance depending on nest site location (e.g. remote/quiet).
olive-sided flycatcher *Contopus cooperi* (nesting)	BCC	SSC	-	X	X	X	X				X									All Activities during Breeding Bird Season	Pre-activity survey for nest site during breeding season. If observed, buffer nest site by 20 meters or consult with CDFW and Service for a reduced buffer with biological monitoring.
grasshopper sparrow *Ammodramus savannarum* (nesting)	-	SSC	S3					X												Activities during Breeding Bird Season if suitable habitat (grassland) is adjacent to work area and/or will be used for staging/access.	Pre-activity survey during breeding season. If observed, buffer nest site by 20 meters or consult with CDFW for a reduced buffer with biological monitoring

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Lawrence's goldfinch *Spinus lawrencei* (nesting)	BCC	-	S3S 4		X				X	X	X									Activities during Breeding Bird Season if suitable habitat is adjacent to work area and/or will be used for staging/access.	Pre-activity survey for breeding activity during breeding season. If observed, buffer nest site by 20 meters or consult with CDFW for a reduced buffer with biological monitoring.
oak titmouse *Baeolophus inornatus* (nesting)	BCC	-	-	X	X	X										X				All Activities during Breeding Bird Season	Pre-activity survey for nest site (cavity nest) during breeding season. If observed, buffer nest site by 15 meters or consult with the Service for a reduced buffer with biological monitoring.
Allen's hummingbird *Selasphorus sasin* (nesting)	BCC	-	-	X					X	X	X				X	X	X			All Activities during Breeding Bird Season	Pre-activity survey for nest site during breeding season. If observed, buffer nest site by 15 meters or a reduced buffer with biological monitoring.
Western screech-owl *Megascops kennicottii* (nesting)	BCC	-	-	X	X	X	X									X				All Activities during Breeding Bird Season.	Pre-activity survey for nest site (cavity nest) during breeding season. Night survey or acoustic monitoring devices may be required. If observed, buffer nest site by 60 meters or a reduced buffer with biological monitoring.

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Nuttall's woodpecker *Picoides nuttallii* (nesting)	BCC	-	-	X	X	X										X				All Activities during Breeding Bird Season	Pre-activity survey for nest site (cavity nest) during breeding season. If observed, buffer nest site by 15 meters or a reduced buffer with biological monitoring.
Wrentit *Chamaea fasciata* (nesting)	BCC	-	-						X	X	X									Activities during Breeding Bird Season if suitable habitat is adjacent to work area and/or will be used for staging/access	Pre-activity survey for breeding activity during breeding season. If observed, buffer nest site by 20 meters feet or a reduced buffer with biological monitoring.
California thrasher *Toxostoma redivivum* (nesting)	BCC	-	-						X	X	X									Activities during Breeding Bird Season if suitable habitat is adjacent to work area and/or will be used for staging/access	Pre-activity survey for breeding activity during breeding season. If observed, buffer nest site by 20 meters or a reduced buffer with biological monitoring.
Yellow warbler *Setophaga petechia* (nesting)	-	SSC	S3								X									Activities during Breeding Bird Season if suitable habitat is adjacent to work area and/or will be used for staging/access	Pre-activity survey for breeding activity during breeding season. If observed, buffer nest site by 20 meters or consult with CDFW for a reduced buffer with biological monitoring.

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	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
Nesting Birds	-	CFGC	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	All Activities during Breeding Bird Season	Pre-activity survey for breeding activity during breeding season. If observed, buffer nest site accordingly depending on species or by a reduced buffer with biological monitoring.
MAMMALS																						
Long-legged myotis *Myotis volans*	-	-	HP	X	X	X	X												X	All Activities	Pre-activity survey for roosting bats (bat roost feature assessment, emergence, and/or acoustic monitoring). If observed, avoid and buffer maternity roosts and winter hibernacula. For other roost sites implement protective measures.
Western red bat *Lasiurus blossevillii*	-	SSC	HP	X	X	X					X									All Activities	Pre-activity survey for roosting bats (bat roost feature assessment, emergence, and/or acoustic monitoring). If observed, implement protective measures. Consult with CDFW.

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Pallid bat *Antrozous pallidus*	-	SSC	HP	X	X	X	X												X	All Activities	Pre-activity survey for roosting bats (bat roost feature assessment, emergence, and/or acoustic monitoring). If observed, avoid and buffer maternity roosts and winter hibernacula. For other roost sites implement protective measures. Consult with CDFW.
Townsend's big-eared bat	-	SSC	HP	X	X	X	X												X	All Activities	Pre-activity survey for roosting bats (bat roost feature assessment, emergence, and/or acoustic monitoring). If observed, avoid and buffer maternity roosts and winter hibernacula. For other roost sites implement protective measures. Consult with CDFW.
common roosting bat species	-	CFGC	-	X	X	X	X				X					X			X	All Activities	Pre-activity survey for roosting bats (bat roost feature assessment, emergence, and/or acoustic monitoring). If observed, avoid and buffer maternity roosts and winter hibernacula or coordinate with CDFW. For other roost sites implement protective measures.

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
SF dusky-footed woodrat *Neotoma fuscipes annectens*	-	SSC	-	X	X	X			X	X	X				X	X	X		X	All Activities	Pre-activity survey for stick houses including in adjacent suitable habitat identified for access and staging. If observed, avoid houses or develop a relocation plan with the approval of CDFW to be implemented during the appropriate time of year (typically late summer/early fall).
American badger *Taxidea taxus*		SSC			**X**	X		X	X	X										Suitable habitat (open stages with friable soils) is within 500 feet of the work area and/or will be used for staging/access.	Assess potential impacts. Conduct pre-activity survey within 2 weeks of work. If burrows are observed, avoid and buffer by 50-100 feet outside of rearing season, or by 250 feet during rearing season (March-August) or until young are independent.

NOTES:

Federal Status

FE = Endangered: Any species which is in danger of extinction throughout all, or a significant portion of its range (USFWS 2025a).

FT = Threatened: Any species, which is likely to become an endangered species within the foreseeable future throughout all, or a significant portion of its range (USFWS 2025a).

FC = Candidate: Candidate for listing under the federal endangered species act. Candidate species are being reviewed by USFWS to determine if listing is warranted or have been deferred for higher priority listings.

FPT = Proposed Threatened: Proposed for listing under the federal Endangered Species Act.

BCC = Species of migratory nongame birds that are considered to be of concern in the United States because of (1) documented or apparent population declines, (2) small or restricted populations, (3) dependence on restricted or vulnerable habitats (USFWS 2008).

State Status

SE = Endangered: A native species or subspecies of animal which is in serious danger of becoming extinct throughout all, or a significant portion of its range, due to loss of habitat, change in habitat, over exploitation, predation, competition and/or disease (CDFW 2025a).

SR =

ST = Threatened: A native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Fish & G. Code, §2067 [CDFW 2025a, Meese 2018 (tricolored blackbird-listing pending)]

SC E= Candidate Endangered: A species that is being considered for listing and is temporarily afforded the same protections as listed species.

SSC = CDFW Species of Special Concern: Designated because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction (CDFW 2025b, CDFW CNDDB 2025).

FP = Fully Protected[3]: State's initial protection for animals that were rare or faced possible extinction. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

CFGC = California Fish and Game Code (2025):
3503 - Protects active nests and eggs of birds from take, possession, or needless destruction
3503.5. - Protects birds of prey (Orders Falcinoformes and Strigiformes)
Section 86; 2000; 2014; 3007; 4150, and Title 14 CCR - Protects non-listed bat species and their roosting habitat, including individual roosts and maternity colonies.

Other

1B.1 = California Native Plant Society (CNPS) List (2025) - Rare, Threatened, or Endangered in California and elsewhere, Seriously endangered in California.

1B.2 = CNPS List (2025) - Rare, Threatened, or Endangered in California and elsewhere, Fairly endangered in California.

4.2 = CNPS List (2025) - Plants of limited distribution: a watch list, Fairly endangered in California.

4.3 = CNPS List (2025) - Plants of limited distribution: a watch list, Not very endangered in California.

HP = "High Priority" on the Western Bat Working Group's (WBWG) Western Bat Species Regional Priority Matrix (2017).

NatureServe Ranking[4]: S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.
S4 = Apparently Secure – At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

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[3] More information on Fully Protected species and the take provisions can be found in the Fish and Game Code, (birds at §3511, mammals at §4700, reptiles and amphibians at §5050, and fish at §5515). Additional information on Fully Protected fish can be found in the California Code of Regulations, Title 14, Division 1, Subdivision 1, Chapter 2, Article 4, §5.93.

[4] Originally developed by The Nature Conservancy and now maintained and recently revised by NatureServe. Includes a **Global rank** (G-rank), over the taxon's entire distribution, and a **State rank** (S-rank), over its state distribution. For subspecies and varieties, there is also a "T" rank describing the global rank for the infraspecific taxon. Criteria are used to assign element ranks, from G1 to G5 for the Global rank and from S1 to S5 for the State rank, taking into account rarity, threats, and trends (CDFW CNDDB 2025).

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Attachment B

Biotic Assessment

Biotic Assessment for the proposed

South County Habitat Restoration Program

Santa Cruz County, CA

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1.0 INTRODUCTION

This report presents the findings of a program level assessment of aquatic and biological resources with potential to occur within the South County Habitat Restoration Program (Program) Area.

The Resource Conservation District of Santa Cruz County (RCD) is working with the County of Santa Cruz (County) Planning Department (Planning) and California Department of Fish and Wildlife (CDFW) to develop a comprehensive program for the large-scale removal of eucalyptus in South Santa Cruz County (South County) to reduce the risk of catastrophic wildfire and property damage, restore oak woodland habitat and aid in the recovery of the Santa Cruz long-toed salamander (SCLTS) and other endemic wildlife The principal objective of the program is to work within "neighborhood" stands of eucalyptus within the greater 11,585-acre Program Area to remove full eucalyptus stands, which will reduce the effort and cost of on-going maintenance, result in the restoration of large patches of habitat, and increase habitat connectivity.

The RCD will be responsible for all aspects of the program, including but not limited to providing planning, technical, and regulatory oversight and cost share funding for Program participants interested in voluntarily improving the habitat on their property by removing eucalyptus trees that threaten property damage through wildfire, and the topping and breaking of limbs in high wind events. In addition to reducing risks to property, eucalyptus removal and subsequent restoration and/or enhancement of native habitats will support the re-establishment and expansion of native ecosystems, including for the recovery of the federally Endangered and State Fully Protected SCLTS.

The Program is intended to provide a streamlined regulatory mechanism for eucalyptus removal and native habitat restoration in the southern portion of Santa Cruz County (**Figure 1**). The RCD would oversee implementation of the Program to ensure compliance with the California Environmental Quality Act (CEQA), local, state, and federal regulations, and permitting requirements. The Program, developed in concert with the County, would comply with all local regulations protecting biological resources. The RCD would assist with additional interagency coordination, as required, based on the presence of and potential impacts to sensitive environmental resources requiring state and federal agency consultation (e.g. aquatic features, state or federally-listed species, bat maternity roosts, and/or San Francisco dusky-footed woodrat houses).

The purpose of this report is to assess potential impacts to sensitive biological resources that are or may be present in the Program Area. This report identifies protective measures to implement during individual eucalyptus removal projects that fall within the Program to avoid and minimize impacts to sensitive biological resources. In addition, this report identifies general Program-level guidelines for restoration and enhancement of native habitats, based on the existing conditions of the eucalyptus trees/groves at the time of removal.

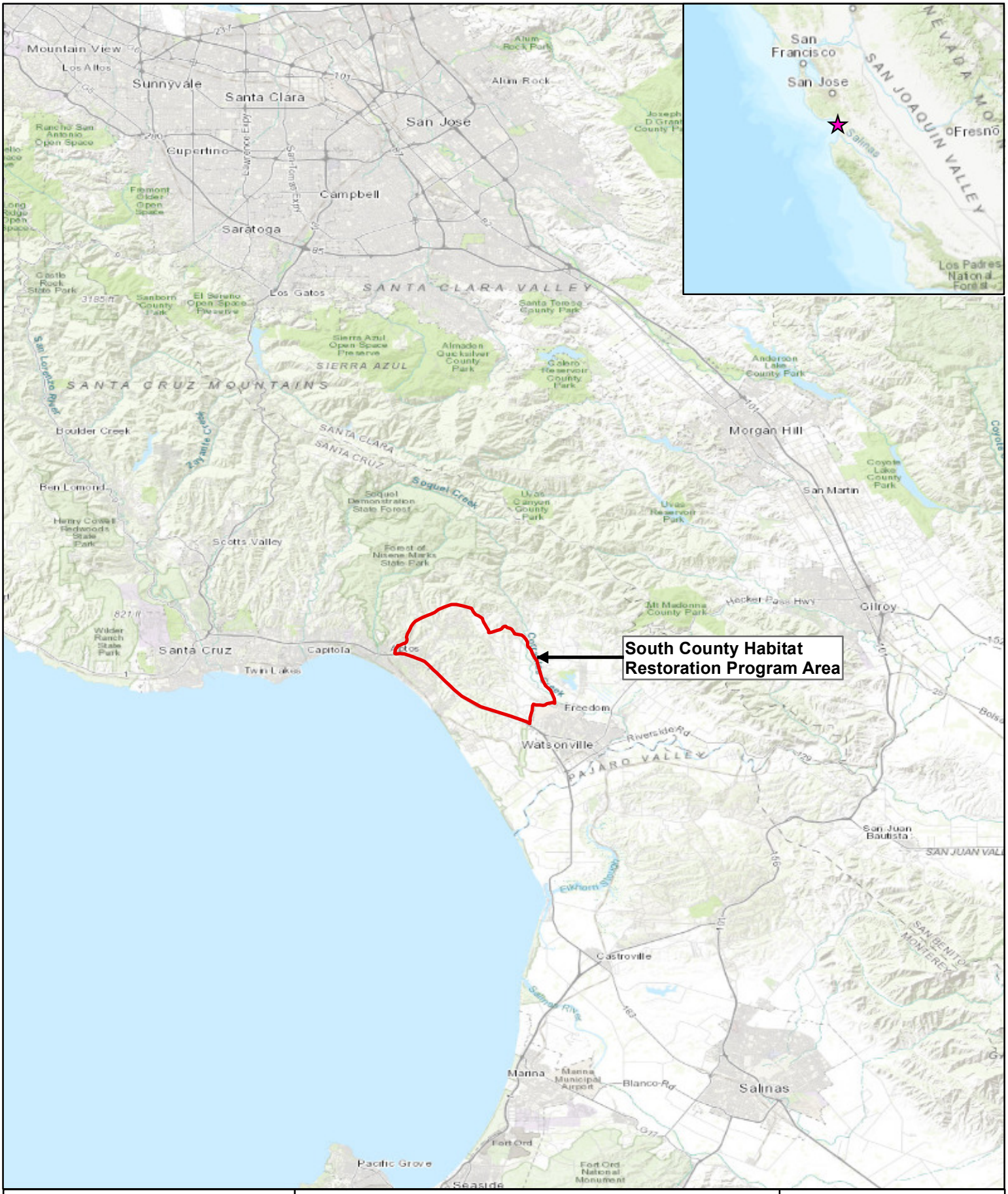


Figure 1.

South County Habitat Restoration Program Area
Santa Cruz County, CA

1.1 PROGRAM AREA LOCATION AND EXISTING CONDITIONS

The 11,585-acre Program Area is located in the unincorporated communities of Day Valley, Aptos Hills-Larkin Valley, and Corralitos (**Figure 1**). The Program Area is roughly bounded by Trout Gulch Road to the northwest and incorporates Day Valley, Pleasant Valley, and portions of Corralitos to the north and northeast. From Amesti Road in the east, the Program Area boundary cuts through agricultural fields to the junction of Freedom Blvd and Buena Vista Drive, the southeast corner of the Program Area to extend to the intersection of Manfre Road with State Route 1, the southern corner of the Program Area. State Route 1 forms the southwestern boundary of the Program Area, capturing the Larkin Valley-Aptos Hill communities east of the highway.

The Program Area encompasses a diverse landscape of rural residential properties, agricultural lands, mixed woodlands, and riparian corridors. This area is characterized by a patchwork of natural and developed habitats, many of which retain ecological features suitable for sensitive species and some of which are sensitive habitats, as defined by the County of Santa Cruz, including San Andreas Oak Woodland habitat and SCLTS habitat. The geographic extent of the Program Area includes these sensitive habitats to address additional permitting requirements associated with these resources from the County from the County, as well as from USFWS and CDFW for SCLTS.

Topographically, the Program Area includes gently sloping valleys, intermittent and perennial drainages, and low-lying ridgelines. Vegetation types include redwood forest, mixed evergreen forest, oak woodland and oak savannah, coastal scrub, chaparral, non-native and native grasslands, aquatic features (ponds, marshes, streams, and wetlands) and associated riparian vegetation, as well as ruderal habitats. Agricultural fields, orchards, and vineyards are prominent throughout the Corralitos and Pleasant Valley regions, interspersed with residential development. These land uses and vegetative communities influence both habitat quality and connectivity for sensitive species.

Stands of blue gum eucalyptus (*Eucalyptus globulus*) are prevalent within the Program Area. Blue gum is a problematic exotic tree species that is well established and continues to expand into areas that were formerly grasslands and oak woodlands. Extensive, in some places almost monospecific groves of blue gum eucalyptus contribute to habitat degradation, have displaced native upland habitat for SCLTS and other endemic wildlife, thereby limiting opportunities for recovery of the species, and pose significant hazards to property. Eucalyptus trees, due to the nature of the bark and oils, are highly flammable. Eucalyptus trees are also fire-adapted; fire causes the trees to release a massive drop of seeds. Notably, portions of the Program Area have experienced periodic disturbance from natural events such as high windstorms and natural and human caused wildfires, resulting in property damage and ongoing degradation and alterations to both ecological and built environments.

Despite these disturbances, the Program Area retains substantial biological value, especially in areas where natural habitat remains contiguous or where targeted restoration could enhance ecological function and support species recovery.

2.0 METHODS

2.1 REVIEW OF LITERATURE AND DATA SOURCES

EcoSystems West and Biosearch biologists reviewed literature and special-status species databases to identify habitat types, and sensitive habitats, plants, and wildlife species known or with potential to occur in the Program Area. Sources consulted include:

- Santa Cruz and Santa Clara Joint Fine Scale Vegetation Mapping (Fine Scale Veg Mapping)[1]:
- CNDDB occurrence records (2025a) and resource maps from the Biogeographic Information and Observation System (BIOS) (CNDDB 2025b) for the Watsonville West USGS 7.5-minute quadrangle and (for plants) seven surrounding quadrangles;
- USGS quadrangle occurrence records in the California Native Plant Society's (CNPS) *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2025) for the Watsonville West quadrangle and the seven surrounding quadrangles;
- Local and regional floras (Thomas 1961; Munz and Keck 1973; Hickman 1993; Baldwin *et al*. 2012);
- Local regional experts on sensitive wildlife species (Alley 2025); and
- Other literature and databases that contained sensitive wildlife species lists for the vicinity, such as Bat Conservation International (2025), ebird (2025), CalFish (2025), Western Bat Working Group (2017), and Xerces 2025.

Sources consulted for current conservation status information include U.S. Fish and Wildlife Service (USFWS) (2025a,b,c) for species listed under the federal Endangered Species Act (ESA) (including federal Proposed and Candidate species), and California Department of Fish and Wildlife (CDFW) (2025a,b,c) for species listed under the California Endangered Species Act (CESA) as 'Threatened' or 'Endangered' or listed as 'Species of Special Concern'. We also included those species state ranked by NatureServe as critically imperiled, imperiled, and vulnerable (Faber-Langendoen 2012, CDFW CNDDB 2025).

For special-status plants, we reviewed the CNPS *Inventory* (Tibor 2001; CNPS 2025): List 1A (Plants Presumed Extinct in California), List 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere), or List 2 (Plants Rare, Threatened, or Endangered in California, But More Common

[1] As part of a larger statewide effort, the Santa Cruz and Santa Clara Joint Fine Scale Vegetation Mapping was developed (and is maintained [2023]) by a consortium of public and private entities and organizations, including:

- state agencies (CALFIRE, California Department of Parks and Recreation, CDFW Vegetation Classification and Mapping Program)
- local governments (Santa Cruz and Santa Clara County),
- utilities (Santa Clara Valley Water District, San Francicso Public Utilities Commission),
- open space and conservation districts and networks (San Mateo County Resource Conservation District, Midpeninsula Regional Open Space District, Santa Clara Valley Open Space Authority and Santa Cruz Mountains Stewardship Network), and
- private entities (Tukman Geospatial LLC).

Elsewhere). We also reviewed List 3 (Plants About Which We Need More Information -- A Review List) and List 4 (Plants of Limited Distribution -- A Watch List) of the CNPS *Inventory*[2] (Tibor 2001; CNPS 2025).

For wildlife species, we reviewed the USFWS list of *Birds of Conservation Concern* (BCC) (USFWS 2021) and the list of bat species considered 'High Priority' by the Western Bat Working Group (WBWG) (2017).

Based on information from the above sources, we developed target lists of special-status plants and wildlife species with potential to occur in the Program Area. Our desktop assessment followed CDFW (CNDDB 2025a,b) and other standard survey protocols. We reviewed distribution information for sensitive species to determine which species would have the potential to occur in or near the Program Area and which species could be eliminated from consideration, based on soils, vegetation and habitat types, locations of known occurrences, dispersal distances (for wildlife), and professional knowledge of the region and local sensitive species.

2.2 Field Visits

EcoSystems West and Biosearch biologists conducted reconnaissance field visits of 40 representative properties within the Program Area, where public and private landowners provided access (16 parcels) or where sites could be assessed from the roadside (24 parcels). The purpose of the field visits was to obtain an overview of eucalyptus stands within the Program Area that could be subject to the Program's removal and restoration activities. Biologists used a standard datasheet for each site and collected information on:

- access to the site and eucalyptus tree/s or grove;
- general topography, slope, aspect, and soils;
- the size, structure, and density of the eucalyptus stand;
- accuracy of the Fine Scale Veg Mapping layer;
- the adjacent and surrounding habitat types;
- presence of native trees, scrub species, and understory plants within or adjacent to the eucalyptus;
- presence of invasive plant species;
- incidental observations of rare plants (if present); and
- incidental observations of common and sensitive wildlife species.

The biologists ground-truthed the Fine Scale Veg Mapping layer to determine if it could be used during Program implementation to relatively accurately predict the extent of eucalyptus stands as well as adjacent native and sensitive habitat types. Larger discrepancies were noted, when present.

[2] List 3 and List 4 plant species are considered to be of lower sensitivity, and generally do not fall under specific state or federal regulatory authority. Specific mitigation considerations are generally not required for species in these last categories (Tibor 2001; CNPS 2023).

Biosearch biologists relied on previous surveys within the Program Area for a more detailed understanding of the use of aquatic and upland habitats by sensitive amphibian species, particularly SCLTS.

2.3 Establishment of Restoration Potential Strata

Information obtained during literature review and field visits was used to establish a strata of restoration potential. EcoSystems West biologists established a set of three stratum that would be used to generally characterize the potential of given parcel for restoration. The strata were based largely on the presence or absence of native plant species within or immediately adjacent to the eucalyptus stands, the presence or absence of intact native habitats adjacent to the eucalyptus stands, and the presence of invasive plant species within or adjacent to the eucalyptus stands.

3.0 REGULATORY BACKGROUND

Federal, state, and local regulations have been enacted to provide for the protection and management of sensitive biological and water resources. Those pertinent to the Project are summarized below.

3.1 Federal Regulations

Federal Endangered Species Act

The provisions of the federal Endangered Species Act (ESA) of 1973 (Title 16 United States Code, Section 1531 *et seq*., as amended) protect federally-listed Threatened and Endangered species and their habitats from unlawful "take."[3] Activities that may result in "take" are regulated by the USFWS for terrestrial federally-listed species. Listed species are taxa for which proposed and final rules have been published in Federal Register (USFWS 2025a, 2025b). Candidate species are not afforded any legal protection under the federal ESA but typically receive special attention from federal and state agencies during the environmental review process (USFWS 2025c).

The federal ESA or its implementing regulations do not prohibit take of listed plant species. However, federal agencies cannot undertake activities that would jeopardize the continued existence of a threatened or endangered plant. In addition, the removal of threatened or endangered plants may be a violation of the federal ESA under certain circumstances, if the action is not in compliance with state law.

For projects with federal involvement (i.e., funded, authorized, or carried out by a Federal agency), permits for "take" may be obtained through coordination and interagency consultation with the USFWS pursuant to Section 7. Designated "Critical Habitat" for plants or animals, determined and published in

[3] Section 3(18) of the FESA defines "take" to mean to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Service regulations (50 Code of Federal Regulations [CFR] 17.3) define "harm" to include significant habitat modification or degradation that actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. "Harassment" is defined by USFWS as an intentional or negligent action that creates the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.

the Federal Register as a formal rule, also receives protection under Section 7 of the ESA. For actions with no federal nexus, consultation with USFWS takes place under 10(a)(1)(B) of the federal ESA.

Migratory Bird Treaty Act

All migratory birds and their nests are federally protected under the Migratory Bird Treaty Act of 1918 (MBTA) (Title 16 United States Code, Section 703-712 as amended; 50 Code of Federal Regulations Section 21; and 50 CFR Section 13) (and by California Department of Fish and Game Code provisions that support the act). The MBTA makes it unlawful to "take" any migratory bird or raptor listed in the 50 CFR Section 10, including their nests, eggs, or products.

Birds of Conservation Concern

The USFWS *Birds of Conservation Concern* (BCC) (USFWS 2021) was developed to fulfill the mandate of the 1988 amendment to the Fish and Wildlife Conservation Act [Public Law 100-653 (102 Statute 3825)] to protect migratory nongame birds that without additional conservation action are likely to become candidates for listing under the ESA. The overall goal is to identify those bird taxa (beyond those already designated as federally threatened or endangered) that represent the highest conservation priorities of the USFWS in order to stimulate coordinated, collaborative and proactive conservation actions. Factors considered include: population size, breeding and non-breeding distribution, threats, population trends, relative density (USFWS 2021). These species typically meet the criteria of the CEQA Guidelines and are considered during environmental review.

Bald and Gold Eagle Protection Act

The Bald and Gold Eagle Protection Act of 1940 (16 U.S.C. 668-668d, 54 Stat. 250) as amended, provides for the protection of the bald eagle and the golden eagle by prohibiting the taking, possession, and commerce of such birds, their eggs, and their nests except under certain specified conditions. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

Executive Order 13112 - Invasive Species

This order enlists federal agencies to prevent the introduction of invasive species, provide for their control and minimize the economic, ecological, and human health impacts that invasive species cause. In addition, federal agencies are required, when feasible, to restore native species and ecosystems and promote public awareness about invasive species.

Wetlands and Waters of the U.S.

Wetlands are defined by the USACE as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (EPA, 40 CFR 230.3, and CE 33 CFR 328.3).

The USACE uses three criteria to delineate wetlands: the presence of (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the USACE Manual, evidence of at least one positive wetland indicator from each parameter must be found in order to make a positive determination.

Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation, such as lakes and ponds, or convey water, such as streams, are considered "other waters." Along the central California coast, these other waters can include intermittent and ephemeral streams, as well as lakes and rivers. Other waters are identified by the presence of an ordinary high-water mark[4], a defined river or stream bed or bank, or by the absence of emergent vegetation in ponds or lakes.

Wetlands and other waters of the U.S., including streams, ponds and lakes, are regulated by the USACE and the Regional Water Quality Control Board (Regional Board) under Sections 401 and 404 of the Clean Water Act.

Federal Clean Water Act (Section 404). Under Section 404 of the Clean Water Act, the USACE is responsible for regulating the discharge of fill material into waters of the U.S. The term "waters" includes wetlands and other waters that meet specific criteria as defined in the CFR (EPA, 40 CFR 230.3, and CE 33 CFR 328.3). In general, a permit must be obtained before fill can be placed in wetlands or other waters of the U.S. The type of permit depends on the amount of acreage and the purpose of the proposed fill, subject to the discretion of the USACE.

Federal Clean Water Act (Section 401). Section 401 of the Clean Water Act (CWA) assigns overall responsibility for water quality protection to the State Water Resource Control Board and directs the nine statewide Regional Boards to develop and enforce water quality standards within their boundaries. A 401 Certification is required from the Regional Board whenever improvements are made within Jurisdictional Waters of the U.S.

Executive Order 11990. Executive Order 11990 (42 FR 26961, 3 CFR, 1977 Comp., p. 121) mandates that federal or federally assisted projects and programs minimize the destruction, loss, or degradation of wetlands and avoid new construction in wetlands, accounting for public health and safety, maintenance of natural systems, and other public interests.

3.2 STATE REGULATIONS

California Environmental Quality Act (CEQA)

Based on provisions of Section 15380 of the *CEQA Guidelines*, plants and animals with the following protected status are addressed in CEQA documents for proposed projects: federally-listed Endangered or Threatened species under the FESA, federal Proposed and Candidate species, and species listed by the state of California as Endangered, Threatened, or Rare under the California Endangered Species Act (CESA) or California Native Plant Protection Act (NPPA).

In addition, under Section 15380(d) of the *CEQA Guidelines*, a species not included on any list recognized by the state "shall nevertheless be considered rare or endangered if the species can be

[4] An ordinary high-water mark is defined as the natural line on the shore established by fluctuations of water.

shown to meet the criteria" for listing. The CDFW, USFWS, as well as non-governmental organizations maintain independent lists of species with designated conservation status that meet the *CEQA Guidelines* criteria for consideration. Based on provisions of Section 15380(d) of the *CEQA Guidelines*, lead agencies, in making a determination of impact significance, typically treat non-listed plant and animal species as equivalent to listed species if the non-listed species satisfy the minimum biological criteria for listing. In assigning "impact significance" to populations of non-listed species, analysts generally consider factors such as population-level effects, proportion of the taxon's range affected by a project, regional effects, and impacts to habitat features. CDFW recommends considering these species during analysis of proposed project impacts to protect declining populations, and to avoid the need to list them as threatened or endangered in the future. The CEQA Guidelines direct lead agencies to consider impacts of the proposed project on individual animals, communities, populations, range, and habitat of species that meet the CEQA criteria.

The CEQA Guidelines also direct project proponents to assess and mitigate for impacts to sensitive natural communities identified in local or regional plans, policies, regulations or identified by CDFW or USFWS, including wetlands.

In addition, the CEQA Guidelines include consideration of substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or the use of native wildlife nursery sites.

Finally, CEQA requires that local policies or ordinances protecting biological resources, Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plan be considered during environmental review.

California Endangered Species Act

The California Endangered Species Act (CESA) protects native plant and animal species (and their habitats) "in danger of, or threatened with, extinction because their habitats are threatened with destruction, adverse modification, or severe curtailment, or because of overexploitation, disease, predation, or other factors" (California Fish and Game Code [CFGC] 1984, Section 2050-2116). The CESA prohibits the "take"[5] of state-listed endangered, threatened, and candidate species. The CDFW maintains lists of Endangered, Threatened, and Rare plants (CDFW 2023a) and Endangered and Threatened animals (CDFW 2023b), as designated by the California Fish and Game Commission and under the California Native Plant Protection Act (NPPA)(1977). The Habitat Conservation Planning Branch of CDFW administers the state's rare species program. In addition to recognizing three levels of endangerment, CDFW can afford interim protection to candidate species while the California Fish and Game Commission reviews them. Habitat degradation or modification is not expressly included in the definition of "take" under the CFGC, but CDFW has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification."

California Native Plant Protection Act

[5] The CESA defines "take" as hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (CFGC Section 86).

The California NPPA (CFGC Section 1900 - 1913) was enacted in 1977 and allows the California Fish and Game Commission to designate plants as rare or endangered. The NPPA limits the circumstances in which endangered or rare native plants may be taken. Project permitting and approval requires compliance with NPPA.

California Native Plant Society Inventory

The CNPS prepares and regularly updates an *Inventory of Rare and Endangered Vascular Plants of California*. In general, CDFW qualifies for legal protection under CEQA those plant species with a California Rare Plant Rank (CRPR) of List 1A (Plants Presumed Extinct in California), List 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere) or List 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere) of the CNPS *Inventory* (CNPS 2005, 2023). Species on CNPS List 3 (Plants About Which We Need More Information--A Review List), or List 4 (Plants of Limited Distribution--A Watch List) are considered to be of lower sensitivity, and generally do not fall under specific federal or state regulatory authority. Specific mitigation considerations are not generally required for species in these two categories.

Species of Special Concern

The CDFW maintains a list of animal "Species of Special Concern," most of which are species whose breeding populations in California may face complete destruction or extirpation (Bolster 1998, Shuford and Gardali 2008, Moyle et al. 2015, Thompson et al. 2016, CDFW 2023c, CDFW CNDDB 2023). Although these species have no legal status under the CESA, CDFW recommends considering these species during analysis of proposed project impacts to protect declining populations, and to avoid the need to list them as threatened or endangered in the future. These species may "be considered rare or endangered [under CEQA] if the species can be shown to meet the criteria."

California Fish and Game Code and California Code of Regulations

California Fish and Game Code (CFGC) protects the active nests and eggs of birds from take, possession, or needless destruction (3503), and prohibits the take, possession, or destruction birds of prey (orders Falcinoformes and Strigiformes) and their eggs and nests (3503.5). The CFGC (Sections 86; 2000; 2002; 2014; 3000-3012; 4150) and several sections under Title 14 of CCR protect non-listed bat species and their roosting habitat, including individual roosts and maternity colonies (14 CCR Section 472). Section 86 of CFGC generally defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Other CFGC sections prohibit the willful take, capture, confinement, possession, or destruction of particular wildlife species, including bats and other non-game mammals. The CCR Title 14 provisions prohibit the take of nongame birds and mammals.

Fully Protected Species

The CFGC contains lists of vertebrate species designated as "Fully Protected" (CFGC 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], and 5515 [fish]). This classification was the state's initial effort in the 1960's to identify and provide protection to those animals that were rare or faced possible extinction. Fully Protected species generally may not be taken or possessed at any time and no licenses or permits may be issued for their take except pursuant to an approved Natural Community

Conservation Plan (NCCP) or for relocation of bird species, the protection of livestock, or the collection of those species necessary for scientific research. Impacts on these species are also considered under CEQA.

Western Bat Working Group Lists

The WBWG maintains a region-by-region matrix of the status of bat species throughout their western North American range. Bats that are designated as "High Priority" by the WBWG are "imperiled or are at high risk of imperilment" based on available information on distribution, status, ecology, and known threats (WBWG 2017). Bats may also be designated as medium-or low-priority. High Priority bat species qualify for legal protection under Section 15380(d) of the *CEQA Guidelines*.

Sensitive Habitats

Sensitive habitats include CDFW Sensitive Natural Communities (rank of S1 – S3), riparian corridors,[6] wetlands, and habitats for species that are protected under FESA, CESA, NPPA, or other rare species (CDFW 2023d). Sensitive habitats may also include areas of high biological diversity, areas providing important wildlife habitat, and vegetation types that are rare or unique to the region. CEQA also considers impacts to natural communities identified as sensitive in local and regional plans, regulations, and ordinances.

Wetlands and Waters of the State

CDFW Lake and Streambed Alteration Agreement. Jurisdictional authority of CDFW over relatively permanent bodies of standing or flowing water is established under Sections 1600-1616 of the CFGC, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The CFGC stipulates that "an entity may not substantially divert or obstruct the natural flow of, or substantially change…the bed, channel, or bank of, any river, stream, or lake" without notifying CDFW, incorporating necessary mitigation, and obtaining a Lake and Streambed Alteration Agreement. Any work which takes place below the break in bank or within the adjacent riparian canopy would be under the jurisdictional authority of CDFW.

CDFW has the opportunity to review projects and issue project conditions under CEQA and is also responsible for commenting on projects requiring USACE permits under the Fish and Wildlife Coordination Act of 1958. Federal lead agencies may also elect to notify CDFW according to Section 1602 and comply with the conditions and recommendations issued under this mechanism.

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[6] A universally accepted definition of riparian habitat is not currently available; however, USFWS defines riparian areas as "plant communities contiguous to and affected by surface and subsurface hydrologic features of perennial or intermittent lotic and lentic water bodies (rivers, streams, lakes, or drainage ways). Riparian areas have one or both of the following characteristics: 1) distinctively different vegetative species than adjacent areas, and 2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms. Riparian areas are usually transitional between wetland and upland" (USFWS 2019). See also Riparian Habitats under the Local Regulations section.

Porter Cologne Water Quality Control Act. The Porter-Cologne Water Quality Act assigns overall responsibility for water quality protection to the State Water Resources Control Board (SWRCB), and directs the nine statewide Regional Boards, who are tasked to develop and enforce water quality standards within their boundaries (SWRCB 2023). Under California state law, "Waters of the State" pertains to "any surface water or groundwater, including saline waters, within the boundaries of the state." As a result, water quality laws and permitting authority apply to both surface and groundwater. In the absence of a federal permit requirement, impacts to waters of the state, including wetlands, require a Waste Discharge Requirement (WDR) authorization from the Regional Board (SWRCB 2023).

California Wetlands Conservation Policy. Executive Order W-59-93 (1993) established the State of California's "no-net-loss" policy for wetlands, providing comprehensive direction for the coordination of state-wide activities for the preservation and protection of wetland habitats.

3.3 LOCAL REGULATIONS

Santa Cruz County General Plan

The Santa Cruz County General Plan (2024) provides goals, objectives and policies to protect biological resources. Chapter 5 Agriculture, Natural Resources, and Conservation Element (ARC), Goal ARC 3 Biological Resources Protection identifies the goal to "protect and restore biological resources, including unique, rare, threatened, and endangered plant and animal species and their habitats, that warrant preservation because of their biological and scientific values, contributions to open space, and importance in maintaining a healthy environment and mitigating the effects of climate change". The subsequent objectives and policies include (but are not limited to) the protection of biological diversity; restoration of sensitive habitats; preservation, protection, and restoration of riparian corridors and wetlands; and watershed, surface water and groundwater protection.

Santa Cruz County Sensitive Habitat Protection Ordinance

The County of Santa Cruz Sensitive Habitat Protection ordinance (§ 16.32) is intended to "minimize the disturbance of biotic communities which are rare or especially valuable because of their special nature or role in an ecosystem, and which could be easily disturbed or degraded by human activity." Sensitive habitats under the Santa Cruz County Code relevant to this Program include the following:

(1) Areas of special biological significance as identified by the State Water Resources Control Board.

(2) Areas which provide habitat for locally unique biotic species/communities including but not limited to: oak woodlands, coastal scrub, maritime chaparral...and special forests including San Andreas Oak Woodlands.

(3) Areas adjacent to essential habitats of rare, endangered or threatened species as defined in subsections (5) and (6) of this definition.

(4) Areas which provide habitat for species of special concern as listed by the California Department of Fish and Game in the special animals list, natural diversity database.

(5) Areas which provide habitat for rare or endangered species which meet the definition of Section 15380 of the California Environmental Quality Act guidelines.

(6) Areas which provide habitat for rare, endangered or threatened species as designated by the State Fish and Game Commission, United States Fish and Wildlife Service or California Native Plant Society…

(9) All lakes, wetlands, estuaries, lagoons, streams and rivers.

(10) Riparian corridors.

A biotic approval is required for any development activity within sensitive habitats. The project is required to mitigate any significant environmental impacts, protect sensitive habitats "undisturbed by the proposed development activity", and/or restore degraded sensitive habitats "commensurate with the scale of the proposed development". Additionally, specific protections for SCLTS, maritime chaparral, and San Andreas oak woodland are identified in the ordinance in §16.32.090. Exceptions are granted for restoration or to protect public health, safety, or welfare for sensitive habitats; however, exceptions for SCLTS essential habitat can only be granted through interagency coordination and approvals from the County, CDFW, and USFWS. Payment of a fee is also required for exceptions in SCLTS essential habitat.

Santa Cruz County Riparian Corridor and Wetlands Protection Ordinance

The County of Santa Cruz Riparian Corridor and Wetlands Protection Ordinance (§16.30) limits development activities in riparian[7] and wetland areas and provides buffer/setback requirements based on the seasonality of the feature (i.e. perennial vs. intermittent vs. ephemeral), slope and vegetation composition. The Santa Cruz County Planning Commission may authorize a riparian setback exception on a case-by-case basis. Exceptions are granted pending an approved application stating the applicant's proposed activities, best management practices (BMPs), and measures for mitigating impacts to the riparian corridor. Prior to approval of an exception, the Zoning Administrator must make a series of findings identified in §16.30.060 of the code and is likely to require conditions for granting of the exception to ensure that the project complies with the purpose of the ordinance:

(1) That there are special circumstances or conditions affecting the property;

(2) That the exception is necessary for the proper design and function of some permitted or existing activity on the property;

(3) That the granting of the exception will not be detrimental to the public welfare or injurious to other property downstream or in the area in which the project is located;

(4) That the granting of the exception, in the Coastal Zone, will not reduce or adversely impact the riparian corridor, and there is no feasible less environmentally damaging alternative; and

(5) That the granting of the exception is in accordance with the purpose of this chapter, and with the objectives of the General Plan and elements thereof, and the Local Coastal Program Land Use Plan.

Typically, protective measures that prevent degradation of aquatic features are required, including erosion and sediment control measures and water quality protection measures.

[7] The Santa Cruz County Code defines riparian vegetation/woodland as "those plant species/woody plant species that typically occur in wet areas along streams or marshes" (Santa Cruz County Code 16.30.030). See also USFWS definition of riparian habitat under the Sensitive Habitats section (USFWS 2009).

4.0 RESULTS

4.1 HABITAT TYPES

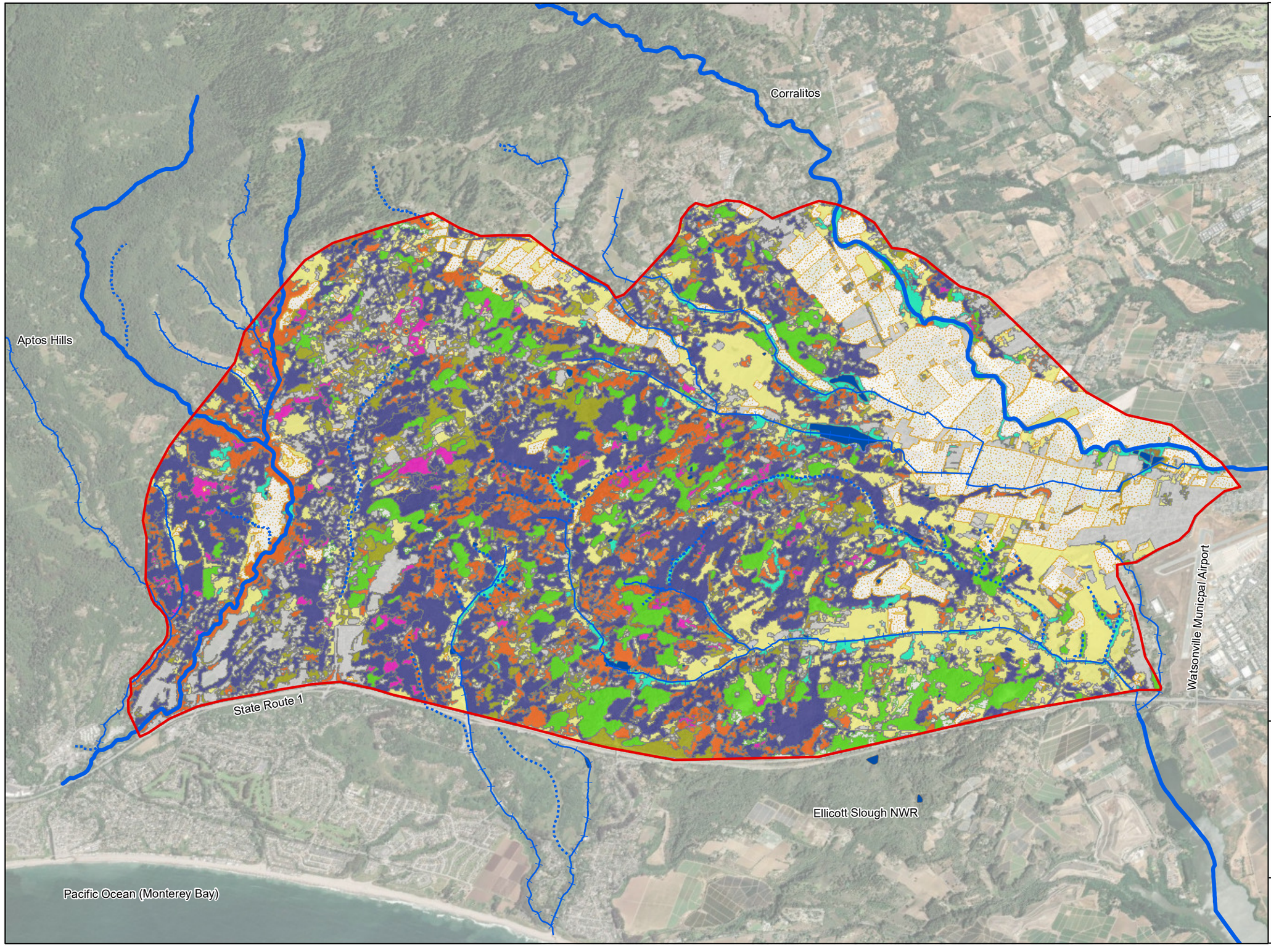
EcoSystems West biologists identified 18 habitat types within the Program Area, nine of which are considered sensitive habitat types by the County and/or CDFW. These habitat types are depicted in **Figure 2**. **Figure 3** depicts aquatic features within the Program Area.

The following habitat descriptions are informed by multiple vegetation classification frameworks, (Sawyer et al. 2009; Holland1986; VegCAMP 2025; and USFS 2025). Due to the broad extent of the Program Area, differences in topography, localized climate conditions, and past or ongoing land use, the descriptions are intentionally generalized to reflect the expected range of plant communities. These habitat summaries are intended to support program-level environmental review and will be further refined through future site-specific investigations for individual projects implemented under the Program.

Eucalyptus

Eucalyptus groves, primarily dominated by blue gum (*Eucalyptus globulus*), are cultivated non-native forested habitats that were established for windbreaks, erosion control, or historic timber production. Eucalyptus stands tend to occur on slopes and terraces with moderately well-drained soils and may be adjacent to numerous habitat types. Within the Program Area, Red River gum (*Eucalyptus camaldulensis*) and red iron bark (*Eucalyptus sideroxylon*) are also present, although widely scattered and occasionally solitary.

These forested eucalyptus stands comprise a dense overstory that produces a thick layer of understory leaf litter (duff). The eucalyptus trees produce allelopathic effects from leaf oils and root exudates that may inhibit native understory growth and facilitate the development of monospecific stands. Understory species composition is likely correlated to resistance to allelopathic effects, adjacent habitat types, and the prevalence of canopy openings. Within the Program Area, the understory supports native species associated with relictual coast live oak woodland, coastal scrub, mixed evergreen forest, and native prairie grassland habitats including coast live oak (Quercus agrifolia), Douglas fir (*Pseudostuga menziesii*), poison oak (*Toxicodendron diversilobum*), coffeeberry (*Frangula californica*), coyote brush (*Baccharis pilularis*), California blackberry (*Rubus ursinus*), wild rose (*Rosa californica),* Yerba santa (*Eriodictyon californicum*), sticky monkey flower (*Diplacus aurantiacus*), hazelnut (*Corylus cornuta* ssp. *californica*), goldenrod (*Euthamia occidentalis*), Douglas iris (*Iris douglasii*), purple needlegrass (*Stipa pulchra*), and California brome (*Bromus sitchensis* var. *carinatus*). Additionally, within the canopy openings, non-native species are locally abundant including Eurasian grasses, forbs, and shrubs. Several of the non-native plant species in this habitat type are classified as moderately to highly invasive by the California Invasive Plant Council (Cal-IPC) and USDA including, but not limited to, jubata grass (*Cortaderia jubata*), French broom (*Genista monspessulana*), scotch broom (*Cytisus scoparius*), Italian thistle (*Carduus pycnocephalus*), English ivy (*Hedera helix*), periwinkle (*Vinca major*), and Cape ivy (*Delairea odorata*).



ECOSYSTEMS WEST CONSULTING GROUP

Figure 2.

Habitat Types and Natural Vegetation Communities

South County Habitat Restoration Program
Santa Cruz County, CA

- Program Area Boundary

Terrestrial Habitats

- Agricultural
- Chaparral
- Coast Live Oak
- Coastal Scrub
- Developed-Landscaped
- Eucalyptus
- Grassland
- Mixed Evergreen Forest
- Other Non-Native Forest
- Redwood Forest
- Riparian
- Ruderal

Aquatic Habitats

- Ponds and Lakes
- Riverine Intermittent
- Riverine Perennial
- Riverine Swale/Ephemeral
- Wetland

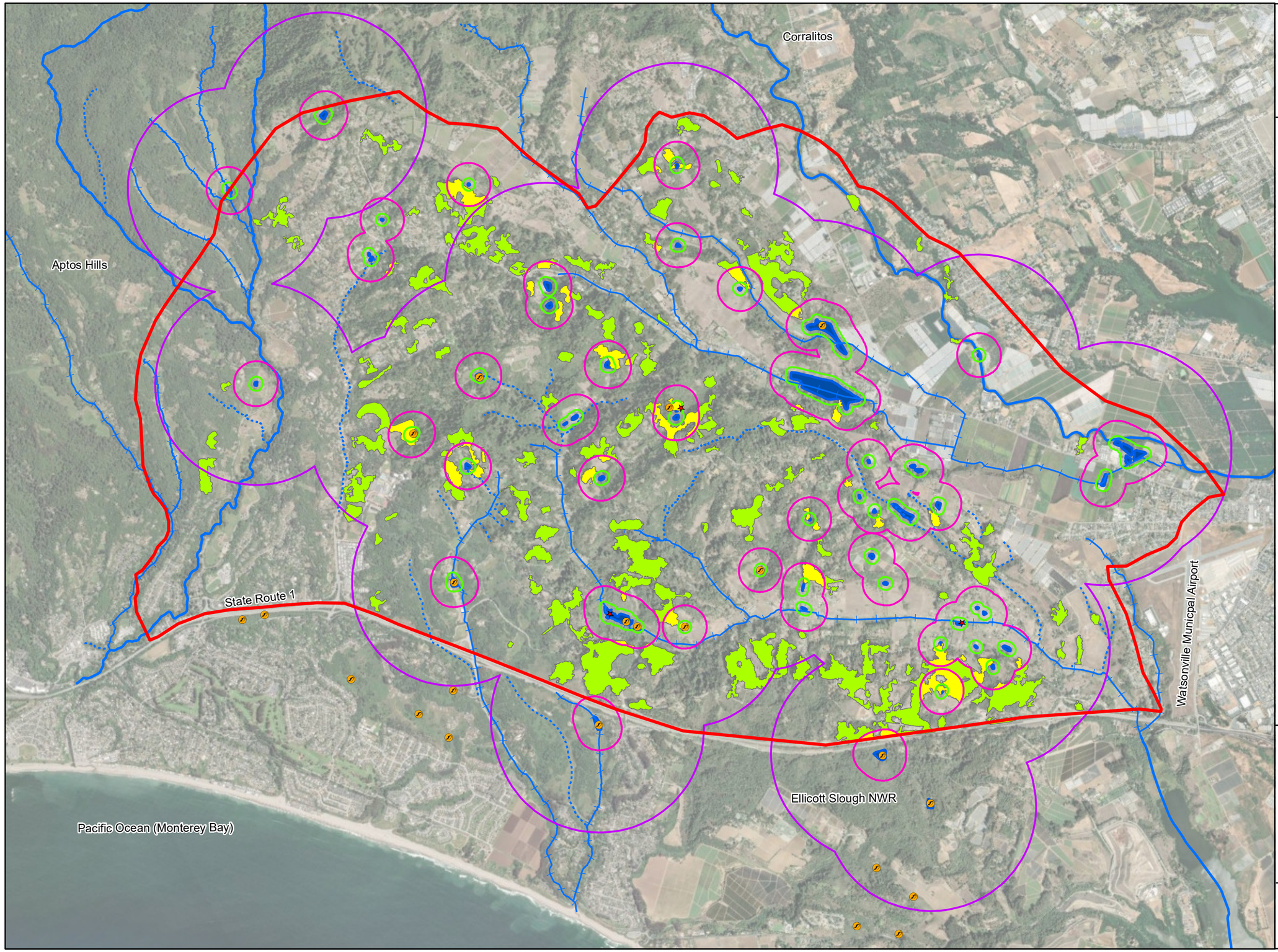
N E S W

1 inch=3,500 feet

0 0.25 0.5 1 Miles

Drawn By: J. Davilla, ESW
Date: 6/11/2025
Filepath:D:\Larkin_Valley_Santa Cruz_Long_Toed_Salamander\

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



ECOSYSTEMS WEST CONSULTING GROUP

Figure 3.

Aquatic Features, Occurence Location of Federally-Listed Amphibians, and Pond Buffers

South County Habitat Restoration Program Santa Cruz County, CA

- Project Area Boundary
- SCLTS 50 m Dispersal Buffer
- SCLTS 200 m Dispersal Buffer
- SCLTS 1000 m Dispersal Buffer
- Eucalyptus within 200 meters
- Eucalyptus beyond 200 meters
- SCLTS Breeding Ponds
- CRLF Breeding Ponds

Aquatic Habitats

- Ponds and Lakes
- Riverine Intermittent
- Riverine Perennial
- Riverine Swale/Ephemeral

N E S W

1 inch=3,000 feet

0 0.25 0.5 1 Miles

Drawn By: J. Davilla, ESW
Date: 6/11/2025
Filepath:D:\Larkin_Valley_Santa Cruz_Long_Toed_Salamander\

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Coast Live Oak

Coast live oak habitat within the Program Area includes forests, woodlands, and savannas which differ primarily in extent canopy cover and understory composition. Coast live oak forests are dominated by dense stands of coast live oak trees with a closed to moderately open canopy with greater than 60 percent areal cover supporting a patchy, but relatively diverse mixed understory of native graminoids (i.e, grasses, sedges, rushes), forbs, and shrubs. Oak woodlands typically support overstory canopies between 30 to 60 percent areal cover with a more diverse and well-developed understory than oak forests, whereas savannas are characterized by widely spaced oaks with approximately 10 to 30 percent canopy cover with an understory dominated by herbaceous plants and widely scattered shrubs which is often indistinguishable from surrounding grasslands.

Areas dominated by coast live oaks, including the rare San Andreas oak woodland vegetation community, are considered County of Santa Cruz sensitive habitats (Santa Cruz County Code §16.32). Coast live oak woodlands in the county typically comprise an overstory primarily dominated by coast live oak but within the Program Area may also support scattered to locally abundant Shreve oak (*Quercus parvula* var. *shreveii*), gold cup live oak (*Quercus chrysolopis*), chinquapin (*Chrysolepis chrysophylla*), Madrone (*Arbutus menzesiesii*), California bay laurel (*Umbellularia californica*), and Monterey pine (*Pinus radiata*) cultivars. Common native understory species are similar to those described above under **Eucalyptus** including poison oak, California blackberry, coffeeberry, coyote brush, as well as native and non-native grasses and forbs such as wild oats (*Avena* spp.), brome grasses (*Bromus diandrus, B. hordeaceus, B. laevipes, B sitchenesis* var. *carinatus*), Italian rye grass (*Festuca perennis*), Purple needlegrass (*Stipa pulchra*), bracken fern (*Pteridium aquilinum*), miners' lettuce (*Claytonia perfoliata*). The understory of coast live oak forest also supports an array of invasive plant species including Eurasian grasses, Italian ryegrass, jubata grass, French broom, cape ivy, English ivy, and iceplant (*Carpobrotus edulis, C chilensis*)

San Andreas Oak Woodland is a sensitive habitat type endemic to southern Santa Cruz County and Larkin Valley associated with sandy or gravelly soils and comprising a coast live oak overstory with an understory of maritime chaparral. Common associate understory vegetation includes many species occurring in coast live oak woodland described above but also supports a unique assemblage of shrubs and forbs typically found in drier areas with well drained soils including CNPS California Rare Plant Ranks (CRPR) List 1B.2 Hooker's manzanita (*Arctostaphylos hookerii ssp. hookerii*), Monterey ceanothus (*Ceanothus rigidus*), federally Threatened Monterey spineflower (*Chorizanthe pungens var. pungens*), and federally Endangered robust spineflower (*Chorizanthe robusta* var. *robusta*). This habitat type is restricted to the sandy, infertile soils on hillsides and canyons north of Watsonville in Larkin Valley and within the Ellicott Slough Reserve immediately south of the Program Area.

Mixed Evergreen Forest

The mixed evergreen forest habitat supports a relatively even-mixed assemblage of evergreen trees with variable species composition depending on various biotic and abiotic factors but typically occurring on drier sites than those supporting coast redwood forest. Mixed evergreen forests are more extensive on south- and west-facing slopes, and often (but not always) occur upslope of redwood forest and may

intergrade with other forested habitat types (i.e. redwood forest, coast live oak forest) within the Program Area.

Mixed evergreen forests range from dense, closed-canopy forests to relatively open forests with large canopy gaps, and savanna-like bordering grasslands, with scattered trees and large openings vegetated with typical grassland species. The dominant trees are predominantly broadleaved evergreen species including the conifers Douglas-fir and Monterey pine and broadleaved species such as madrone, tanoak (*Notholithocarpus densiflora*), bigleaf maple (*Acer macrophyllum*), box elder (*Acer negundo*), and coast live oak.

California hazelnut (*Corylus cornuta var. californica*) is frequent in the understory, along with poison oak, creeping snowberry (*Symophoricarpos mollis*), California blackberry, and the woody vine pink honeysuckle (*Lonicera hispidula*). A large number of native forbs are particularly characteristic of mixed evergreen forest habitats, although many of them also occur in redwood forests. Associate herbaceous species include, but are not limited to, wood fern (*Dryopteris arguta*), yerba buena (*Clinopodium douglasii*), California hedge nettle (*Stachys bullata*), wood strawberry (*Fragaria vesca*), bracken fern, California brome, and Pacific sanicle (*Sanicula crassicaulis*). Plant species including redwood sorrel (*Oxalis oregana*), western sword fern (*Polystichum munitum*), alumroot (*Heuchera micrantha*), and California spikenard (*Aralia californica*) may also occur in more mesic conditions.

Redwood Forest

Redwood forests occur in areas that receive abundant summer fog and annual precipitation exceeding 25 inches per year but generally do not occur along the immediate coast or on sites with direct coastal exposure and salt spray. Where well developed, this habitat type is typically a dense forest, with the canopy closed or nearly so. The principal dominant tree is the coniferous species coast redwood (*Sequoia sempervirens*). Although redwood forests in the Program Area may occur on all slope positions and all aspects, they are most extensive and best developed on relatively moist, sheltered sites including north- and east-facing slopes, arroyos, canyon bottoms, and lower canyon slopes.

Associated tree species, which may be co-dominant, especially in areas transitional to mixed evergreen forest include those listed above under coast live oak and mixed evergreen forest types.

The shrub layer in redwood forest habitats is generally sparse and uneven. California hazelnut (*Corylus cornuta var. californica*) and evergreen huckleberry (*Vaccinium ovatum*) may be present understory species within this habitat type.

Redwood forests within the Program Area are typically characterized by deep shade and thick, acidic duff, which tend to inhibit the success of understory species. The forest floor in dense, well developed redwood forest is often nearly devoid of understory vegetation. Nevertheless, a number of herbaceous species are particularly characteristic of redwood forests (although some of these species may occasionally occur in moist mixed evergreen forest as well; these include sword fern (*Polystichum munitum*), redwood sorrel (*Oxalis oregana*), false Solomon's seal (*Maianthemum racemosum*), wild ginger (*Asarum caudatum*), western wakerobin (*Trillium ovatum* ssp. *ovatum*) and two-eyed violet (*Viola ocellata*).

Non-native/Native Grassland

Native grasslands in the Program Area are relatively uncommon and often persist in undeveloped terraces, grazed rangelands, or south-facing slopes with well-drained sandy loam or gravelly soils. These communities are typically dominated by purple needlegrass (*Stipa pulchra*), California oatgrass (*Danthonia californica*), *fescues* (*Festuca* spp.) and pine bluegrass (*Poa secunda* var. *secunda*) and other native bunchgrasses interspersed with native forbs such as blue-eyed grass (*Sisyrinchium bellum*), yarrow (Achillea millefolium), Ithuriel's spear (*Tritelea laxa*), harvest brodiaea (*Brodiaea elegans*), and purple owl's clover (*Castilleja exserta*). Moreover, it is common for native grasslands to support scattered native shrubs including coyote brush, poison oak, and California blackberry, but typically at an areal cover below 10 percent.

Non-native grasslands are comprised primarily of weedy, non-native grasses and forbs of Eurasian origin and occur on all slope positions and all aspects, although generally on more or less exposed sites. It also occurs in nearly level upland areas and on coastal terrace where disturbance and propagule pressure have largely displaced native species although relictual native grasses are present, but usually at less than five percent cover. This habitat type is more common and widespread throughout the Program Area but still represents a relatively small amount of the total Program Area. Non-native grasslands may represent an early successional stage following cessation of ongoing management (e.g., grazing, mowing, etc.) or may reflect the presence of clayey or low nutrient soils and/or microclimates with higher ambient temperatures and lower annual precipitation compared to surrounding areas (i.e., rain shadows).

Within the Program Area, non-native grasslands are typically dominated by non-native annual and/or perennial grasses and forbs including some combination of annual grasses such as wild oats, Italian ryegrass, brome grasses, rattlesnake grass (*Briza maxima*), common barley (*Hordeum murinum* ssp. *leporinum*), purple false brome (*Brachypodium distachyon*), dogtail grass (*Cynosurus echinatus*), six-weeks fescue (*Festuca bromoides)*, common barley (*Hordeum murinum ssp. leporinum*), wild radish (*Raphanus sativus*), and rattail fescue (*Festuca myuros*). Several non-native perennial grasses and forbs, such as Harding grass (*Phalaris aquatica*), English plantain (*Plantago lanceolata*), sheep sorrel (*Rumex acetosella*), curly dock (*Rumex crispus*), and tall fescue (*Festuca arundinacea*), fennel (*Foeniculum vulgare*), are occasionally dominant or locally abundant. This habitat type may also have small aggregations of coyote brush.

A large percentage of plant species identified within this habitat type are listed as invasive weeds with "moderate to high ecological impacts" by the California Invasive Plant Council (Cal-IPC 2023) including poison hemlock, fennel, wild oats, thistles, wild radish, and mustards.

Coastal Scrub

The coastal scrub habitat type within the Program Area is considered a sensitive habitat under Santa Cruz County Code §16.32.

Coastal scrub is generally developed on relatively exposed, coast-facing slopes, sometimes extending onto nearly level uplands or lowlands. Coastal scrub habitats range from relatively dry to relatively moist. They are dominated by medium to large-size shrubs, mostly evergreen sclerophyllous (having relatively small, thick, leathery leaves) species.

Species composition in coastal scrub stands varies considerably, largely in response to soil and moisture conditions and disturbance history. Shrub cover ranges from dense and more or less impenetrable to open. The most abundant and widespread shrub species in coastal scrub habitats within the Program Area are coyote brush (*Baccharis pilularis*) and poison oak (*Toxicodendron diversilobum*). Associated shrubs may include coffeeberry (*Frangula californica)*, California blackberry (*Rubus ursinus*), sticky monkeyflower (*Diplacus aurantiacus*), deerweed (*Acmispon glaber*), California man-root (*Marah fabacea*), and others.

A diverse assortment of herbaceous species may occur in well-developed coastal scrub habitats, growing up through the shrubs or in openings between shrubs. Characteristic species include California bee-plant (*Scrophularia californica*), bracken fern (*Pteridium aquilinum*), California aster (*Aster chilensis*), and others. A variety of weedy non-native herb species may also be locally abundant in coastal scrub habitats.

Chaparral

Chaparral habitats are shrub-dominated plant communities generally composed of evergreen broad-leaved species and occur on dry, exposed sites, often in thin, rocky soil. Chaparral is most extensive and best developed in interior mountain areas in California, or, in the Outer Coast Ranges in areas with little maritime influence in the local microclimate.

Maritime chaparral occurs closer to the coast than typical chaparral habitats, in a more maritime climate regime, with cooler summer temperatures and considerable summer fog. This habitat type is considered a sensitive habitat under §16.32 of the Santa Cruz County Code. Like other chaparral types, maritime chaparral is characterized by a usually dense, often impenetrable cover of evergreen sclerophyllous shrubs, although mostly different species than those that are characteristic of coastal scrub. Compared to more interior chaparral types, maritime chaparral generally has a relatively low proportion of chamise (*Adenostoma fasciculatum*) and a high proportion of manzanitas (*Arctostaphylos* spp.), and one or more relatively narrowly endemic manzanita species is usually present.

Shrubs found in maritime chaparral habitat within the Program Area may include crinite manzanita (*Arctostaphylos crustacea ssp. crinita*), buckbrush ceanothus (*Ceanothus cuneatus*), blue blossom (*Ceanothus thyrsiflorus*), Shreve oak (*Quercus parvula* var. *shrevei*), coffeeberry (*Frangula californica*), evergreen huckleberry (*Vaccinium ovatum*), and chamise (*Adenostoma fasciculatum*). Herbs are usually sparse or absent except where openings or disturbed areas occur.

Riparian

Riparian corridors are considered sensitive habitat in accordance with Santa Cruz County Code §16.32. Riparian forest and scrub habitats develop in areas where the root systems of hydrophytic and phreatophytic woody species (trees and shrubs) can obtain abundant subsurface moisture year-round. The largest and best developed riparian forest habitats are generally on floodplain alluvial terraces bordering permanent or intermittent streams. Riparian forests may also occur on lower slopes adjacent to stream courses or canyon bottoms and in isolated upland areas where sufficient subsurface moisture is available. Stands located away from stream courses and canyons are typically small.

Riparian forest habitats are dominated by mostly deciduous trees and large, arborescent shrubs. The canopy is typically dense, and the density of woody stems is often high enough that stands are virtually impenetrable. The most abundant and widespread dominant species in riparian forest stands within the Program Area is arroyo willow (*Salix lasiolepis*), typically a large, arborescent shrub rather than a tree. Arroyo willow is often the only tree-sized species in smaller, more isolated stands of riparian forest. Associated tree species, most commonly occurring in larger, better developed riparian forests on and adjacent to floodplains, may include shining willow (*Salix lasiandra*), black cottonwood (*Populus trichocarpa*), box elder, red alder (*Alnus rubra*), and red willow (*Salix laevigata*). All of these species may be locally dominant or co-dominant.

The arborescent to arboreal canopy is typically dense and often impenetrable, hence understory vegetation in riparian forests is often poorly developed and sometimes nearly absent. Large shrubs that are sometimes present include American dogwood (*Cornus sericea*), coffeeberry (*Frangula californica*), and straggly gooseberry (*Ribes divaricatum* var. *pubiflorum*). California blackberry and poison oak are sometimes locally abundant in the understory where prolonged soil saturation and/or inundation is lacking. The invasive non-native vines Himalayan blackberry, English ivy, and cape ivy are also locally abundant.

Seasonal Wetland/Seep

Wetlands are transitional areas between terrestrial and aquatic ecosystems and are defined by the presence of hydrophytic vegetation, hydric soils, and saturated or inundated conditions during the growing season. This habitat type is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (EPA, 40 CFR 230.3, and CE 33 CFR 328.3).

In the Program Area, wetlands may include seasonal wetlands, seeps, and shallow depressional wetlands (i.e., vernal pools). Plant species found within this habitat type may include western goldenrod (*Euthamia occidentalis*),

Seep wetlands where groundwater flows out from underground and onto the surface, often creating a wet or saturated area. They are distinct from springs, which typically have a more defined point of emergence. Seeps are commonly found in areas like slopes, bases of slopes, or in coves, often where groundwater encounters a barrier like bedrock or hardpan. Species found within seep wetlands include common rush (*Juncus patens*), water parsley (*Oenanthe sarmentosa*), silverweed cinquefoil (*Potentilla anserina*), lesser water-policy and coastal plantain (*Plantago subnuda*).

Pond/Marsh

Ponds are typically small, seasonal to permanent waterbodies found within inundated basins that may be natural or artificial. They serve as habitat for a range of aquatic and semi-aquatic species. Pond bottom substrates are usually composed of fine sediments (silt and clay) and decomposing organic matter. Surrounding uplands may support seasonal wetlands dominated by annual hydrophytes, or transition into freshwater marsh described below. **Figure 3** depicts ponds within the Program Area.

Freshwater marshes are seasonally, or permanently inundated wetlands dominated by emergent herbaceous vegetation. Characteristic vegetation includes cattails (*Typha latifolia*), California bulrush (*Shoenoplectus californicus*), Pacific rush (*Juncus effusus* var. *pacificus*), spikerush (*Elechoaris macrostachya*), smartweed (*Persicaria spp*.), duckweed (*Lemna spp*.), broadfruit bur-reed (*Sparganium eurycarpum*), and marsh pennywort (*Hydrocottle ranunculoides*), and common tule (*Schoenoplectus acutus*). Marsh soils are typically hydric, with fine-textured substrates and high organic content.

Riverine (Stream)

Riverine areas within the Program Area, including Corralitos Creek, Valencia Creek, and their tributaries, as well as unnamed streams and drainages consist of natural channelized watercourses with a clearly defined bed, bank and ordinary high-water mark[8]. These streams convey surface flows on an ephemeral, intermittent (i.e., seasonal) or year-round basis depending on watershed conditions, and typically exhibit gravel, cobble, or sandy substrates. These features provide important ecological functions, including wildlife movement corridors, sediment transport, and aquatic habitat for wildlife species. **Figure 3** depicts riverine habitats within the Program Area.

Agricultural/Orchard

Agricultural lands in the Program Area are typically used for a variety of crops. These lands are characterized by intensively managed soil, often tilled and irrigated, with vegetation consisting primarily of cultivated monocultures and limited naturalized vegetation (typically ruderal-mixed herbaceous) along the margins.

Orchards or vineyards may consist of fruit or nut trees, or fruit producing vines. Orchards and vineyards may support an array of trees or vines and are maintained in rows with bare or mowed understory. Common understory species, when not chemically controlled, may include species that occur in non-native grassland and ruderal habitat types. Soils are usually well-drained sandy loams, and orchards are planted on gentle to moderate slopes with southerly aspects for optimal sun exposure.

Ornamental/Landscaping

Ornamental or landscaping areas are found around residences, ranches, and rural facilities, typically comprising non-native shrubs, lawn grasses, flower beds, and decorative trees. These areas are often irrigated, heavily maintained, and subject to high levels of human disturbance. Soils are highly modified, often compacted, and may include imported topsoil.

Ruderal

Ruderal communities within the Program Area consist of highly disturbed, weedy areas immediately adjacent to roads, agricultural fields, and other developed or disturbed areas on the site. Vegetation within this habitat type is dominated by aggressive, opportunistic species, such as poison hemlock

[8] The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. (33 CFR 328.3(e))

(*Conium maculatum*), fennel (*Foeniculum vulgare*), cheeseweed (*Malva parviflora*), pineapple weed (*Matricaria discoidea*), bindweed (*Convolvulus arvensis*), Bermuda grass (*Cynodon dactylon*), dog fennel (*Anthemis cotula*), Jersey cudweed (*Pseudognaphalium luteoalbum*), purple sand spurry (*Spergularia rubra*), and filarees (*Erodium spp*.). Other ruderal areas are comprised of dense thickets of non-native Himalayan blackberry, wild radish (*Raphanus sativus*), and black mustard (*Brassica nigrum*). In many instances, ruderal habitat is in a relatively stable seral state due to repeated, ongoing disturbance and is not likely to develop into more ecologically valuable habitat types.

Developed

The developed habitat designation is used for all the heavily urbanized core areas of the city as well as most areas of residential or other development in outlying portions of the Program Area. Developed areas are mostly occupied by buildings, streets, driveways, walkways, and parking areas, and other areas with anthropogenic influences (i.e., human activity) that do not support naturalized vegetation.

4.1 SENSITIVE PLANTS

EcoSystems West identified 25 sensitive plant species with potential to occur within the Program Area. **Table 1** details the habitat requirements, nearest records, and occurrence potential for rare plant species considered in this assessment. The majority of these plant species are not likely to be found within the eucalyptus stands proposed for removal; however, they may be present in localized openings within the groves or in adjacent habitats that may be used for access and staging during Program implementation.

Table 1. Status, distribution and habitat of special-status plants with potential to occur in the vicinity of the South County Habitat Restoration Program Area, Santa Cruz County, California.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Amsinckia lunaris bent-flowered fiddleneck	None	None	List 1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub	ALA, CCA, COL, LAK, MRN, NAP, SBT, SCL, SCR, SHA?, SIS?, SMT, SON, YOL	March-June	**NOT EXPECTED** No occurrences of ben-flowered fiddleneck are documented within the Program Area, but suitable grassland and cismontane woodland occurs within or adjacent to proposed eucalyptus removal areas. The nearest occurrence of this species is several miles north of the Program Area in Scotts Valley and this occurrence represents the southernmost extent of the known range for bent-flowered fiddleneck.
Arctostaphylos andersonii Santa Cruz manzanita	None	None	List 1B.2	Chaparral; openings in and edges of broadleaved upland forest and north coast coniferous forest	SCL, SCR, SMT	November-April	**MODERATE** Suitable broadleaved upland (oak) forest and maritime chaparral habitat present within the Program Area. There are several documented occurrences in Larkin Valley, but none specifically identified within potential eucalyptus removal areas.
Arctostaphylos hookeri ssp. *hookeri* Hooker's manzanita	None	None	List 1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub	MNT, SCR	January-June	**HIGH** Suitable San Andreas oak woodland habitat present within the southern portion of the Program Area. Hooker's manzanita is recorded from the Program Area and may occur in the understory of areas with eucalyptus. This species is likely present in several groves with sandy soils proposed for habitat restoration.
Arctostaphylos pajaroensis Pajaro manzanita	None	None	List 1B.1	chaparral; sandy soil	MNT, SBT, SCR*	December-March	**MODERATE** Suitable San Andreas oak woodland with maritime chaparral understory habitat present within the Program Area. One historic occurrence is identified within the Program Area approximately ¾ west of Corralitos Lagoon (aka Freedom Lake). The majority of extant occurrences for this species are located in Monterey County south of the Pajaro River, although relictual extant populations are known from the understory of eucalyptus stands in the region.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Calandrinia breweri Brewer's calandrinia	None	None	List 4.2	Chaparral, coastal scrub; sandy or loamy, disturbed sites and burns	CCA, LAX, MEN, MNT, MPA, MRN, NAP, SBA, SBD, SCL, SCR, SCZ, SDG, SLO, SMT, SON, VEN, BA	March-June	**LOW** Disturbed sandy and loamy soils are prevalent throughout the Program Area although Brewer's calandrinia typically grows in open areas and is unlikely to occur beneath a dense eucalyptus canopy. No known occurrences from Larkin Valley or southern Santa Cruz County.
Ceanothus rigidus Monterey ceanothus	None	None	List 4.2	Closed cone coniferous forest, chaparral, coastal scrub; sandy soil	MNT, SCR	February-April	**MODERATE** This species occurs primarily in sandy soils in maritime chaparral and San Andreas oak woodland and is documented from several locations in the north central portion of the Program Area near Calabassas Road.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	None	None	List 1B.2	Valley and foothill grassland; alkaline soils	ALA, CCA, MNT, SCL(*?), SCR*, SLO, SOL*	May-November	**LOW** Grasslands with clayey alkaline soils are present within the Program Area. However, this species usually occurs in lowlands near brackish and saline marshes, sloughs and vernal pools and does not typically occupy forested habitats. There is a mapped occurrence of Congdon's immediately west of the Program Area in the Ellicott Slough Preserve.
Chorizanthe pungen var. *pungens* Monterey spineflower	Threatened	None	List 1B.2	Maritime chaparral, cismontane woodland coastal dunes, coastal scrub, valley and foothill grassland; sandy soils	MNT, SCR	April-June	**HIGH** Sandy, well drained soils known to support this species are present within the Program Area. Several documented occurrences of Monterey spineflower are located adjacent to eucalyptus groves in the western portion of the Program Area, with several populations occurring along Trabing Road and East Bel Mar Drive.
Chorizanthe robusta var. *robusta* robust spineflower	Endangered	None	List 1B.1	Coastal dunes, coastal scrub, openings in cismontane woodland, in sandy or gravelly soil	ALA*, MNT, MRN, SCL*, SCR, SFO, SMT*	April-September	**MODERATE** Suitable openings in coastal scrub and woodlands with sandy or gravelly soils are present across the Program Area. Robust spineflower is documented from several occurrences within the Program Area but attempts to locate one of populations near Aptos High indicated this population is likely extirpated. There is one extant occurrence documented directly within the Program Area immediately west of Merk Road near Blue Heron Farms in Corralitos. This species is not expected to occur directly within Eucalyptus groves but may be found within openings or along the grove margins.
Elymus californicus California bottle-brush grass	None	None	List 4.3	Broadleaved upland forest, cismontane woodland, North Coast coniferous forest, riparian woodland	MNT, MRN, SCR, SMT, SON	July-September	**HIGH** Suitable habitats for California bottle-brush grass are present throughout the Program Area. There are no mapped occurrences within the Program Area, but several extant populations are recorded from Nisene Marks State Park approximately ¾ mile west of the Program Area boundary in mixed evergreen riparian forest.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Holocarpha macradenia Santa Cruz tarplant	Threatened	Endangered	List 1B.1	Coastal prairie, valley and foothill grassland, coastal scrub, often in clay or sandy soils	ALA*, CCA*, MNT, MRN*, SCR, SON*	May-October	**HIGH** Santa Cruz tarplant occurs at two extant locations within the Program Area in disturbed annual grassland with loamy clay soils and additional populations are located just beyond the Program Area boundary. A population of several thousand plants is located immediately north of Larkin Valley Road in sloped grassland bordered by eucalyptus groves. This species is very unlikely to grow directly beneath mature eucalyptus but removal efforts should avoid staging, falling or skidding in grasslands that support, or potentially support Santa Cruz tarplant.
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	None	None	List 1B.1	Openings in closed-cone coniferous forest, maritime chaparral, coastal scrub, coastal prairie, in sandy or gravelly soil	ALA*, MRN*, MNT, SBA, SCR, SFO*, SLO, SMT	April-September	**LOW** Suitable habitats with sandy and gravelly soils are present within the Program Area; however, this species typically occurs in coastal dunes and maritime chapparal in Monterey County lacking an overstory tree canopy. Several extant occurrences are located within Santa Cruz County with the nearest population documented along Buena Vista Road south of the Ellicott Slough National Wildlife Refuge approximately ½ mile southwest of the Program Area.
Hosackia gracilis harlequin lotus	None	None	List 4.2	Moist to wet places, broadleaved upland forest, coastal scrub, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, meadows and seeps, marshes, north coast coniferous forest, valley and foothill grassland	DNT, HUM, MEN, MNT, MRN, SBT, SCR, SFO, SLO, SMT, SON, Oregon, Washington	March-July	**LOW** This widespread species occupies many habitat types and but is typically found in mesic meadows and coastal prairies which are uncommon within the Program Area. There is additional potential for occurrence along margins of freshwater seeps and seasonal wetland habitat within the Program Area. Nearest known extant occurrences are more than 10 miles northwest of the Program Area along the north coast of Santa Cruz County.
Iris longipetala coast iris	None	None	List 4.2	Coastal prairie, lower montane coniferous forest, mixed evergreen forest, meadows and seeps; mesic soils	ALA, CCA, ELD, GLE, HUM, MRN, MEN, MER, MNT, SFO, SMT, SCL, SCR, SOL, SON, VEN	March-May (June)	**NOT EXPECTED** Meadows and seeps in grassland and mixed evergreen forest habitat types have the potential to support coast iris within the Program Area. This species is not documented to occur with Larkin Valley but several extant occurrences are situated in similar habitat types elsewhere in Santa Cruz County including in Scotts Valley approximately 7 miles northwest of the Program Area.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Leptosiphon grandiflorus large flowered leptosiphon	None	None	List 4.2	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland; sandy soils	ALA, CCA, HUM, KRN, LAK, MRN, MEN, MER, MNO, MNT, SBT, SDG, SFO, SLO, SMT, SBA*, SCL, SCR, SON, STA	April-August	**LOW** Suitable sandy soils in coastal scrub, woodland and grassland habitats throughout the Program Area. However, this species has limited documented occurrences in Santa Cruz County with the nearest extant population located over 10 miles north of the Program Area near Davenport. This species is most prevalent in closed cone coniferous forest habitat and is widespread in the Del Monte Forest of the Monterey Peninsula.
Lomatium parvifolium small-leaved lomatium	None	None	List 4.2	Closed cone coniferous forest, chaparral, coastal scrub, riparian woodland; serpentinite soils	MNT, SCR, SLO	February-June	**HIGH** Small-leaved lomatium is usually found in serpentine soils which are not present within the Program Area. However, several verified extant occurrences in sandy/gravelly soil are located in the southernmost portion of the Program Area near East Bel Mar Road. It is presumed these populations are extant and this species is likely to occur near areas proposed for eucalyptus removal.
onardella sinuata ssp. nigrescens northern curly leaved monardella	None	None	List 4.2	Closed cone coniferous forest, chaparral, coastal dunes, coastal prairie, coastal scrub, lower montane coniferous forest (pine sandhills); sandy areas	MNT, MRN, SBA, SCR, SFO, SLO, SMT, SON	May-July	**LOW** Northern curly leaved monardella is limited entirely to sandy soils which are widespread within the Program Area. There are no documented occurrences of this species within the Program Area although suitable habitat may exist in sandy openings in and adjacent to eucalyptus proposed for removal. The nearest occurrence in Santa Cruz County is located in the Ben Lomond Sandhills approximately 12 miles northwest of the Program Area.
Monolopia gracilens woodland wool threads	None	None	List 1B.2	Chaparral, valley and foothill grassland, cismontane woodland, broadleaved upland forest, north coast coniferous forest; in openings on sandy to rocky soils, often serpentinite after burns	ALA, CCA, MNT, SBT, SCL, SCR, SLO, SMT	February-July	**LOW** Rocky serpentine soils not present within the Program Area. However, while the majority of extant occurrences are in serpentine substrates in Santa Clara County, historic occurrences within Santa Cruz County are documented from clayey and sandy soils although the majority of these populations are now considered extirpated. There are no documented occurrences of this species in the Program Area with the nearest extant populations located at Quail Hollow Ranch County Park approximately 12.5 miles northwest of the Program Area.
Pedicularis dudleyi Dudley's lousewort	None	Rare	List 1B.2	Maritime chaparral, north coast coniferous forest, cismontane woodland, valley and foothill grassland	MNT, SCR*, SLO, SMT	April-June	**LOW** Dudley's lousewort is very uncommon species in Santa Cruz County with the majority of documented occurrences in Santa Cruz County now considered extirpated. This species has potential to occur in San Andreas oak woodland and openings in mixed evergreen forest habitats within the Program Area. The nearest documented occurrence is in an undisclosed location in Nisene Marks State Park several miles west of the Program Area.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah	None	None	List 4.2	Moist sites in coastal prairie, broadleaved upland forest, chaparral, valley and foothill grassland, vernal pools	CCA, DNT, KRN, LAX*, MEN, MNT, MRN, NAP, ORA*, SBT, SCL, SCR, SDG*, SLO, SMT(*?), SOL, SON	June-October	**MODERATE** Suitable mesic areas including wet meadows and seasonal wetlands are located throughout the Program Area in the vicinity of eucalyptus stands proposed for removal. There are no formally documented occurrences within the Program Area but in 2012 ESW (Roy Buck) incidentally observed this species in the northern portion of the Program Area on a hillslope dominated coastal scrub west of Corralitos Road.
Piperia michaelii Michael's rein orchid	None	None	List 4.2	Coastal bluff scrub, closed cone coniferous forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest	ALA, CCA, HUM, MNT, MRN, SBT, SCR, SCZ, SFO, SLO, SMT	May-August	**HIGH** Suitable habitat for Michael's rein orchid is widespread throughout the Program Area. This species has potential to occur directly within relictual coastal scrub and oak woodland habitats in eucalyptus groves proposed for removal. There are no formally documented occurrences within the Program Area, but there are numerous verified observations of this species documented on iNaturalist across Santa Cruz County. An occurrence of Michael's rein orchid near Manzanita Park in Monterey County is situated at edge of recently girdled eucalyptus trees.
Plagiobothrys chorisianus var. chorisianus Choris' popcorn-flower	None	None	List 1B.2	Moist places in chaparral, coastal prairie, coastal scrub	ALA(*?), MTN, SCR, SFO, SMT	March-June	**LOW** This species is primarily limited to mesic coastal terrace prairie grassland which is not widespread within the Program Area. There is an extant occurrence documented at Watsonville Municipal airport immediately east of the Program Area. However, this species more common along the coastal terraces in northern of Santa Cruz County and San Mateo County.
Plagiobothrys chorisianus var. *hickmanii* Hickman's popcorn-flower	None	None	List 4.2	Moist places in closed-cone coniferous forest, chaparral, coastal scrub, marshes and swamps, vernal pools	MNT, SBT, SCL, SCR, SLO, SMT?	April-June	**LOW** Suitable wetland and mesic habitats are present within the Program Area. However, nearest documented extant occurrence in located in Scotts Valley at the Glenwood Preserve approximately 10 miles northwest of the Program Area.
Plagiobothrys diffusus San Francisco popcorn-flower	None	Endangered	List 1B.1	Coastal prairie, valley and foothill grassland	ALA, SCR, SFO*, SMT	March-June	**LOW** Potential for occurrence in remnant mesic coastal prairie grasslands within the Program Area. However, the degraded nature of most grassland habitat within the Program Area is not likely to support this species. An occurrence from 2001 is documented at the Watsonville airport near the population of Choris' popcorn-flower, but is this species has not been observed in many years and may be extirpated.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Sanicula hoffmannii Hoffmann's sanicle	None	None	List 4.3	Broadleaved upland forest, mixed evergreen forest, chaparral, coastal scrub; serpentinite or clay	MNT, SBA, SCR, SCZ, SLO, SMT, SRO	March-May	**LOW** Suitable habitats for Hoffman's sanicle are widespread throughout the Program Area. However, the nearest known extant occurrence at Sunset Beach State Park is approximately 3.5 miles southeast of the Program Area. The majority of occurrence records for this species are in western San Luis Obispo County.
Sidalcea malachroides maple-leaved checkerbloom	None	None	List 4.2	Broadleaved upland forest, coastal prairie, coastal scrub, riparian forest and woodland, valley and foothill grassland; sandy areas	HUM, MEN, MNT, SCL, SCR, OR	May-August	**MODERATE** Suitable sandy soils in oak woodland, coastal scrub, and riparian forest habitats are present within the Program Area. There are several documented extant occurrences immediately west of the Program Area near Monte Toyon Cam.
Trifolium buckwestiorum Santa Cruz clover	None	None	List 1B.1	Coastal prairie, margins of broadleaved upland forest, cismontane woodland; gravelly soils	MEN, MNT, SCL, SCR, SMT, SON	April-October	**MODERATE** Suitable mesic coastal prairie habitat is limited within the Program Area but this species has potential to occur in sandy and gravelly soils along the margins of oak woodlands, mixed evergreen forest, and eucalyptus groves. There is an extant occurrence in Cusack's Meadow within Nisene Marks State Park approximately 4 miles north of the Program Area.
Trifolium polyodon Pacfic Grove Clover	None	Rare	List 1B.1	Closed cone coniferous forest, coastal prairie, meadows and seeps, valley and foothill grassland; occasionally granitic, mesic soils.	MRN, MNT, SCR, SON	April-June	**LOW** In Santa Cruz County, Pacific Grove clover is limited to mesic areas in open grasslands with sandy or rocky soils, although in Monterey County this species occurs in the Del Monte Forest under Monterey Pine canopy. The nearest documented occurrence is approximately 8 miles northwest of the Program Area in Scotts Valley at the Glenwood Preserve.

NOTES:

[1]Nomenclature follows Baldwin et al (2012) Hickman (1993); Tibor (2001); California Native Plant Society (2025).

[2]U.S. Fish and Wildlife Service (2025 a, b, c).

[3]Section 1904, California Fish and Game Code (California Department of Fish and Game 2020a).

[4] Tibor (2001); California Native Plant Society (2025).
CNPS Lists: List 1A: Presumed extinct in California. List 1B: Rare, Threatened, or Endangered in California and elsewhere. List 2: Rare, Threatened, or Endangered in California, more common elsewhere. List 3: Plants about which more information is needed. List 4: Plants of limited distribution: a watch list.
Threat Code extensions: .1: Seriously endangered in California. .2: Fairly endangered in California. .3 Not very endangered in California.

[5]Thomas (1960); Munz and Keck (1973); Hickman (1993); Baldwin et al (2012); Tibor (2001); California Native Plant Society (2025); and unpublished information.

[6]Tibor (2001); California Native Plant Society (2025); and unpublished information; counties abbreviated by a three-letter code (below); occurrence in other states as indicated.

[7]Munz and Keck (1973); Tibor (2001); California Native Plant Society (2025).

* Presumed extinct in these counties or states.

ALA: Alameda
AMA: Amador
BUT: Butte
CCA: Contra Costa
COL: Colusa
DNT: Del Norte
FRE: Fresno
GLE: Glenn
HUM: Humboldt
KRN: Kern
LAK: Lake
LAX: Los Angeles
MAD: Madera
MEN: Mendocino
MER: Merced
MNT: Monterey
MOD: Modoc
MPA: Mariposa
MRN: Marin
NAP: Napa
NEV: Nevada
ORA: Orange
PLA: Placer
PLU: Plumas
RIV: Riverside
SAC: Sacramento
SBA: Santa Barbara
SBD: San Bernardino
SBT: San Benito
SCL: Santa Clara
SCR: Santa Cruz
SCZ: Santa Cruz Island (SBA Co.)
SDG: San Diego
SFO: San Francisco
SHA: Shasta
SIE: Sierra
SIS: Siskiyou
SJQ: San Joaquin
SLO: San Luis Obispo
SMT: San Mateo
SOL: Solano
SON: Sonoma
SRO: Santa Rosa Island (SBA Co.)
STA: Stanislaus
SUT: Sutter
TEH: Tehama
TRI: Trinity
TUL: Tulare
TUO: Tuolumne
VEN: Ventura
YOL: Yolo
YUB: Yuba

4.2 SENSITIVE WILDLIFE

Table 2 details the habitat requirements, nearest records, and occurrence potential for each wildlife species considered in our assessment. A discussion of the life history of these species is included in **Appendix A. Wildlife Species Narratives**. A fraction of the species included on the target list are likely to inhabit eucalyptus groves proposed for removal, largely limited to bird species that may nest within the eucalyptus trees. The remainder of the wildlife species may occupy habitat adjacent to the eucalyptus groves and that may be used for access or staging.

Table 2. Conservation status, habitat requirements, and potential to occur for sensitive wildlife species in the vicinity of the South County Habitat Restoration Program Area, Santa Cruz County, California.

Common Name *Scientific Name*	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
INVERTEBRATES					
Crotch's Bumble Bee *Bombus crotchii*	-	SCE	S2	Open grassland and scrubland with requisite underground nesting habitat, such as small mammal burrows, underneath soft disturbed soil or leaf litter (Goulson 2010, Williams et al. 2014).	**Possible** Current range within Santa Cruz County is understudied but one recent record exists from Pleasure Point (2025) approximately 4.6 miles to the southwest (Bumble Bee Watch 2005). Additional records include south county occurrences at the Watsonville Airport (1994) immediately adjacent to the Program Area and 3.5 miles to the south at Sunset State Beach (1995) (CNDDB 2025).
Monarch Butterfly *Danaus plexippus* (wintering sites)	FC	-	S2S3	Overwintering habitat include eucalyptus, Monterey pine, or Monterey cypress tree groves typically within 1.5 miles of the coast. Abiotic and biotic factors including southwest aspect, wind protection and proximity to nectaries determine habitat suitability (Griffiths and Villablanca 2015, Xerces 2018).	**Not Expected** Only a small fraction of the Program Area is positioned within 1.5 miles of the coast, near Valencia Creek, where no eucalyptus trees are present, and near the Mar Monte/Larkin Valley State Route 1 exit, where a limited number of eucalyptus trees are present near the highway. No overwintering sites are known from this location. The nearest known roost sites are in La Selva Beach and Manresa State Beach (Xerces 2025): • Xerces site #2992 – La Selva (0.85 mi west, no recorded count) • Xerces site #2991 – La Selva (0.85 mi west, no recorded count) • Xerces site #2989 – Manresa State Beach (2 mi west; 2 individuals recorded in 2021).
FISH					
Pacific Lamprey *Entosphenus tridentatus*	-	SSC	S3	Perennial streams and rivers with ocean access and gravel present for spawning (Alley 2022).	**Present** Suitable gravel bottom waterways present within the Program Area, in Corralitos Creek and Valencia Creek. Surveys were conducted at both streams; lamprey detected at only Corralitos Creek (Alley 2025).
Riffle Sculpin *Cottus gulosus*	-	SSC	S4	Found in high oxygen, cold water streams with rocky/gravel substrate, typically where water flows perennially and does not exceed 26°C. Favors areas with rocks, logs, or overhanging banks for shelter. Lays eggs late winter/early spring under rocks within swiftwater reaches of the stream (Cal Fish).	**Present** Potentially suitable oxygen rich, rocky-bottom streams present within the Program Area at Valencia and Corralitos Creeks. Surveys were conducted at both streams; sculpin detected at only Corralitos Creek (Alley 2025).

Common Name *Scientific Name*	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
Steelhead (Central California Coast DPS) *Oncorhynchus mykiss irideus pop. 8*	FT	SSC	S3/S2	Requires silt-free gravel for spawning; spends the first few years of its life in fresh water before migrating to the ocean. Adults later return to breed in the same freshwater locations where they were spawned (CalFish 2012, NOAA Fisheries 2005).	**Present** Within the Program Area, Corralitos Creek and Valencia Creek are both designated critical habitat and steelhead are known to occur within these watersheds.
AMPHIBIANS AND REPTILES					
California Giant Salamander *Dicamptodon ensatus*	-	SSC	S2S3	Found in wet coastal forests associated with rocky streams, channels, and springs. Aquatic adults and larvae found between rocks, under surface litter, or in underground tunnels. Aquatic larvae are found in streams and occasionally lakes and ponds (Stebbins and McGinnis 2012, Nafis 2018).	**Possible** Suitable habitat is present within redwood forest west of Freedom Blvd, especially along Valencia Creek and Corralitos Creek, situated at the western and southeastern boundaries of the Program Area, respectively. Observed during surveys at both streams (Alley 2025). Other occurrences include Aptos Creek (2.15 miles northwest of the Program Area) and Upper Corralitos Creek (4.0 miles north of the Program Area). Two individuals were collected in 1959 along Valencia Creek at an unspecified location (CNDDB 2025a, b).
California Red-legged Frog *Rana draytonii*	FT	SSC	S2S3	Requires the presence of surface water until mid to late summer for reproduction; occupies semi-permanent and/or perennial water with standing or slow-moving flows. Inhabits a variety of uplands including grassland, oak woodland, scrub, mixed hardwood, redwood forest, willow riparian and may find cover temporarily or for many weeks in leaf litter, dense grassland, small mammal burrows and other features that help maintain cool and moist conditions. Often uses springs, streams and other aquatic habitats during the non-breeding season. Adults are known to travel up to 2 miles overland between non-breeding and breeding aquatic sites (USFWS 2002, Fellers and Kleeman 2007, USFWS 2010).	**Present** CRLF has been documented as a breeding species at only three ponds in the Program Area – Calabasas Pond, Millsap Pond and a pond on private property at 437 Larkin Valley Road. CRLF adults not necessarily associated with the breeding ponds noted above have been regularly documented in Larkin Valley. Four individuals were found dead along a stretch of Larkin Valley Road in 2016 in proximity to the breeding pond at 437 Larkin Valley Road (Caris, pers. obs.). At least three individuals were present along Larkin Valley Creek at 140 Travis Lane from September to November 2023 (Allaback, pers. obs.). A road-killed CRLF was recorded along Buena Vista Drive 0.3 miles northeast of Larkin Valley Road in 2017 (Occurrence 1596 [CNDDB 2025]). A subadult CRLF was found in a spring box near Trabing Road in 2008 (Occurrence 2381 [CNDDB 2025]). An adult CRLF was observed at a pond north of Larkin Valley Road in 2008 (RCD & CDFW 2013). The Program Area is not within an area designated as Critical Habitat for CRLF (USFWS 2010). The Program Area provides suitable aquatic breeding and nonbreeding habitat as well as upland/movement/dispersal habitat.
California Tiger Salamander *Ambystoma californiense*	FT	SE	S3	Seasonal pools, stock ponds and detention basins, and ditches with nearby upland grasslands and/or open woodlands within Central California. May migrate over 1 mile to reach breeding ponds (USFWS 2003).	**Not Expected** Nearest breeding locations are Buena Vista Pond (0.4 mile southwest of the Program Area) and Green's Pond, Prospect Pond, and Ellicott Pond (1.0 to 1.5 miles southwest of the Program Area). Most if not all of the Program Area is outside historic habitat; intervening agricultural fields and roads, including State Route 1 (non-habitat), fragmentation of existing habitat, and maximum migration distance presumably precludes presence within the Program Area.

Common Name *Scientific Name*	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
Foothill Yellow-legged Frog (Central Coast DPS) Rana boylii pop. 4	FT	SE	-	Stream obligate. Requires shallow rocky streams with at least some direct sunlight in a variety of habitats, including valley-foothill hardwood or hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow. Requires at least some cobble sized substrate for breeding.	**Not Expected** Suitable habitat not present. No known occurrences within the Program Area. One individual collected along Buena Vista Drive in 1970 (approximately 0.5 miles south of the Program Area) but lack of suitable habitat here may indicate a mistake in the listed location of the record (CNDDB 2025). Three juveniles observed along Aptos Creek, Nisene Marks, in 1998 (approximately 2.0 miles north of the Program Area) (CNDDB 2025) but the majority of FYLF within the County occur in Soquel Creek and its tributaries, over 4 miles from the Program Area.
Santa Cruz Black Salamander *Aneides niger*	-	SSC	S3	Mixed deciduous woodland, coniferous forests, and coastal grasslands. Found under rocks near streams, in talus, under damp logs, and other objects. In Santa Cruz, found near water under rocks near streams, seeps, and springs (Stebbins and McGinnis 2012, CDFW CWHR 2014 and 2016, Nafis 2024).	**Possible** Program Area is outside of known range of species (Reilly and Wake 2019) but due lack of survey effort and difficulty detecting the species, range may be larger than currently understood. Potential habitat is present in the western portion of the Program Area in redwood forest proximate to Valencia Creek. Known from Aptos Creek, and has been documented as recently as 2012, approximately 1.8 miles northwest of the project area (Occurrence 73 [CNDDB 2025]). An adult SCBS was documented in Eureka Canyon near Clipper Gulch in 2016, approximately 2.0 Miles northwest of the Program Area (Steiner pers. obs.). The species was collected from Browns Creek in 1952, approximately 2.4 miles northeast of the Program Area (Occurrence 71 [CNDDB 2025]). SCBS was reported from the stream along Green Valley Road in 2014, approximately 2.7 miles east of the Program Area (Occurrence 74 [CNDDB 2025).
Santa Cruz Long-toed Salamander *Ambystoma macrodactylum croceum*	FE	SE/FP	S2	Shallow ponds with emergent and submerged vegetation for cover during the aquatic phase of their life. In terrestrial phase, require woodlands with a dense understory and abundant burrows (Ruth 1988, USFWS 1999 and 2009 2012).	**Present** Program Area provides suitable breeding (ponds) and upland (oak woodland) habitat. There are 9 known breeding ponds within the Program Area: Calabasas, Merk, Millsap, Olives, Racehorse, Shadowmere Way, Suess, Tucker, and Winterwind Way. May be found in and around these ponds or dispersing or migrating to and from upland habitats.
Northwestern Pond Turtle (NWPT)[9] *Actinemys marmorata*	FPT	SSC	-	Found in ponds, marshes, rivers, streams, and irrigation ditches containing aquatic vegetation; usually seen sunning on logs, banks, or rocks. Moves up to 3-4 miles within a stream system, especially during "walk-abouts" before a female lays eggs; nests up to several hundred feet from aquatic habitat, in woodlands, grasslands, or open forest (Holland and Bury 1998).	**Present** Several NWPT were regularly observed along the perennial reach of lower Larkin Valley Creek in proximity to nesting habitat periodically in the 2000s (Allaback, pers. obs.). An individual was also observed at Tucker Pond in 2017 but did not remain onsite (Allaback, pers. obs.). The species is also known to occur in Pinto Lake (approx. 0.7 miles east of the Program Area), Gallighan Slough (approx. 1.3 miles south of the Program Area), and Struve Slough (approx. 1.4 miles south of the Program Area) (CNDDB 2025a, b). Ponds within the Program Area provide potential aquatic habitat, particularly in proximity to lower Larkin Valley Creek, and adjacent upland dominated by grassland provides nesting habitat.

[9] The Western Pond Turtle has been subject to ongoing taxonomic disagreement. Currently, USFWS documents the transition between northwestern pond turtle (NWPT) and southwestern pond turtle (SWPT) (*Actinemys pallida*) as occurring near the Salinas River outlet to the Pacific Ocean.

Common Name *Scientific Name*	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
BIRDS					
Allen's Hummingbird *Selasphorus sasin* (nesting)	BCC	-	-	Breeds exclusively in the narrow coastal fog belt primarily within coastal scrub and riparian. Shows preference for nesting in densely vegetated areas with at least some tree cover, typically near water sources (Grinnell and Miller 1944).	**Present** Flowering plants in and around the Program Area provide foraging habitat. Trees and shrubs, especially those adjacent to water bodies, provide potential nesting habitat. Known to nest in eucalyptus forest. Observed during 2025 surveys.
Bald Eagle *Haliaeetus leucocephalus* (nesting and wintering)	-	SE/FP	S3	Typically breeds in forested areas adjacent to large bodies of water. Nests in trees in mature and old-growth forest with some habitat edge, relatively close (usually <2 km) to water with suitable foraging opportunities (diversity, abundance, and vulnerability of prey base). For perching, prefers tall, mature coniferous or deciduous trees with a wide view of the surroundings (Buehler 200).	**Possible** Numerous sightings off Merk Road, Amesti Road, and Storey Road in Corralitos (northeast boundary of the Program Area). Additional sightings off of Wildwood Drive in Larkin Valley (central Program Area) (eBird 2025). Known to nest approximately 1.5 miles south of the Program Area on Gallighan Slough. Nesting uncommon in Santa Cruz County but suitable habitat is present.
California Thrasher *Toxostoma redivivum* (nesting)	BCC	-	-	Inhabits chapparal and, to a lesser extent, sagebrush. May also be found in chapparal adjacent riparian and oak woodland. Nest often hidden within dense shrub (Grinnell 1917, Linsdale 1947).	**Possible** Scrub and chapparal within the Program Area provide potential foraging and nesting habitat. Numerous occurrences within the Program Area (eBird 2025).
Golden Eagle Aquila chrysaetos (nesting and wintering)	-	FP	S3	Resident in open mountains, foothills, canyons, or plains with abundant small mammal prey. Nests in a mass of sticks on cliffs or in trees.	**Possible** Numerous occurrences on Buena Vista Drive in the southern region of Program Area with recorded roosting observations (eBird 2025). Observations off Larkin Valley Road of two juveniles and one adult. Numerous observations off Merk Road and Corralitos Road, in the eastern region of the Program Area (eBird 2025). Nesting uncommon in Santa Cruz County but suitable habitat is present.
Grasshopper Sparrow *Ammodramus savannarum* (nesting)	-	SSC	S3	Associated with short to medium-height grasslands with little or no shrub cover and patchy bare ground. May be found in pastures and agricultural fields. Feeds on insects and seeds. Nest on ground in grassland habitats between April and May (Vickery 1996). For breeding prefers large grasslands of at least 30-100 acres (Audubon 2023)	**Possible** Sightings recorded within the Program Area in Larkin Valley and near Merk Pond (eBird 2025). Grasslands provide potential habitat. Not expected within the more forested habitats that cover much of the Program area.
Lawrence's Goldfinch *Spinus lawrencei* (nesting)	BCC	-	S3S4	Typically occupies arid and open woodlands within the near vicinity of three habitat components: chaparral or other brushy areas; tall annual weed fields; and water source such as stream, small lake, or farm pond (Watt et al. 2016).	**Possible** Three occurrences recorded off Merk Road, Corralitos, (2014, 2015, 2020) near the northeast boundary of the Program Area (eBird 2025). Nesting on the central coast is uncommon but suitable habitat is present.

Common Name *Scientific Name*	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
Northern Harrier *Circus cyaneus* (nesting)	-	SSC	S3	Ground nester; grasslands, sloughs, wet meadows, savanna, prairies and marshes (Smith et al. 2011).	**Not Expected** Limited marginal breeding habitat in the southeastern and northeastern portions of the Program area but this species is likely to prefer the more open habitats outside of the Program area. Most of the Program area consists of forested habitat not suitable for nesting.
Nuttall's Woodpecker *Picoides nuttallii* (nesting)	BCC	-	-	Occurs primarily in oak and riparian woodland. May also be found foraging in woodland adjacent chaparral. Excavates nest cavities in soft or dead wood (Short 1971).	**Present** Observed during surveys of the Program Area. Numerous occurrences throughout the Program Area (eBird 2025). Woodlands within the Program Area provide potential foraging and nesting habitat. Observed during 2025 surveys.
Oak Titmouse *Baeolophus inornatus* (nesting)	BCC	-	-	Nests in natural cavities, old woodpecker holes, artificial nest boxes from mid-March through April. Inhabits oak woodlands along the Pacific Slope. Requires elevated perches for foraging and eating (Cicero 2000, Cicero et al. 2017).	**Present** Observed during surveys of the Program Area. Numerous occurrences throughout the Program Area (eBird 2025). Oak woodland and other native woodland habitats within the Program Area provide suitable nesting habitat.
Olive-sided Flycatcher *Contopus cooperi* (nesting)	BCC	SSC	-	Inhabits woodland and forest habitats. Nests in tall trees, generally near the edges and openings to meadows, grasslands, wetlands, and ponds (Altman and Sallabanks 2012).	**Present** Recent occurrences within the Program Area (eBird 2025) include Polo Grounds Park, Lyle Court (Aptos), Aptos High School, Day Valley area, Corralitos Lagoon/Scott County Park, Merk Road, and within the general Larkin Valley area. Most nest in conifers but may use eucalyptus, cottonwoods, or sycamores. Generally nests in tall trees near openings or edges in wooded habitat, often along waterbodies. Suitable breeding habitat is present within the Program Area.
Vaux's Swift (*Chaetura vauxi*) (nesting)	-	SSC	S3	Inhabits coniferous and mixed coniferous forests, preferring old growth stands, especially in coast redwood and Douglas fir. Nests in hollow tree trunks or residential chimneys (Schwitters et al. 2021).	**Possible** May utilize hollowed trees within redwood forest or chimneys in residential areas adjacent to redwood forest for nesting. Uncommon breeder in the County.
Western Burrowing Owl *Athene cunicularia*	BCC	SCE SSC	S3	Found in open areas with low-growing vegetation including annual and perennial grasslands, deserts, open scrub habitats, and agricultural fields with suitable burrows. Burrows of fossorial mammals are an essential component of their nesting and wintering habitat, but they may also use artificial structures such as culverts, openings in asphalt pavement, woody debris/rock piles, and crevices in stacks of straw bales (Poulin et al. 2011).	**Not Expected** Small areas of grassland/prairie within the Program Area provide potential wintering and breeding habitat; however, this species is exceptionally rare in the County and is no longer known to breed in the area. The closest wintering record is from the Watsonville Airport (2018), abutting the southeast corner of the Program Area.
Western Screech-Owl *Megascops kennicottii* (nesting)	BCC	-	-	Common and widely distributed throughout a diverse range of habitats, especially those dominated by deciduous trees and riparian habitat. Nests in tree cavities (Feusier 1989, Noble 1990b, Lehman 1994b).	**Possible** Although more common in the Santa Cruz mountains (eBird 2025), the forested habitats within the Program area could provide potential habitat for this widespread and adaptable species. Multiple recorded occurrences within the Program area.

Common Name *Scientific Name*	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
White-tailed Kite *Elanus leucurus*	-	FP	S3S4	Nests in trees on the margins of open areas including grasslands and sloughs containing a high abundance of small mammals and lizards (Dunk 1995).	**Possible** Numerous eBird (2025) occurrences off Merk Road, Corralitos, near the northeast boundary of the Program Area. Tree stands within and adjacent to the Program Area provide potential nesting habitat. Grasslands with small mammals present provide foraging habitat.
Wrentit *Chamaea fasciata* (nesting)	BCC	-	-	Prefers native scrub and chapparal habitats but will nest in a variety of habitats if a dense understory is present. Non-migratory: pairs often remain on breeding territory year-round (Geupel 1981, Grinnell and Miller 1944, Garrett and Dunn 1981).	**Present** Scrub and chapparal within the Program Area provide potential foraging and nesting habitat. Numerous occurrences throughout the Program Area (eBird 2025). Observed during 2025 surveys.
Yellow Warbler *Setophaga petechia* (nesting)	-	SSC	S3	Breeds in willow dominated riparian and wet deciduous thickets. May nest in disturbed and edge habitats including orchards and parks. Nest is an open cup often placed in small trees such as willow, dogwood, alder, and cottonwood (Campbell et al. 2001, Dunn and Garrett 1997).	**Possible** Riparian zones within the Program Area may provide suitable foraging and nesting habitat. Occurrences in and around Polo Grounds Park, and within the vicinity of Corralitos Lagoon/Scott County Park and Buena Vista Drive (eBird 2025).
nesting birds	-	CFGC	-	Variable	**Present** A wide variety of common nesting bird species are known to breed within the Program areas and may be found throughout all habitat types.
MAMMALS					
Long-legged Myotis *Myotis volans*	-	-	HP	Roosts primarily in large hollow tree snags or live trees with exfoliating bark; also uses rock crevices, mines, and buildings (CDFW CWHRS 1990).	**Possible** Potential roost sites available in trees with exfoliating bark.
Pallid Bat *Antrozous pallidus*	-	SSC	HP	Roosts in rocky outcrops and cliffs, caves, mature tree cavities and/or those with exfoliating bark, and various human structures (WBWG 2024).	**Possible** Potential roosting habitat in woodland and forest habitats, within mature trees with exfoliating bark and/or cavities.
Townsend's Big-eared Bat	-	SSC	HP	Roost sites are highly associated w/ caves and mines; buildings must offer "cave-like" features; known to roost in large tree hollows and under bridges (WBWG 2017).	**Possible** Large hollowed trees within the Program area may provide potential roost habitat.
Western Red Bat *Lasiurus blossevillii*	-	SSC	HP	Roosts in foliage, primarily in riparian and wooded habitats (CDFW CWHRS 1990).	**Possible** Potential roosting habitat present in the woodland and forest habitats, especially along the streams within the Program area. While more closely associated with riparian, this species has been documented utilizing eucalyptus (Pierson 2004).
common roosting bat species	-	CFGC	-	Variable	**Possible** Tree stands and human structures provide potential roosting habitat for a variety of common bat species.

Common Name *Scientific Name*	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
San Francisco Dusky-footed Woodrat *Neotoma fuscipes annectens*	-	SSC	-	Associated with riparian, oak woodland and redwood forest habitats and edge habitats. Builds houses from sticks and leaves under or in buildings and trees, in hollow trees, or in tree canopy (Sakai and Noon 1993).	**Present** Habitat present within forested and woodland portions of the Program area. Observed during 2025 surveys.
American Badger *Taxidea taxus*	-	SSC	-	Occurs in open, uncultivated grasslands and meadows, and open stages of shrub and forest habitats with dry with friable soils. Forages on burrowing rodents, insects, and ground nesting birds (CDFW CWHR 2008, Quinn 2015).	**Possible** Observed in 2008 in lower Larkin Valley but not present during surveys in subsequent years and presumed to have been an outlier (Allaback, pers. obs.). Potential habitat is present within the Program Area but the species is unlikely to become established since the available habitat is highly fragmented by agriculture, roads, and other development.

NOTES:

Federal Status

FE = Endangered: Any species which is in danger of extinction throughout all, or a significant portion of its range (USFWS 2018a).

FT = Threatened: Any species, which is likely to become an endangered species within the foreseeable future throughout all, or a significant portion of its range (USFWS 2018a).

FC = Candidate: Candidate for listing under the federal endangered species act. Candidate species are being reviewed by USFWS to determine if listing is warranted.

FPT = Proposed Threatened: Proposed for listing under the federal endangered species act.

BCC = Species of migratory nongame birds that are considered to be of concern in the United States because of (1) documented or apparent population declines, (2) small or restricted populations, (3) dependence on restricted or vulnerable habitats (USFWS 2008).

State Status

SE = Endangered: A native species or subspecies of animal which is in serious danger of becoming extinct throughout all, or a significant portion of its range, due to loss of habitat, change in habitat, over exploitation, predation, competition and/or disease (CDFW 2018a).

ST = Threatened: A native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Fish & G. Code, §2067 [CDFW 2018a, Meese 2018 (tricolored blackbird-listing pending)]

SCE= Candidate Endangered: A species that is being considered for listing and is temporarily afforded the same protections as listed species.

SSC = CDFW Species of Special Concern: Designated because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction (CDFW 2018b, CDFW CNDDB 2018).

FP = Fully Protected[10]: State's initial protection for animals that were rare or faced possible extinction. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

CFGC = California Fish and Game Code (2016):
3503 - Protects active nests and eggs of birds from take, possession, or needless destruction
3503.5. - Protects birds of prey (Orders Falcinoformes and Strigiformes)
Section 86; 2000; 2014; 3007; 4150, and Title 14 CCR - Protects non-listed bat species and their roosting habitat, including individual roosts and maternity colonies.

Other

HP = Considered "High Priority" on the Western Bat Working Group's (WBWG) Western Bat Species Regional Priority Matrix (2017).

NatureServe Ranking[11]: S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.
S4 = Apparently Secure – At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

[10] More information on Fully Protected species and the take provisions can be found in the Fish and Game Code, (birds at §3511, mammals at §4700, reptiles and amphibians at §5050, and fish at §5515). Additional information on Fully Protected fish can be found in the California Code of Regulations, Title 14, Division 1, Subdivision 1, Chapter 2, Article 4, §5.93.

[11] Originally developed by The Nature Conservancy and now maintained and recently revised by NatureServe. Includes a **Global rank** (G-rank), over the taxon's entire distribution, and a **State rank** (S-rank), over its state distribution. For subspecies and varieties, there is also a "T" rank describing the global rank for the infraspecific taxon. Criteria are used to assign element ranks, from G1 to G5 for the Global rank and from S1 to S5 for the State rank, taking into account rarity, threats, and trends (CDFW CNDDB 2018).

5.0 POTENTIAL IMPACTS AND PROTECTIVE MEASURES

Program activities have the potential to impact biological resources including sensitive habitats, plants, and wildlife species protected under federal, state, and local regulations. Analysis of potential Program-related impacts considers the activities listed below.

5.1 PROGRAM ACTIVITIES CONSIDERED DURING IMPACT ANALYSIS

Eucalyptus/Invasive Weed Removal

Mechanical Felling
Hand-Felling
Girdling
Herbicide Application
Stump Removal
Mastication of Eucalyptus Saplings/Invasive Weeds
Invasive Weed Removal with Hand Tools

Biomass Management

Chipping
Pile Burning
Broadcast Burning/Prescribed Burning
Air Curtain Burner
Biochar Production
Bioenergy Production
Large Woody Debris Retention
Creation of Firewood

Project Area Access and Staging

Skid Trails and Roads
Equipment Access
Equipment Staging

Restoration Activities

Management of Eucalyptus Resprouts and Seedlings by Herbicide and Hand Pulling
On-going Management of Other Invasive Plants by Herbicide Application, Hand Tools, and Hand Pulling
Replanting of Native Vegetation from Seed or Container Plants
Erosion Control (Weed-free Straw Wattles, Jute Netting, Native Seed-mix)
Broadcast Burning/Prescribed Burning

5.2 General Impact Assessment

Program activities are anticipated to result in short- and medium-term adverse potential impacts, whereas restoration of native habitats after eucalyptus removal are anticipated to result in medium- and long-term beneficial potential outcomes. While eucalyptus groves would be replaced with native habitats through natural recruitment and active restoration and enhancement activities, regeneration of native woodland and forests would take decades to achieve a similar stature, shading, and provision of, albeit more diverse and productive, ecosystems services. The felling of mature forest will result in temporal habitat loss associated with time to maturity for each potential succeeding habitat type (1-5 years for native grassland and aquatic features; 5-10 years for scrub habitats; 20-40 years for oak woodland, mixed evergreen or redwood forest habitats).

With large scale eucalyptus removal, impacts include the immediate loss of tree canopy, wildlife cover, shelter, and foraging habitat, including abrupt changes in temperature and climate regulation, shading, and soil microbial habitat, as well as larger scale ecosystem services such as loss of wildlife movement corridors and decrease in habitat connectivity where bare ground deters movement due to lack of shelter and cover or results in increased predation. In addition, bare ground associated with large-scale removal is less able to retain soil moisture and is vulnerable to erosion, run-off, and sedimentation, and may result in water quality impacts to nearby waterbodies.

In some cases, tree removal will also include the removal of non-native understory species. Many stands of eucalyptus in the Program Area support invasive weeds under the canopy, in openings, or along the edges of the groves, including species classified as moderately to highly invasive by the California Invasive Plant Council (Cal-IPC) and USDA. Where present, Jubata grass, French broom, scotch broom, Italian thistle, English ivy, periwinkle, Cape ivy and other invasive weeds would be removed along with the eucalyptus trees to allow for restoration of native habitat. The removal of invasive weeds would be a temporary impact that would reduce cover, shelter, and potentially expose bare ground in the short run. It is anticipated that native understory would begin to establish within 1 year and provide improved ecosystems services within 3 years; therefore removal of non-native understory would be considered a beneficial impact with only short-term negative impacts.

Medium- and long-term beneficial outcomes of the Program include the regeneration of native oak savannas, woodlands and forests. The beneficial potential effects associated with Program activities include the conversion and/or succession of eucalyptus stands towards native, ecologically diverse habitats with associated physical attributes including, but not limited to, a multitiered canopy with variable shading, a full suite of accompanying understory flora (annual and perennial grasses, forbs, and shrub species), and thatch/litter. These tiered habitat assemblages are anticipated to provide shelter, cover, and foraging opportunities for wildlife from invertebrates to amphibians to birds and mammals and increase connectivity to other nearby habitats. The presence of refugia, such as fallen logs and moist leaf litter along tree roots, and small mammal burrows associated with mature oak habitats provide upland habitat for SCLTS.

Additional medium- and long-term beneficial outcomes include the restoration of other native habitat types based on site-specific biotic and abiotic conditions including soils, topography, aspect, adjacent intact or relatively intact native habitats. Restoration of other native habitats will provide similar beneficial impacts to

the restoration of oak woodland. Generalized native habitat types that are present in the Program Area and are included as reference habitats for Program restoration goals include those native habitat types listed in Section 5.2 Habitat Types above, including mixed evergreen forest, redwood forest, coastal scrub, chaparral, and native grassland (prairie), as well as aquatic features (pond/marsh, wetland/seep, stream) where applicable to an individual Project Area (e.g., eucalyptus stand within the Program Area).

Restoration of these diverse native habitats, taken together over time will replace the diminished habitat values of eucalyptus groves with an ecologically rich and diverse native habitat mosaic. In addition, a portion of restored native habitat may be protected through conservation plans, easements, or agreements.

Although eucalyptus groves are known to provide dispersal habitat and may provide marginal upland habitat for SCLTS, these areas are utilized less frequently by the species than native oak woodland. This may be because they lack the diversity of burrowing small mammals, the tunnels of which are utilized by SCLTS as underground refugia (Biosearch 2016b). The regeneration of native habitat is a key step towards the recovery of SCLTS and creates the potential for the expansion of the current occupied range of the species. This beneficial potential impact is the cornerstone of the Program.

Because eucalyptus trees uptake large amounts of surface, subsurface, and groundwater compared to many native habitat types, through eucalyptus removal, more water will be retained in aquatic features and riparian corridors.

Native habitats provide benefits to private landowners, the public, and local jurisdictions in that they are less vulnerable and more resilient to fire and less vulnerable to destructive events (limb and tree fall) associated with high winds. In general native habitats reduce risks to homes and other infrastructure and increase public safety compared to the eucalyptus stands that would be replaced. These factors are especially important with the increase in catastrophic events associated with climate change.

5.3 Site-Specific Considerations for Impact assessment

Considerable variability exists between the eucalyptus stands in the Program Area; therefore, Program activities will be tailored to the conditions in each specific Project Area and, consequently, impacts will also vary according to the site conditions and the techniques applied. Site-specific Program activities are likely to be variable depending on slope, access, and adjacent habitat types. Also considered are the presence of native habitats or individual native trees within openings in the eucalyptus groves or immediately adjacent to eucalyptus groves that could be impacted during removal activities. Program activities may range from the removal of several trees to large scale removal of eucalyptus stands.

Many stands of eucalyptus in the Program Area intergrade with native habitats, and/or oak trees are present at the edges of the groves, under the eucalyptus canopy, or in openings within the groves. Often these stands support at least some native understory, such as coffeeberry, California blackberry, and poison oak. Where native tree, scrub, and understory species are present, these resources would be protected to the extent feasible, through modification of techniques employed for tree removal (e.g. limbing and lowering limbs, tying off trunks to control the direction of the fall, and positioning access road and skid trails to avoid native plant species). Because these intact native plants are essential to restoration (for maintaining site conditions suitable to and as sources for native plant recruitment) every effort would be made to conserve existing native

habitats and species. This approach would reduce impacts associated with tree removal and temporal loss. Where native understory is present, impacts to understory associated with tree removal are anticipated to be temporary and native understory is expected to regenerate within one year.

Where Project Areas are located near aquatic features, site-specific activities would be further constrained to avoid and minimize impacts to sensitive amphibians and their habitats, including aquatic breeding (and for CRLF, non-breeding aquatic) habitats, adjacent refuge habitats (riparian and upland), over-summering habitats for SCLTS (riparian, coast live oak woodland, coastal scrub and chapparal), and movement and dispersal habitat. These constraints are summarized in **Section 5.4** and discussed in more detail in the relevant impact sections below.

5.4 Matrix of Sensitive Biological Resources and Protective Measures

Protective measures, including pre-activity survey requirements, have been identified to avoid, minimize, or mitigate potential impacts to sensitive biological resources to a less-than-significant level. These measures are summarized in **Table 3**. All projects implemented under the Program must comply with the protective measures outlined in **Table 3** and detailed in the sections below.

Table 3 summarizes sensitive resources with potential to occur within the Program Area, the habitat types in which they would occur, and the site specific conditions under which these resources would be considered during Program implementation or during individual projects conducted under the Program. If a proposed Project Area meets the conditions identified in the table (i.e., suitable habitat is present within or near the proposed Project Area for a given biological resource), then additional surveys for that resource would be required as a condition of participation in the Program and to comply with local, state, and federal regulations. A qualified biologist would evaluate the proposed individual Project Area for the sensitive habitats, plants, and wildlife species listed in the table to determine if the sensitive resources may be present.

Where a sensitive resource is observed or potential habitat is determined to be present, the protective measures summarized in **Table 3** and described in greater detail in the Impacts section below would be implemented during tree removal and restoration activities. Best Management Practices (BMPs) would also be considered formal conditions of participation in the Program, when applicable to individual Project Areas, and would ensure compliance with all applicable regulations. The RCD or their agent (a qualified biologist) would oversee Program implementation on the Project level and would work with Program participants to implement relevant surveys and protective measures during Project implementation.

Table 4 summarizes recommended timing for performing tree removal activities to best avoid impacts to the sensitive biological resources which may be present in a given Project Area.

Table 3. Sensitive Resources with potential to occur by supportive Habitat Types[12], Conditions under which these resources should be considered, and Summary of Surveys Required and Protective Measures, if detected, South County Habitat Restoration Program Area, Santa Cruz County, California.

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
HABITATS																					
Sensitive Habitats[13]				X[14]	X			X	X	X	X	X	X	X						Sensitive habitat is in or adjacent to the work area and/or will be used for staging/access.	Assess potential impacts to sensitive habitats. Avoid permanent impacts (tree removal/clearing/grubbing/ ground disturbance/earth movement) to the extent feasible. Minimize the footprint and protect sensitive habitats during work, which may include ESA fencing.
Aquatic Features/ Associated Riparian											X	X	X	X						All Aquatic Features within the Program Area	A USFWS/CDFW-approved biologist will assess potential impacts. When the Project Area is within 50 meters of aquatic habitat, a USFWS/CDFW-approved biologist or approved biological monitor will be present during all activities. When the Project Area is within 200 meters, a USFWS/CDFW-approved biologist or approved biological monitor will conduct a morning site check each day. Do not work during the rainy season.
PLANT SPECIES																					

[12] See also Figure 2 and Figure 3.

[13] Details on sensitive habitats are provided in the Section 5.2 of this Biotic Assessment.

[14] In discrete locations rare scrub species (e.g. Hooker's manzanita) occur within eucalyptus forest, where maritime chaparral intergrades with eucalyptus.

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Arctostaphylos andersonii Santa Cruz manzanita	-	-	1B.2	X		X			X	X										Eucalyptus intergrades with suitable habitat and/or openings in woodland/forest are present.	Conduct a rare plant survey. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant younger/smaller individuals and stockpile seed if larger individuals will be impacted).
Arctostaphylos hookeri ssp. *hookeri* Hooker's manzanita	-	-	1B.2	X		X			X	X										Eucalyptus intergrades with suitable habitat and/or openings in woodland/forest are present.	Conduct a rare plant survey. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant younger/smaller individuals and stockpile seed if larger individuals will be impacted).
Arctostaphylos pajaroensis Pajaro manzanita	-	-	1B.1							X										Eucalyptus intergrades with suitable habitat and/or openings in woodland/forest are present.	Conduct a rare plant survey. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant younger/smaller individuals and stockpile seed if larger individuals will be impacted).
Calandrinia breweri Brewer's calandrinia	-	-	4.2						X	X										Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed (unlikely), avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (topsoil and seed collection).

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Ceanothus rigidus Monterey ceaothus	-	-	4.2	X	X				X	X										Eucalyptus intergrades with suitable habitat and/or openings in woodland/forest are present.	Conduct a rare plant survey. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant younger/smaller individuals and stockpile seed if larger individuals will be impacted).
Centromadia parryi ssp. *congdonii* Congdon's tarplant	-	-	1B.2					X												Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed (unlikely), avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (topsoil and seed collection).
Chorizanthe pungens var. *pungens* Monterey spineflower	FT	-	1B.2		X			X	X	X								X		Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint, coordinate with the USFWS, and implement salvage measures (topsoil and seed collection).

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
Chorizanthe robusta var. *robusta* robust spineflower	FE	-	1B.1		X	X		X	X											Suitable habitat (with openings in woodland/forest) is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint, coordinate with the USFWS and implement salvage measures (topsoil and seed collection).
Elymus californicus California bottle-brush grass	-	-	4.3	X	X	X				X	X									Suitable habitat (with openings in woodland/forest) is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant individuals and/or collect topsoil and seed).
Holocarpha macradenia Santa Cruz tarplant	FT	SE	1B.1					X												Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint, coordinate with the USFWS, and CDFW, and implement salvage measures (transplant individuals and/or collect topsoil and seed).

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	-	-	1B.1		X			X	X	X										Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant individuals and/or collect topsoil and seed).
Hosackia gracilis harlequin lotus	-	-	4.2					X						X						Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (transplant individuals and/or collect topsoil and seed).
Leptosiphon grandiflorus large flowered leptosiphon	-	-	4.2		X	X		X	X							X				Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
Lomatium parvifolium small-leaved lomatium	-	-	4.2	X	X	X			X		X									Suitable habitat (with openings in woodland/forest) is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Monardella sinuata ssp. nigrescens northern curly leaved monardella	-	-	4.2			X		X	X	X										Suitable habitat (with sandy openings in woodland/forest) is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Pedicularis dudleyi Dudley's lousewort	-	SR	1B.2		X	X		X		X										Suitable habitat (with openings in woodland/forest) is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint, coordinate with CDFW and implement salvage measures (collect topsoil and seed).

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah	-	-	4.2		X	X		X		X				X						Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Piperia michaelii Michael's rein orchid	-	-	4.2	X	X	X			X	X										Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect tubers and seed).
Plagiobothrys chorisianus var. chorisianus Choris' popcorn-flower	-	-	1B.2					X	X	X										Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Plagiobothrys chorisianus var. *hickmanii* Hickman's popcorn-flower	-	-	4.2		X	X			X	X		X		X						Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Plagiobothrys diffusus San Francisco popcornflower	-	SE	1B.1					X												Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Sanicula hoffmannii Hoffmann's sanicle	-	-	4.3		X	X			X	X										Suitable habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Sidalcea malachroides maple-leaved checkerbloom	-	-	4.2		X	X		X	X		X									Suitable sandy habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Trifolium buckwestiorum Santa Cruz clover	-	-	1B.1		X	X		X						X						Suitable (moist) habitat, edge habitat along woodlands/forest are adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint and implement salvage measures (collect topsoil and seed).
Trifolium polyodon Pacfic Grove Clover	-	SR	1B.1			X		X						X						Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Conduct a rare plant survey during the appropriate phenological period to detect plants/blooming. If observed, avoid impacts, especially when soils are saturated. If avoidance is not feasible minimize the disturbance footprint, coordinate with CDFW, and implement salvage measures (collect topsoil and seed).
INVERTEBRATES																					
Crotch's bumble bee *Bombus crotchii*	-	SCE	S2					X	X	X					X		X	X	X	Suitable habitat is adjacent to work area and/or will be used for staging/access.	Survey during active colony period (April-August) in advance of work, regardless of what time of year work will be conducted. Consult with CDFW if observed; Protect active nest sites.

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																	
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
FISH SPECIES																					
Pacific Lamprey *Entosphenus tridentatus*	-	SSC	S3										X							Suitable stream habitat is adjacent to work area.	Assess potential impacts. Avoid direct impacts; Implement erosion/sediment control/water quality protection measures to avoid/minimize indirect impacts. Consult with CDFW.
Riffle Sculpin *Cottus gulosus*	-	SCC	S3/S2										X							Suitable stream habitat is adjacent to work area.	Assess potential impacts. Avoid direct impacts; Implement erosion/sediment control/water quality protection measures to avoid/minimize indirect impacts. Consult with CDFW.
Steelhead (CCC and SCC DPS) Oncorhyynchus mykiss irideus pops. 8 and 9	FT	SSC	S3/S2										X							Valencia Creek or Corralitos Creek is adjacent to the work area.	Assess potential impacts. Avoid direct impacts; Implement erosion/sediment control/water quality protection measures to avoid/minimize indirect impacts. Consult with CDFW and NMFS.
AMPHIBIANS AND REPTILES																					
California giant salamander *Dicamptodon ensatus*	-	SSC	S2S3			X	X				X		X							Suitable habitat is adjacent to work area and/or will be used for staging/access.	Assess potential impacts. Conduct pre-activity survey within 48 hours of work. Avoid suitable habitat features; Relocate terrestrial individuals as needed with approval of CDFW.
Santa Cruz black salamander *Aneides niger*	-	SSC	S3								X	X	X	X						Suitable (moist) habitat is adjacent to work area and/or will be used for staging/access.	Assess potential impacts. Conduct pre-activity survey within 48 hours of work. Avoid suitable habitat features; Relocate animals as needed with approval of CDFW.

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																	
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Santa Cruz long-toed salamander *Ambystoma macrodactylum croceum*	FE	SE/FP	S2	X	X	X	X	X	X	X	X	X	X	X		X	X			All Activities within the Program Area.	Assume presence for all work within the Program Area. A USFWS/CDFW-approved biologist will assess potential impacts. When the Project Area is within 50 meters of known/potential aquatic habitat (**Figure 3**), a USFWS/CDFW-approved biologist or approved biological monitor will be present during all activities. The biologist will conduct a pre-activity visual survey for SCLTS by checking under accessible woody debris and inspect any areas of surface disturbance created during project activities. If observed, with authorization from the USFWS and CDFW, relocate to nearest appropriate habitat. Note that visual surveys are insufficient to report a negative finding since the species is typically underground during the dry season. When the Project Area is within 200 meters, a USFWS/CDFW-approved biologist or approved biological monitor will conduct a morning site visual ground survey each day and be on-call if a SCLTS is observed by project personnel. Do not work during the rainy season. Only minimally-invasive Eucalyptus removal techniques shall be used in groves that provide upland habitat. More aggressive removal methods may be used in dispersal habitat.

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																	
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
California red-legged frog Rana draytonii	FT	SSC	S2S3		X	X	X	X	X	X	X	X	X	X		X	X			All Activities within 1.6 km of known/potential breeding habitat.	Assess potential impacts. Conduct pre-activity survey within 48 hours of work. Do not work during the rainy season. If observed, with authorization from USFWS, relocate animals as needed.
Northwestern pond turtle	FPT	SSC	S3					X			X	X	X	X						All Activities within 100 m of known/potential aquatic habitat.	Assess potential impacts, include both aquatic and nesting habitat. Conduct pre-activity survey within 48 hours of work. If nesting activity is observed in grassland or woodland to be used for laydown or access roads, avoid these areas during during nesting season. If observed in aquatic habitat, avoid direct impacts and/or consult and obtain authorization from CDFW if relocation is required. Implement erosion/sediment control/water quality protection measures to avoid/minimize indirect impacts.
BIRDS																					
bald eagle *Haliaeetus leucocephalus* (nesting and wintering)	-	SE/FP	S3	X	X	X	X									X				All Activities	Pre-activity survey for nest sites (protected year-round). If observed (unlikely) avoid nest site. Buffer active nest site by 400 meters or consult with USFWS for a reduced buffer of 100-200 meters with biological monitoring.
golden eagle Aquila chrysaetos (nesting and wintering)	-	FP	S3	X	X	X	X	X								X				All Activities	Pre-activity survey for nest sites (protected year-round). If observed (unlikely) avoid nest site. Buffer active nest site by 400 meters or consult with USFWS for a reduced buffer of 100-200 meters with biological monitoring.

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)**
northern harrier *Circus cyaneus* (nesting)	-	SSC	S3					X							X					Activities during Breeding Bird Season if suitable habitat is adjacent to work area and/or will be used for staging/access.	Pre-activity survey for breeding activity during the breeding season. If observed, buffer active nest site by 100 meters or consult with CDFW for a reduced buffer with biological monitoring.
white-tailed kite *Elanus leucurus*	-	FP	S3S4	X	X	X	X									X				All Activities during Breeding Bird Season	Pre-activity survey for breeding activity during breeding season; Consider adjacent suitable foraging habitat for access and staging areas. If observed, buffer active nest site by 100 meters or consult with CDFW for a reduced buffer with biological monitoring. May be sensitive to disturbance depending on nest site location (e.g. remote/quiet).
olive-sided flycatcher *Contopus cooperi* (nesting)	BCC	SSC	-	X	X	X	X				X									All Activities during Breeding Bird Season	Pre-activity survey for nest site during breeding season. If observed, buffer nest site by 20 meters or consult with CDFW and Service for a reduced buffer with biological monitoring.
grasshopper sparrow *Ammodramus savannarum* (nesting)	-	SSC	S3					X												Activities during Breeding Bird Season if suitable habitat (grassland) is adjacent to work area and/or will be used for staging/access.	Pre-activity survey during breeding season. If observed, buffer nest site by 20 meters or consult with CDFW for a reduced buffer with biological monitoring

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Lawrence's goldfinch *Spinus lawrencei* (nesting)	BCC	-	S3S4		X				X	X	X									Activities during Breeding Bird Season if suitable habitat is adjacent to work area and/or will be used for staging/access.	Pre-activity survey for breeding activity during breeding season. If observed, buffer nest site by 20 meters or consult with CDFW for a reduced buffer with biological monitoring.
oak titmouse *Baeolophus inornatus* (nesting)	BCC	-	-	X	X	X										X				All Activities during Breeding Bird Season	Pre-activity survey for nest site (cavity nest) during breeding season. If observed, buffer nest site by 15 meters or consult with the Service for a reduced buffer with biological monitoring.
Allen's hummingbird *Selasphorus sasin* (nesting)	BCC	-	-	X					X	X	X				X	X	X			All Activities during Breeding Bird Season	Pre-activity survey for nest site during breeding season. If observed, buffer nest site by 15 meters or a reduced buffer with biological monitoring.
Western screech-owl *Megascops kennicottii* (nesting)	BCC	-	-	X	X	X	X									X				All Activities during Breeding Bird Season.	Pre-activity survey for nest site (cavity nest) during breeding season. Night survey or acoustic monitoring devices may be required. If observed, buffer nest site by 60 meters or a reduced buffer with biological monitoring.
Nuttall's woodpecker *Picoides nuttallii* (nesting)	BCC	-	-	X	X	X										X				All Activities during Breeding Bird Season	Pre-activity survey for nest site (cavity nest) during breeding season. If observed, buffer nest site by 15 meters or a reduced buffer with biological monitoring.

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																	Associated Surveys (by Qualified Biologist)/ Protective Measures (...Then)
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If...)**	
Wrentit *Chamaea fasciata* (nesting)	BCC	-	-						X	X	X									Activities during Breeding Bird Season if suitable habitat is adjacent to work area and/or will be used for staging/access	Pre-activity survey for breeding activity during breeding season. If observed, buffer nest site by 20 meters feet or a reduced buffer with biological monitoring.
California thrasher *Toxostoma redivivum* (nesting)	BCC	-	-						X	X	X									Activities during Breeding Bird Season if suitable habitat is adjacent to work area and/or will be used for staging/access	Pre-activity survey for breeding activity during breeding season. If observed, buffer nest site by 20 meters or a reduced buffer with biological monitoring.
Yellow warbler *Setophaga petechia* (nesting)	-	SSC	S3								X									Activities during Breeding Bird Season if suitable habitat is adjacent to work area and/or will be used for staging/access	Pre-activity survey for breeding activity during breeding season. If observed, buffer nest site by 20 meters or consult with CDFW for a reduced buffer with biological monitoring.
Nesting Birds	-	CFGC	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	All Activities during Breeding Bird Season	Pre-activity survey for breeding activity during breeding season. If observed, buffer nest site accordingly depending on species or by a reduced buffer with biological monitoring.
MAMMALS																					
Long-legged myotis *Myotis volans*	-	-	HP	X	X	X	X												X	All Activities	Pre-activity survey for roosting bats (bat roost feature assessment, emergence, and/or acoustic monitoring). If observed, avoid and buffer maternity roosts and winter hibernacula. For other roost sites implement protective measures.

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
Western red bat *Lasiurus blossevillii*	-	SSC	HP	X	X	X					X									All Activities	Pre-activity survey for roosting bats (bat roost feature assessment, emergence, and/or acoustic monitoring). If observed, implement protective measures. Consult with CDFW.
Pallid bat *Antrozous pallidus*	-	SSC	HP	X	X	X	X												X	All Activities	Pre-activity survey for roosting bats (bat roost feature assessment, emergence, and/or acoustic monitoring). If observed, avoid and buffer maternity roosts and winter hibernacula. For other roost sites implement protective measures. Consult with CDFW.
Townsend's big-eared bat	-	SSC	HP	X	X	X	X												X	All Activities	Pre-activity survey for roosting bats (bat roost feature assessment, emergence, and/or acoustic monitoring). If observed, avoid and buffer maternity roosts and winter hibernacula. For other roost sites implement protective measures. Consult with CDFW.
common roosting bat species	-	CFGC	-	X	X	X	X				X					X			X	All Activities	Pre-activity survey for roosting bats (bat roost feature assessment, emergence, and/or acoustic monitoring). If observed, avoid and buffer maternity roosts and winter hibernacula or coordinate with CDFW. For other roost sites implement protective measures.

Biological Resource	Status			Habitat Types (Sensitive Habitats in **Bold**)																		
	Federal	**State**	**Other**	Eucalyptus	**Oak Woodland/Oak Savanna**	Mixed Evergreen Forest	Redwood Forest	Non-native/**Native Grassland**	**Coastal Scrub**	**Chapparal**	**Riparian**	**Pond/Marsh**	**Stream**	**Wetland/Seep**	Agricultural /Orchard	Non-native Forest	Ornamental/Landscaping	Ruderal	Developed	**Conditions (If…)**	**Associated Surveys (by Qualified Biologist)/ Protective Measures (…Then)**
SF dusky-footed woodrat *Neotoma fuscipes annectens*	-	SSC	-	X	X	X			X	X	X				X	X	X		X	All Activities	Pre-activity survey for stick houses including in adjacent suitable habitat identified for access and staging. If observed, avoid houses or develop a relocation plan with the approval of CDFW to be implemented during the appropriate time of year (typically late summer/early fall).
American badger *Taxidea taxus*		SSC			**X**	X		X	X	X										Suitable habitat (open stages with friable soils) is within 500 feet of the work area and/or will be used for staging/access.	Assess potential impacts. Conduct pre-activity survey within 2 weeks of work. If burrows are observed, avoid and buffer by 50-100 feet outside of rearing season, or by 250 feet during rearing season (March-August) or until young are independent.

NOTES:

Federal Status

FE = Endangered: Any species which is in danger of extinction throughout all, or a significant portion of its range (USFWS 2025a).

FT = Threatened: Any species, which is likely to become an endangered species within the foreseeable future throughout all, or a significant portion of its range (USFWS 2025a).

FC = Candidate: Candidate for listing under the federal endangered species act. Candidate species are being reviewed by USFWS to determine if listing is warranted or have been deferred for higher priority listings.

FPT = Proposed Threatened: Proposed for listing under the federal Endangered Species Act.

BCC = Species of migratory nongame birds that are considered to be of concern in the United States because of (1) documented or apparent population declines, (2) small or restricted populations, (3) dependence on restricted or vulnerable habitats (USFWS 2008).

State Status

SE = Endangered: A native species or subspecies of animal which is in serious danger of becoming extinct throughout all, or a significant portion of its range, due to loss of habitat, change in habitat, over exploitation, predation, competition and/or disease (CDFW 2025a).

SR =

ST = Threatened: A native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Fish & G. Code, §2067 [CDFW 2025a, Meese 2018 (tricolored blackbird-listing pending)]

SC E= Candidate Endangered: A species that is being considered for listing and is temporarily afforded the same protections as listed species.

SSC = CDFW Species of Special Concern: Designated because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction (CDFW 2025b, CDFW CNDDB 2025).

FP = Fully Protected[15]: State's initial protection for animals that were rare or faced possible extinction. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

CFGC = California Fish and Game Code (2025):
3503 - Protects active nests and eggs of birds from take, possession, or needless destruction
3503.5. - Protects birds of prey (Orders Falcinoformes and Strigiformes)
Section 86; 2000; 2014; 3007; 4150, and Title 14 CCR - Protects non-listed bat species and their roosting habitat, including individual roosts and maternity colonies.

Other

1B.1 = California Native Plant Society (CNPS) List (2025) - Rare, Threatened, or Endangered in California and elsewhere, Seriously endangered in California.

1B.2 = CNPS List (2025) - Rare, Threatened, or Endangered in California and elsewhere, Fairly endangered in California.

4.2 = CNPS List (2025) - Plants of limited distribution: a watch list, Fairly endangered in California.

4.3 = CNPS List (2025) - Plants of limited distribution: a watch list, Not very endangered in California.

HP = "High Priority" on the Western Bat Working Group's (WBWG) Western Bat Species Regional Priority Matrix (2017).

NatureServe Ranking[16]: S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.
S4 = Apparently Secure – At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

[15] More information on Fully Protected species and the take provisions can be found in the Fish and Game Code, (birds at §3511, mammals at §4700, reptiles and amphibians at §5050, and fish at §5515). Additional information on Fully Protected fish can be found in the California Code of Regulations, Title 14, Division 1, Subdivision 1, Chapter 2, Article 4, §5.93.

[16] Originally developed by The Nature Conservancy and now maintained and recently revised by NatureServe. Includes a **Global rank** (G-rank), over the taxon's entire distribution, and a **State rank** (S-rank), over its state distribution. For subspecies and varieties, there is also a "T" rank describing the global rank for the infraspecific taxon. Criteria are used to assign element ranks, from G1 to G5 for the Global rank and from S1 to S5 for the State rank, taking into account rarity, threats, and trends (CDFW CNDDB 2025).

Table 4. *Recommended Construction Timing to avoid/minimize impacts to sensitive biological resources, South County Habitat Restoration Program Area, Santa Cruz County, California.*

Biological Resource	Preferred Period of Avoidance	Preferred Construction Window	Life Events/Functions/ Values to be Protected
Aquatic/Adjacent Riparian	Rainy season approximately October 15–April15[17]	April 16–October 14	Stable banks, slopes, water quality
Fish Species	Rainy season approximately October 15– April15	April 16–October 14	Water quality, Fish migration, Redds, Critical Habitat functions and values
Amphibians	Rainy season approximately October 15– April15 (if an overnight rain event occurs prior to 15 October, work shall cease for the season)	April 16–October 14 (additional restrictions may apply in close proximity to breeding ponds)	Amphibian movement and dispersal
Bird Species	February 1–August 31	September 1–January 31	Nesting activities
Bat Species	November 1–February 15 and May 1–August 31	September 1–October 31	Roosting, especially maternity roosts and winter hibernacula
San Francisco Dusky-Footed Woodrat	October 1–July 31	August 1–September 30	Houses, especially during breeding and rearing
Tree Removal	**October 15–August 31**	**September 1–October 14**	**All**

[17] While this time period aligns with the typical rainy season in coastal Santa Cruz County, agencies such as the Regional Board use other rainy season time periods (October 1 – May 31) that may further restrict Program implementation or require filing a Request for an Early Start or Extended Work Period, if aquatic features requiring agency permits are present.

Within this overall context of potential negative impacts and beneficial effects, and differing site conditions, this assessment evaluates potential impacts to each identified sensitive biological resource and considers both negative and beneficial outcomes, direct and indirect impacts, and short term, intermediate term, and longer-term impacts. Cumulative Program impacts are also considered in **Section 6.7** below.

5.5 Sensitive Plant and Wildlife Species

Would the project:

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

5.5-A Sensitive Plant Species

Table 1 identifies sensitive plant species that are present or have potential to occur within the Program Area. These species may occur within or immediately adjacent to eucalyptus groves and may be affected directly or indirectly by Program activities including eucalyptus removal, access, equipment staging, herbicide application, mastication, and prescribed burning. Chipping and spreading of chips in areas where sensitive plants are present, in some cases may suppress germination of sensitive plants by altering the available nutrient regime or limit the success of sprouts that cannot penetrate a thick dense chip layer. In other cases chipping and spreading of chips may be conducive to the establishment of sensitive plants by creating a mulch layer that retains moisture and suppresses weeds.

With implementation of protective measures including propagation, seeding, transplantation and restoration activities, impacts to sensitive plants will be reduced to a less-than-significant level.

5.5-A Sensitive Plant Species Protective Measures

1. Prior to initiating program activities, perform preconstruction surveys for sensitive plant species within eucalyptus groves, access, and equipment staging areas during the appropriate phenological (blooming) period for plants with potential to occur in those areas.
2. Occurrences of sensitive plants will be mapped using GPS and GIS to facilitate avoidance of these populations to the extent feasible. Sensitive plant occurrences identified in the field will be marked with pin flags or flagging at the outermost extent of the population. All flagging would be removed after completion of Program activities.
3. Where impacts to sensitive plants are unavoidable, a qualified biologist would coordinate with the appropriate regulatory agencies depending on listing/status (i.e., USFWS, CDFW) for

the protection of botanical resources based on the habitat requirements and life history of plants encountered during preconstruction surveys.

- For annual herbaceous plants, implement salvage measures including topsoil and seed collection. Store salvaged materials following CDFA and CNPS nursery standards for collected topsoil and/or seed for dispersal at suitable donor sites for transplantation/restoration near the area of impact.
- For perennial herbaceous plants, implement salvage measures including seed collection for direct dispersal and/or nursery propagation, or collect and transplant individual plants to suitable donor sites near the area of impact.
- For perennial woody shrubs and/or trees, implement salvage measures by collecting and propagating seed in a nursery setting for out-planting at suitable transplantation sites. Directly salvage and transplant individual shrubs and trees, where feasible.

The following general BMPs for the protection and conservation of sensitive plant species will be employed in combination with those listed below for other protected resources, including sensitive habitat types:

4. Minimize removal of, or disturbance to, vegetation outside of the footprint of the eucalyptus grove. To the maximum extent feasible, confine project activities and operation of equipment and vehicles, including site access, staging and parking to the designated staging areas.
5. Clean all equipment caked with mud, soils, or debris from offsite sources or previous project sites prior to staging equipment on site to avoid introducing or spreading invasive exotic plant species. When practicable, remove invasive exotic plants from areas supporting sensitive plants in and adjacent to eucalyptus groves. All equipment used on the premises should be cleaned prior to leaving the site for future projects.
6. Where sensitive plants in or near eucalyptus groves may be impacted by tree removal activities, erect a suitable barrier, (e.g. a temporary construction mesh fencing) to prevent encroachment by vehicles and other construction activity, and to protect the area from inadvertent erosion or stockpiling of materials. The location and integrity of the fencing would be field checked by a qualified botanist/plant ecologist prior to the onset of construction and periodically during the construction period.
7. Prohibit use of non-native, invasive plant species for landscaping or restoration within areas supporting sensitive plants. All species listed as potentially invasive by the California Invasive Plant Council (California Invasive Plant Council 2025) should be included on the prohibited list.
8. Prohibit all use of herbicides, pesticides, or fertilizers within areas supporting sensitive plants. If herbicides will be applied in the adjacent work areas upwind of sensitive plants, implement a drift spray buffer for work. The buffer will depend on the specific herbicide to be used, the method of application (including droplet size), the directions for application on the label (e.g. if buffer reduction mitigation options are recommended and employed), the surrounding conditions (habitat types that would intercept spray drift prior to reaching

sensitive habitats), the conservation status of the rare plant and the potential impact to the population. Buffer reduction mitigation options may include setting applicators to a larger drop size, reducing the application rate, using hand applicators, and using hooded sprayers or drop nozzles (US EPA 2024).

9. Do not access areas supporting sensitive plant occurrences with vehicles or heavy equipment during rain events or when soils are saturated.
10. Ensure that biomass management techniques (chipping, prescribed burning) are suitable for specific sensitive plant species, if present, within or near a given Project Area.

Sensitive Wildlife Species

5.5-B Crotch's Bumble Bee. Crotch's Bumble Bee (CBB) may utilize mammal/insect burrows, thatched grasses, brush piles, rock piles, fallen logs or other substrate consisting of small cavities for nesting and loose soils or leaf litter for hibernation. They rely on a wide variety of flowering annuals and perennials for food.

Program activities, including eucalyptus removal, equipment staging and access in adjacent suitable habitats, stump removal, mastication, prescribed burning, burn piles may impact this species through direct mortality of foraging individuals, hibernating queens, and destruction of nests. The application of herbicide, particularly those containing glyphosate, can negatively impact native bumble bees by disrupting their foraging behavior, navigation, and affecting their ability to reproduce. In addition, herbicides can reduce the availability of flowering plants for foraging bumble bees. Biomass management could also affect Crotch's bumble bee. Chipping and spreading of chips could alter the substrate, preventing bees queens from emerging from their nest or filling in the burrows that this species uses. Pile burning and prescribed burning could generate smoke that disrupts navigation and foraging and increases mortality.

In the long term, restoration of native woodland or forest is likely to improve habitat conditions for this species and may provide recovery opportunities. Downed logs will be retained and restoration may include the planting of thatched grasses.

With implementation of protective measures and native habitat restoration that will follow eucalyptus removal, these impacts will be reduced to a less-than-significant level.

5.5-B Crotch's Bumble Bee (and General Wildlife) Protective Measures

1. For all Project sites, a qualified USFWS/CDFW-approved biologist will conduct an environmental training session for all construction personnel regarding sensitive wildlife species with potential to occur in or near the specific Project Area.

   For all Project sites, the training will cover:

   - Santa Cruz long-toed salamander

   In addition, the training will cover the following sensitive wildlife species, as applicable to the specific Project Area, as indicated in Table 3 above, and based on the results of pre-construction surveys by a USFWS/CDFW-approved biologist:

- Crotch's bumble bee
- sensitive fish species (Pacific lamprey, riffle sculpin, and steelhead)
- California red-legged frog
- California giant salamander
- Santa Cruz black salamander
- northwestern pond turtle
- common and sensitive nesting birds
- common and sensitive roosting bats
- San Francisco dusky-footed woodrat
- American badger

The training will cover the following topics:

- description, identification, and photograph of sensitive species;
- natural history information;
- protective measures and Best Management Practices to be implemented to protect sensitive wildlife species and their habitat;
- the importance of avoiding impacts to sensitive species and the steps to take if individuals are encountered, alive or dead, including contacting the USFWS/CDFW-approved biologist.

All construction personnel will receive the training prior to beginning work. Any new crew members that join after work has been initiated will also receive the training prior to beginning work. A sign-in sheet will document completion of the training.

2. For all project activities initiated during the colony active period (April-August), a qualified biologist will conduct a preconstruction survey for nesting and foraging bumble bees. If Project activities are initiated outside of the colony active period, surveys will be conducted during the colony active period immediately preceding the proposed project start date.
3. Surveys will occur prior to beginning construction activities and will include all work, staging, and access areas and a buffer radius of 100 feet.
4. Surveys will occur when temperatures are at or above 60 degrees Fahrenheit and at or below 90 degrees Fahrenheit on sunny or partially sunny days when wind speeds are below 8 miles per hour. Surveys will begin no earlier than 2 hours after sunrise and no later than 3 hours before sunset.
5. If CBB are detected, consult with CDFW prior to initiating project activities.
6. Crotch's Bumble Bee nests will be given a buffer of 50 feet in which no Program activities will occur. The qualified biologist will develop a plan with CDFW to prevent the take of the nest or any individual within the Program area.
7. Where feasible, promote suitable habitat for CBB through restoration activities such as planting of native thatched grasses and retaining some downed logs.

5.5-C Pacific Lamprey, Riffle Sculpin, and Steelhead. Pacific Lamprey and Riffle Sculpin may be found throughout the Program Area in suitable habitat within rivers and streams. Steelhead are known to occur within Valencia Creek and Corralitos Creek.

Program activities will avoid direct impacts to streams within the Program Area; no work will occur below the Ordinary High Water Mark of streams under this Program. However, a handful of eucalyptus trees are present below the break in bank of smaller streams within the Program Area; tree removal below the break in bank may result in indirect impacts to streams through understory removal and exposure of bare ground on the embankment, destabilization of embankments, increased erosion, sedimentation, accidental spills of equipment fuels, fluids, or lubricants, and/or reduction in water quality, all of which, in turn may impact habitat features and overall habitat quality within occupied streams. Staging and/or access occurring on/near streambanks or within adjacent riparian habitats may also result in these indirect impacts. Large scale eucalyptus removal and associated bare soils may also result in indirect impacts to aquatic habitats through increased erosion, sedimentation, and or reduction in water quality. Herbicide application, if not selected specifically for application near aquatic features, or if applied improperly, could cause direct mortality of sensitive fish species, could result in behavioral changes, disrupt growth and development and indirectly impact aquatic plants, degrade habitat conditions, and disrupt the food web.

With implementation of protective measures, these impacts will be reduced to a less-than-significant level.

5.5-C Sensitive Fish Species Protective Measures

See **5.5-B.1 Crotch's Bumble Bee Protective Measure** above, **5.6 Upland Sensitive Habitat Protective Measures** and **5.7 Sensitive Aquatic Habitat Protective Measures** below.

5.5-D Santa Cruz Long-toed Salamander. Santa Cruz long-toed salamander is present in the Program Area and is known to breed in at least nine ponds within the Area. Although the species uses lentic habitat for breeding, typically for one to four weeks, this species primarily inhabits oak woodland and dense coastal scrub where it over-summers and then migrates and disperses through a variety of upland habitats during the rainy season. The species may occur within or immediately adjacent to eucalyptus groves and may be affected directly through injury or mortality or indirectly through habitat modification by program activities.

Program activities will avoid direct impacts to aquatic features within the Program Area; no work will occur within the ponds within the Program Area; however, a handful of eucalyptus trees are present on the embankments of ponds within the Program Area; tree removal on embankments may result in indirect impacts to aquatic features through understory removal and exposure of bare, destabilization of embankments, increased erosion, sedimentation, accidental spills of equipment fuels, fluids, or lubricants, and/or reduction in water quality, all of which, in turn may impact habitat features and overall habitat quality within aquatic features. Staging and/or access occurring on/near ponds or within adjacent riparian habitats may also result in these indirect impacts. Large scale eucalyptus removal and associated bare soils may also result in indirect impacts to aquatic habitats

through increased erosion, sedimentation, and or reduction in water quality. Herbicide application, if not selected specifically for application near aquatic features, or if applied improperly, could cause direct mortality of amphibians, could result in behavioral changes, disrupt growth and development and indirectly impact aquatic plants, degrade habitat conditions, and disrupt the food web.

Program activities in upland habitat could directly or indirectly affect Santa Cruz long-toed salamander. Tree removal, if techniques employed result in ground disturbance, could cause harassment, injury, or mortality to SCLTS using underground habitats in eucalyptus groves or adjacent staging and access areas. The establishment of access and staging areas, vegetation removal, including mastication of invasive weeds, grading, or any other activities that result in ground disturbance could also result in harassment, injury, or mortality. Stump removal, if implemented in upland habitats could directly impact individuals using subterranean habitats along tree roots or in adjacent leaf litter or burrows or indirectly impact habitat through the destruction of interconnected tunnels.

Mastication and chipping of invasive weeds, small trunks, branches or limbs that result in a thick layer of mulch in upland habitats could degrade over-summering habitats by destroying connections between tunnels, prevent individuals from utilizing burrows, and/or emerging for subterranean habitats, resulting in harassment and mortality.

The establishment of debris piles could attract individual SCLTS seeking refuge during dispersal or movement or could provide over-summering habitat. If debris piles are subsequently moved, dismantled, or burned, these activities could result in harassment, injury or mortality to SCLTS.

Controlled burns or broadcast burning with the Program Area to control invasive weeds may result in the mortality of SCLTS.

5.5-D Santa Cruz Long-toed Salamander Protective Measures

See **5.5-B.1 Crotch's Bumble Bee Protective Measure** above, **5.6 Upland Sensitive Habitat Protective Measures** and **5.7 Sensitive Aquatic Habitat Protective Measures** below.

1. For all Project sites, a qualified USFWS/CDFW-approved biologist will perform pre-construction surveys prior to project commencement and determine the level of effort needed during the course of the Project, as follows:

    - When eucalyptus removal will occur within 50 meters of aquatic habitat, a qualified USFWS/CDFW-approved biologist or USFWS/CDFW construction monitor will be on-site all day during all activities to provide biological monitoring. A pre-activity visual survey will be conducted by inspecting under accessible woody debris. Note that such surveys are insufficient to report a negative finding since the species is typically in subterranean mammal burrows during the summer months. During eucalyptus removal activities, the biologist will inspect any areas of surface disturbance that may expose an individual. If a SCLTS is found, in consultation with the USFWS and CDFW, it will be relocated to the

nearest appropriate habitat. Any dead individuals will be documented, photographed and salvaged, if appropriate, according to the qualified biologist's permit.

- When eucalyptus removal will occur within 200 meters of aquatic habitat, a qualified USFWS/CDFW-approved biologist or USFWS/CDFW-approved biological monitor will perform a morning site check as described above. The USFWS/CDFW-approved biologist or biological monitor and be on-call if an individual is observed, alive or dead, during the day.

2. Approved herbicides (not subject to the Environmental Protection Agency's injunction against the application of herbicide near aquatic habitats for CRLF and those safe for application near aquatic features) are typically permissible within 20 meters of the aquatic habitat of federally-listed amphibians (USFWS 2020). Reduced buffers may be allowable with the approval of USFWS, if the herbicide will be applied with a backpack sprayer, hand-held applicator, cone nozzle, or for spot treatment. For applications of approved herbicides that are safe near aquatic features, a minimum buffer of 10 meters will be implemented. For all other herbicide types and application techniques, the standard 20 meter will be implemented.
3. Avoid activities that will result in ground disturbance. Avoid grubbing or grading when preparing access and staging areas. Leave a layer of vegetation intact on the ground surface. Trampling and crushing vegetation (during the appropriate time of year and outside of refuge habitat) is preferable to ground disturbance. If ground disturbance must occur, a USFWS/CDFW-approved biologist will assess the area for potential SCLTS.
4. No stump removal will occur within the Program Area. Individual exceptions may be made if the Project Area is a monospecific stand of eucalyptus and upland over-summering habitat is not present within or adjacent to the stump proposed for removal. This exception will be made through an assessment by a USFWS/CDFW-approved biologist.
5. If mastication is employed as a technique for managing eucalyptus with small dbh or invasive weeds, the blade will be maintained a minimum of 6-8 inches above the ground at all times and no ground disturbance will occur. Individual exceptions may be made through an assessment by a USFWS/CDFW-approved biologist.
6. Debris from mastication and chipping will be spread only in Project Areas that are located outside of the 200-meter buffer around ponds within the Program Area (**Figure 3**). For Project Areas that situated between 50 meters and 200 meters from ponds within the Program Area, a USFWS/CDFW approved biologist will assess the site to determine if the spreading of debris from mastication and chipping may occur or the thickness of the debris will limited to a layer 1 inch thick. In Project Areas located within 50 meters of ponds the thickness of the debris will limited to a layer 1 inch thick. All other mastication and chipping debris will be removed from this sensitive habitat.
7. If debris piles are established following Program activities, they must be moved or dismantled prior to the first rain of the year. If debris piles are to be left in place until after the first rain event of the year, the following measures will apply:

- For Project Areas outside of the 200-meter buffer from ponds within the Program Area (**Figure 3**), prior to the first rain of the year, a USFWS/CDFW-approved biologist will oversee installation of drift fencing around the debris pile and placement of cover boards near (outside of) the fencing to detect SCLTS. The USFWS/CDFW-approved biologist will check the cover boards and fencing prior to further action on the debris piles. If no SCLTS are detected and the silt fencing has remained intact, the pile may be moved, dismantled or burned.
- For Project Areas between 50-meter and 200-meter buffer from ponds within the Program Area (**Figure 3**), no pile burning will occur. Prior to the first rain of the year, a USFWS/CDFW-approved biologist will oversee installation of drift fencing around the debris pile and placement of cover boards near (outside of) the fencing to detect SCLTS. Prior to any further action on the pile, a USFWS/CDFW-approved biologist will check the cover boards and fencing to detect presence of SCLTS. At the discretion of the biologist, with biologist on-site to monitor, the debris piles may be moved or dismantled.
- For Project Areas within the 50-meter buffer from ponds within the Program Area, debris piles will not be burned, moved or dismantled after the first rain of the year.

5.5-E California Red-legged Frog. California red-legged frog is present in the Program Area and is known to breed in Calabasas Pond, an off-channel pond along Larkin Valley Creek and is likely present at various ponds on private property. In addition to aquatic habitats, the species makes extensive use of upland habitats. The species may occur within or immediately adjacent to eucalyptus groves and may be affected directly through injury or mortality or indirectly through habitat modification by program activities including eucalyptus removal, access, and equipment staging.

Program activities will avoid direct impacts to aquatic features within the Program Area; no work will occur within the ponds or below the OHWM of streams within the Program Area; however, a handful of eucalyptus trees are present on the embankments of ponds and streams or adjacent to wetlands within the Program Area; tree removal on embankments or in or adjacent to riparian or wetland habitats may result in indirect impacts to aquatic features through understory removal and exposure of bare, destabilization of embankments, increased erosion, sedimentation, accidental spills of equipment fuels, fluids, or lubricants, and/or reduction in water quality, all of which, in turn may impact habitat features and overall habitat quality within aquatic features. Staging and/or access occurring on/near ponds or within adjacent riparian habitats may also result in these indirect impacts. Large scale eucalyptus removal and associated bare soils may also result in indirect impacts to aquatic habitats through increased erosion, sedimentation, and or reduction in water quality. Herbicide application, if not selected specifically for application near aquatic features, or if applied improperly, could cause direct mortality of amphibians, could result in behavioral changes, disrupt growth and development and indirectly impact aquatic plants, degrade habitat conditions, and disrupt the food web.

Tree removal on the embankments of ponds or streams or in or adjacent to riparian and wetland habitats could result in harassment, injury, or mortality of CRLF if present.

Program activities in upland habitat could directly or indirectly affect CRLF. Tree removal, if techniques employed result in ground disturbance, could cause harassment, injury, or mortality to CRLF using upland habitats near eucalyptus groves or in adjacent staging and access areas. The establishment of access and staging areas, vegetation removal, including mastication of invasive weeds, grading, or any other activities that result in ground disturbance could also result in harassment, injury, or mortality.

Mastication of invasive weeds could result in harassment, injury or mortality of CRLF, if present.

The establishment of debris piles could attract individual CRLF seeking refuge during dispersal or movement or could provide refuge habitat. If debris piles are subsequently moved, dismantled, or burned, these activities could result in harassment, injury or mortality to CRLF.

Controlled burns or broadcast burning with the Program Area to control invasive weeds may result in the mortality of CRLF.

5.5-E California Red-legged Frog Protective Measures

See **5.5-B.1 Crotch's Bumble Bee Protective Measure** above, **5.5-D.1-7 Santa Cruz Long-toed Salamander Protective Measures** above (to be implemented at the discretion of a USFWS/CDFW-approved biologist), **5.6 Upland Sensitive Habitat Protective Measures** and **5.7 Sensitive Aquatic Habitat Protective Measures** below.

1. If eucalyptus removal occurs within 100 meters of known or potential habitat:
    - a USFWS/CDFW-approved biologist will perform pre-construction surveys prior to project commencement.
    - If CRLF are observed during preconstruction surveys or any time during construction, a USFWS/CDFW-approved biologist or approved biological monitor will be present during all activities.
    - A USFWS/CDFW-approved biologist or approved biological monitor will inspect the work area each day before construction activities begin. At the discretion of the USFWS/CDFW-approved biologist, a construction monitor may be trained to conduct morning site checks. The approved biologist will remain on-call and will check the Project Area weekly for compliance with all protected measures.

5.5-F California Giant Salamander and Santa Cruz Black Salamander. California giant salamander and Santa Cruz black salamander may be found within the Program Area in suitable habitats. Both species may occur within or immediately adjacent to eucalyptus groves and may be affected directly through injury or mortality or indirectly through habitat modification by Program activities including eucalyptus removal, new access roads, and equipment staging.

Program activities will avoid direct impacts to aquatic features within the Program Area; no work will occur within the ponds or below the OHWM of streams within the Program Area; however, a handful of eucalyptus trees are present on the embankments of ponds and streams or adjacent to wetlands within the Program Area; tree removal on embankments or in or adjacent to riparian or wetland

habitats may result in indirect impacts to aquatic features through understory removal and exposure of bare, destabilization of embankments, increased erosion, sedimentation, accidental spills of equipment fuels, fluids, or lubricants, and/or reduction in water quality, all of which, in turn may impact habitat features and overall habitat quality within aquatic features. Staging and/or access occurring on/near ponds or within adjacent riparian habitats may also result in these indirect impacts. Large scale eucalyptus removal and associated bare soils may also result in indirect impacts to aquatic habitats through increased erosion, sedimentation, and or reduction in water quality. Herbicide application, if not selected specifically for application near aquatic features, or if applied improperly, could cause direct mortality of amphibians, could result in behavioral changes, disrupt growth and development and indirectly impact aquatic plants, degrade habitat conditions, and disrupt the food web.

Tree removal on the embankments of ponds or streams or in or adjacent to riparian and wetland habitats could result in harassment, injury, or mortality of amphibians if present.

5.5-F California Giant Salamander and Santa Cruz Black Salamander Protective Measures

See **5.5-B.1 Crotch's Bumble Bee Protective Measure** above, **5.5-D.1-7 Santa Cruz Long-toed Salamander Protective Measures** above (to be implemented at the discretion of a USFWS/CDFW-approved biologist), **5.6 Upland Sensitive Habitat Protective Measures** and **5.7 Sensitive Aquatic Habitat Protective Measures** below.

1. Prior to construction, a CDFW-approved biologist will conduct a ground survey throughout appropriate microhabitats within and adjacent to work areas by searching moist areas including culverts and under woody debris, cobbles, and small boulders (<20 lbs.). All potential cover objects will be returned to their original position after inspection. If either species is subsequently observed by project personnel, with the approval of CDFW, the approved will relocate the individual to the nearest appropriate habitat.

5.5-G Northwestern Pond Turtle. Northwestern pond turtle is known to occur within Larkin Valley Creek and may be present elsewhere within the Program Area in appropriate habitat.

Program activities will avoid direct impacts to aquatic features within the Program Area; no work will occur within the ponds or below the OHWM of streams within the Program Area; however, a handful of eucalyptus trees are present on the embankments of ponds and streams or adjacent to wetlands within the Program Area; tree removal on embankments or in or adjacent to riparian or wetland habitats may result in indirect impacts to aquatic features through understory removal and exposure of bare, destabilization of embankments, increased erosion, sedimentation, accidental spills of equipment fuels, fluids, or lubricants, and/or reduction in water quality, all of which, in turn may impact habitat features and overall habitat quality within aquatic features. Staging and/or access occurring on/near ponds or within adjacent riparian habitats may also result in these indirect impacts. Large scale eucalyptus removal and associated bare soils may also result in indirect impacts to aquatic habitats through increased erosion, sedimentation, and or reduction in water quality. Herbicide application, if not selected specifically for application near aquatic features, or if applied improperly, could cause direct mortality of northwestern pond turtle, could result in

behavioral changes, disrupt growth and development and indirectly impact aquatic plants, degrade habitat conditions, and disrupt the food web.

Northwestern pond turtle nests may be directly impacted if adjacent grassland, coastal scrub, or open woodlands within 200-feet of known or potential aquatic habitat is used for staging equipment or access. Individual turtles may be injured or killed by construction activities in upland nesting habitats or during movement into upland habitats.

5.5-G Northwestern Pond Turtle Protective Measures

See **5.5-B.1 Crotch's Bumble Bee Protective Measure** above, **5.5-D.1-7 Santa Cruz Long-toed Salamander Protective Measures** above (to be implemented at the discretion of a USFWS/CDFW-approved biologist) , **5.6 Upland Sensitive Habitat Protective Measures** and **5.7 Sensitive Aquatic Habitat Protective Measures** below.

1. Prior to establishing a staging area or access route in potential pond turtle nesting habitat within 100-meters of known/potential aquatic habitat, a CDFW-approved biologist will conduct a preconstruction ground survey for evidence of past or active nests.
2. If staging areas will be established in proximity to occupied aquatic habitat during the turtle nesting period (typically May – July), staging areas will be enclosed with silt fencing that will prevent encroachment. Access roads will not be fenced to allow free movements of turtles and other wildlife.

5.5-H Common and Sensitive Nesting Birds. The eucalyptus trees within the Program Area provide cover, shelter, roosting and foraging habitat for a range of both common and sensitive avian species. In addition, a number of these birds are likely utilize the Program Area for nesting. Breeding bird season is typically February 1 to September 1 but some species, such as Great Horned Owl, Bald Eagle, Anna's Hummingbird, and Lawrence's Goldfinch, may initiate nesting outside of this season.

Birds may nest in trees, understory vegetation, on the ground, in brush/debris piles, or on human structures and machinery. Eucalyptus removal and equipment staging and access may result in direct mortality of young or nests, if present. Noise, vibration, dust, and other indirect disturbances may result in reduced food deliveries to nests, premature fledging, and/or nest abandonment.

Eucalyptus removal will result in an immediate reduction in available cover, shelter, foraging, roosting, and nesting habitat. Additionally, because restored native vegetation will take time to establish and achieve similar stature, there will be a temporal loss of suitable substrate for these life functions, especially for species requiring elevated or expansive canopy habitat (i.e. hawks, owls, and eagles). Over the long term, restoration with native plant species is expected to provide improved habitat diversity and ecological value for a broader range of bird species.

With implementation of protective measures and native habitat restoration, impacts would be reduced to a less-than-significant level.

5.5-H Common and Sensitive Nesting Birds Protective Measures

See **Protective Measure 5.5-B.1** under Crotch's bumble bee above.

1. If feasible, perform vegetation removal activities outside of breeding bird season to avoid direct harm, mortality, or disturbance to potential nesting bird species.
2. For all project activities initiated during the breeding bird season, or if construction activities lapse for a period of one week or more during breeding bird season, a qualified biologist will conduct a breeding bird survey for nesting birds, including raptors. Surveys will be conducted within 7 days, prior to beginning construction activities and will include all work, staging, access areas, and minimum survey radii surrounding the work area, where accessible or visible, as follows:
    a. 250 feet for non-raptors;
    b. 500 feet for small raptors such as accipiters; and
    c. 1,000 feet for larger raptors such as buteos.
3. If no nesting sensitive or common avian species are observed during breeding bird surveys, no additional measures would be required.
4. If common nesting birds are observed within survey radii from vegetation (eucalyptus trees and invasive non-native weeds) proposed for removal, postpone vegetation removal activities until young have fledged to avoid direct harm or mortality of nesting birds and/or establish buffers depending on the activity and appropriate to the species, such as protective buffers recommended in PG&E et al. (2015).
5. Sensitive bird species, if nesting in or near the Program Area, will be given special consideration and may require additional protective measures as determined through consultation with the relevant agency (USFWS or CDFW).
6. A qualified biologist will monitor active nest sites for construction-related disturbances and adjust protective buffers as necessary to prevent further disruption of nesting activities.
7. Bald and Golden Eagle nests will receive protection year-round. No trees containing eagle nests or within 1,320 feet of an eagle nest will be removed.
8. To stagger the temporal loss of suitable avian cover, shelter, foraging, roosting, and nesting habitat, the Program will limit eucalyptus removal to 90 acres/year within the Program Area and 45 acres/year within HUC 12 watersheds [USGS (WBD) 2025].

5.5-I Common and Sensitive Roosting Bats. Both common and sensitive bat species may utilize the Program Area for roosting. Bat maternity roost season typically occurs between May 1 and September 1, and winter hibernacula are typically occupied between November 1 and February 15. Tree removal occurring within edge habitats and in proximity to water sources is more likely to impact bat species due to the higher roosting activity typically associated with these areas. If roosting bats are present, eucalyptus removal may result in the direct mortality of foliage/cavity roosting bats within the trees. Additionally, noise, vibration, dust, and other indirect disturbances associated with work activities may dislodge bats from their roosts or cause maternity roost abandonment.

Eucalyptus removal will result in an immediate reduction in available roosting habitat for bats. The immediate loss of roosting substrate would be reduced by girdling, where the tree canopy of the affected would die over the course of the year, allowing time for bats to seek alternate habitat. The Program will also result in a temporal loss of suitable roosting substrate, because restored native vegetation will take time to establish and achieve similar stature, and suitable bat roost features (peeling bark, crevices, and cavities). Although tree removal may result in short term loss of bat roosting habitat, over time the Program is anticipated to provide improved habitat diversity and ecological value for a broader range of bat species.

With implementation of protective measures and native habitat restoration, impacts would be reduced to a less-than-significant level.

5.5-I Common and Sensitive Roosting Bats Protective Measures

See **Protective Measure 5.5-B.1** under Crotch's bumble bee above.

1. To avoid impacts to individual roosts, winter hibernacula, and maternity roosts, during all months, prior to tree removal, a qualified biologist will conduct a pre-construction survey for bats.
2. Authorization from California Department of Fish and Wildlife (CDFW) would be required to evict bats from winter hibernacula if present.
3. If established maternity colonies are found, buffers will be established around the colony to protect pre-volant young from construction noise until the young can fly. Buffer size will be determined through consultation with CDFW.
4. If foliage roosting bats are determined to be present outside of maternity or winter hibernacula season, limbs will be lowered, inspected for bats by a bat biologist, and chipped immediately or moved to a dump site. Alternately, limbs may be lowered and left on the ground until the following day, when they can be chipped or moved to a dump site. No logs or tree sections will be dropped on downed limbs or limb piles that have not been in place since the previous day.
5. If the tree is not limbed or removed within four days of the survey, the survey efforts will be repeated.
6. If no bats are present, remove trees immediately.
7. To stagger the temporal loss of suitable bat roosting habitat, the Program will limit eucalyptus removal to 90 acres/year within the Program Area and 45 acres/year within HUC 12 watersheds [USGS (WBD) 2025].

5.5-J San Francisco Dusky-footed Woodrat. The San Francisco Dusky-footed Woodrat (SFDFW) utilizes the Program Area for stick houses and foraging, especially within edge habitat. Eucalyptus removal and equipment access and staging may cause direct mortality to houses, individuals or young. Destruction of houses may result in the mortality of dependent young and/or loss of food stores and shelter. Removal of eucalyptus trees adjacent to SFDFW houses may result in changes to microclimate conditions, reduce insulation and expose woodrats to weather (sun, wind, cold), expose woodrats to predators, and reduce or eliminate available foraging habitat.

Where native habitat (trees and understory) are present within or adjacent to the eucalyptus stands proposed for removal, retaining these vital habitat features would reduce impacts to woodrats and their houses. Where no native habitat features would be retained, mortality would be more likely because of the potential impacts described above.

In the long term, the Program is expected to have a beneficial impact on the SFDFW by expanding and connecting patches of preferred habitat such as oak woodland, coastal scrub, chaparral, and grassland. The Program will increase the extent of structurally complex habitat and edge habitat, both of which are occupied preferentially by this species.

With implementation of protective measures and native habitat restoration, impacts would be reduced to a less-than-significant level.

5.5-J San Francisco Dusky-footed Woodrat Protective Measures

1. At least 2 weeks prior to eucalyptus removal activities, a qualified biologist will conduct a preconstruction survey and flag woodrat houses and determine, to the extent feasible, whether the houses are active or inactive [e.g. freshly chewed (green) vegetation is visible on the house, at least some entrances are clear and free of cobwebs, fresh sticks are piled on the top of the house, the house is not composed entirely of old dry sticks and has a flattened shape (has collapsed over time)]. If this determination cannot be made, the house will be presumed to be active. If an active SFDFW house is found during SFDFW surveys, the active house will be designated as "Ecologically Sensitive Area" (ESA) and protected during construction with flagging or silt fencing between the work area and the house. The size of the protective buffer will vary depending on habitat conditions:
    - If native vegetation (trees and shrubs) are present and will be protected in place during tree removal activities, the buffer can be as little as 5 feet, as long as microclimate conditions and cover are retained, and foraging habitat is abundant near the house.
    - In sites where little to no native vegetation is initially present, buffer wood rat houses up to 25 feet, at the discretion of the qualified biologist, depending on available resources.
    - In all cases, preserve cover, adjacent food sources, and microhabitat conditions (sun, shade, insulation from heat, cold, and wind).
2. If avoidance of woodrat houses and preservation of resources are not possible, in coordination with CDFW, a qualified biologist will develop and implement a plan to dismantle single houses or relocate colonies if needed.
3. If relocation is required, CDFW would be provided with a site-specific plan to be implemented during the appropriate time of year, when dependent young are not expected to be present in the nest (typically July 1-October 15).

5.5-K American Badger. The Program Area contains the suitable open scrub, forest, and grassland habitat this species prefers; however, this is a solitary species with a large home range (between 340 acres and 1500 acres). Potential habitat has already been fragmented by roads, development, and agricultural fields; and increased development over the last 20 years had further

restricted suitable habitat to smaller habitat patches, making occurrence of this species possible but unlikely.

The proposed Program would improve habitat conditions and expand available potential badger habitat within the Program Area. During construction, if American badger is present in or near proposed Project Areas, construction, including equipment operation, noise, and vibrations, could disturb or disrupt burrowing and denning activities, especially if young are present in the den. Young are typically born between March and April and disperse from the den area in late August or September. Equipment could track over and cause den collapse or compact friable soil.

With implementation of protective measures and native habitat restoration, impacts would be reduced to a less-than-significant level.

5.5-K American Badger Protective Measures

1. At least 2 weeks prior to construction, a qualified biologist will conduct a preconstruction survey of the proposed Project Area/s for suitable badger habitat and dens. If present, implement a buffer from the den, as follows:
   - Outside of rearing season- 50 feet to 100 feet depending on intervening vegetation, cover, insulation from noise and vibrations.
   - Within rearing season (March – August or if young are present)- 250 feet.

5.6 Sensitive Habitats/Vegetation Removal

Would the project:

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

The following sensitive habitat types are present within the Program Area:

- Oak Woodland
- Oak Savannah
- Native Grassland
- Coastal Scrub
- Chaparral
- Riparian
- Pond/Marsh
- Stream
- Wetland/Seep

Sensitive habitats also include areas with high biological diversity and areas providing important wildlife habitat, such as edge habitats. In addition, habitats for the sensitive plant and wildlife species listed above are considered sensitive habitats. Impacts to sensitive upland habitats are discussed here and impacts to aquatic features are discussed under Section 5.4 below.

5.6 Sensitive Upland Habitats. Within the Program Area, oak woodland, oak savannah, native grassland, coastal scrub, chapparal, and riparian habitats may be impacted by work activities. Temporary impacts to these sensitive habitats may result from the access and staging needed for equipment to reach eucalyptus stands for removal as well as from the felling of trees into adjacent habitats if necessary for their safe removal. Large scale eucalyptus removal adjacent to sensitive habitats may temporarily degrade habitat conditions through changes in shading, canopy structure, and increased erosion and sedimentation, especially on slopes. These potential temporary impacts would be avoided and minimized as described under the protective measures below.

In general, no permanent impacts to sensitive habitats would result from Program activities and no clearing, grubbing, earth movement, or ground disturbance would occur within sensitive habitats, unless no other alternative exists.

Under specific circumstances (i.e. in order for equipment to access eucalyptus stands or to establish skid trails for log removal), removal of individual native trees and/or shrubs within sensitive habitat may be required. Other temporary impacts may include crushing and trampling vegetation or cutting vegetation to above the ground. Any removal of native vegetation, particularly in sensitive habitats, would be minimized to the greatest extent feasible. A biotic approval is required for work within sensitive habitats and mitigation would be required for any impacts per the County Sensitive Habitat Protection ordinance (§ 16.32). Because the Program Area falls within known and potential SCLTS habitat, interagency coordination and approvals from the County, CDFW, and USFWS would be required.

In limited locations, eucalyptus trees are present on the embankments of streams and/or intergrade with riparian vegetation. Work within these areas would be limited to tree removal or girdling and protective measures would be implemented to preserve native riparian functions and values; however, temporary impacts to riparian may occur, including those described above. In addition, temporary indirect impacts to riparian may include increased erosion, sedimentation, and/or impacts to water quality.

Any work which occurs within riparian habitat would require an authorized exception to the County Riparian Corridor and Wetlands Protection Ordinance (§16.30). Preliminary analysis has determined that this Program meets the criteria for an exception, as described under **Section 8.5** below.

Although the Program may result in short term temporary impacts to sensitive habitats adjacent to areas where tree removal will occur, the Program will be restoring sensitive habitats throughout the Program Area. Overall, and in the medium and long term, proposed Program activities will result in improved ecological functions and values of sensitive habitats through increased acreage of sensitive habitats, increased diversity of native habitat, complex multi-tiered canopy of restored

woodlands, native understory, increased habitat for native plant and wildlife species, and increased connectivity between sensitive habitats.

The following protective measures will ensure the Program avoids and minimizes potential impacts to sensitive upland habitats.

5.6 Sensitive Upland Habitats Protective Measures

1. Prior to initiation of Program activities, a qualified biologist will identify all areas to be avoided and/or protected, mark sensitive habitats in the field, and/or a qualified biologist will work with the contractor to avoid sensitive habitats to the extent feasible.
2. Sensitive habitats outside of the work, staging, and access areas will be avoided.
3. Equipment will be staged in ruderal and developed areas to the extent feasible. Confine Program activities, operation of equipment and vehicles, and parking to designated work, staging, and access areas. Restrict and minimize access roads/skid roads into and out of the work areas to the greatest extent feasible. When access through sensitive habitat types is required, limit these access areas in sensitive habitat to 0.25 acres.
4. Removal and disturbance of native vegetation will be minimized. Where access through sensitive habitats is necessary, because no other feasible access route exists, or when native vegetation occurs within or immediately adjacent to eucalyptus stands:
    - Limbing of native trees and cutting (above the ground) of shrubs will be favored in lieu of removal. Stumps and burls of native vegetation will be retained to allow for re-sprouting following Program completion.
    - Maintain native understory plants to the extent feasible. Do not grub or grub within sensitive habitat types unless no other alternative exists.
    - Protect native habitat in place through strategic tree removal, using one or more of the following techniques as appropriate to the site-
        - Approach the eucalyptus grove from a location where developed, ruderal, or non-native habitat is present or eucalyptus is near monospecific. Remove trees working gradually toward the location where native habitat is present. Using the area cleared by tree removal, direct felling (with chains or ropes) toward this opening to avoid impacting native habitat.
        - When native vegetation is present under the canopy of eucalyptus to be removed, in lieu of felling, limb and lower large limbs to prevent collateral damage to native trees and understory.
        - Employ girdling instead of felling.
5. When eucalyptus removal will impact riparian vegetation, limit the impact area to 0.5 acres to reduce temporary and indirect impacts. If vegetation removal is required in eucalyptus stands greater than 0.5 acres that will impact riparian habitat, all native riparian vegetation will be cleared by hand, leaving as much of the root wad and base of plants intact.
6. Reserve native edge habitats wherever feasible.

7. Where temporary impacts to sensitive habitats occur, re-vegetate as needed with native seed mix or locally-sourced native plantings. Revegetate all disturbed areas. A qualified biologist will determine a plant palette/seed mix suitable to the location. Adjacent non-native grassland and ruderal habitats may also be planted with native vegetation, preserving edge effects, where appropriate. Details and requirements regarding revegetation of temporary impact areas will presented in a Programmatic Restoration Plan, as outlined in **Section 6** below.
8. Prior to staging equipment on-site, clean all equipment caked with mud, soils, or debris from off-site sources or previous project sites to avoid introducing or spreading invasive exotic plant species. All equipment used on the premises should be cleaned prior to leaving the site for future projects.
9. Remove invasive non-native plants from the work area, particularly those designated by Cal-IPC as having high potential for "severe ecological impacts on physical processes, plant and animal communities, and vegetation structure." Temporary impact areas will be restored to pre-Project conditions or better and maintained until Program-specific success criteria have been met. No new non-natives (that were not present prior to the Project) will be allowed to colonize the site. See also **Section 6** below.
10. To minimize the risk of entangling and strangling wildlife, erosion control materials containing synthetic (e.g., plastic or nylon) monofilament netting will not be used, and any geo-textile material or filter fabric used will not contain any petroleum-based products. Geotextiles, fiber rolls, and other erosion control measures will be made of loose-weave mesh, such as jute or coconut (coir) fiber.
11. All construction vehicles and equipment will be checked daily for fuel, oil, and hydraulic fluid leaks or other problems that could result in spills of toxic materials.
12. Prohibit smoking or allow workers to smoke in designated areas clear of dry vegetation and away from hazardous materials. Dispose of cigarette butts in an appropriate area away from the project site.
13. During construction, all food trash that may attract predators into the work area should be properly contained and removed from the work site on a daily basis. Construction debris and trash should also be properly contained and removed from the work site on a regular basis.

5.7 Wetlands and Other Waters (Aquatic Habitats)

Would the project:

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐

Within the Program Area, pond/marsh, stream, and wetland/seep habitats may be impacted by Program activities if these sensitive habitats are present adjacent to eucalyptus removal areas or, in limited locations within the Program Area, if eucalyptus trees are present on the embankments of these aquatic features.

Temporary impacts to these sensitive habitats may result from the access and staging needed for equipment to reach eucalyptus trees or stands for removal as well as from the felling of trees in adjacent habitats if necessary for their safe removal. While vegetation removal will be restricted to eucalyptus trees, the felling of large trees, as well as equipment access and staging, may impact these aquatic habitat types.

Large scale eucalyptus removal adjacent to pond/marsh, stream, and wetland/seep habitats may temporarily degrade habitat conditions through changes in shading, canopy structure, and understory, exposure of bare ground on the embankment, destabilization of embankments, and increased erosion and sedimentation. Vegetation may be crushed or trampled adjacent to aquatic features. In addition, temporary indirect impacts to aquatic features may include impacts to water quality. Program activities may result in accidental spills of equipment fuels, fluids, or lubricants, and/or reductions in water quality from sediment. Herbicide application, if not selected specifically for application near aquatic features, or if applied improperly, could also impact water quality, impact aquatic plants, degrade habitat conditions, and disrupt the food web.

Any work which occurs within or near aquatic habitats would require an authorized exception to the County Riparian Corridor and Wetlands Protection Ordinance (§16.30). A preliminary analysis of has determined that this Program meets the criteria for an exception, as described above under **Section 8.5** below.

Work within or near aquatic features would be limited to tree removal or girdling and protective measures would be implemented to preserve the ecological functions and values of these sensitive habitats.

5.7 Sensitive Aquatic Habitats Protective Measures

1. Implement all protective measures described above for sensitive upland habitats.
2. Minimize the footprint of disturbance within 100 feet of aquatic/riparian habitats. Avoid permanent impacts within this buffer area and, if feasible, avoid temporary impacts (soil disturbance) within 10 feet of aquatic habitats.
3. Restrict and minimize access/skid roads near aquatic features.
4. All construction vehicles and equipment will remain outside of aquatic features (above the ordinary high-water mark).
5. Water quality, erosion control and sediment control protective measures will be implemented to avoid indirect impacts to all wetlands, and "other waters", (as well as to sensitive fish and amphibians and their designated critical habitats, where present). For work activities with ground disturbance on slopes adjacent to or within aquatic/riparian features,

straw wattles will be placed on the slopes or around the perimeter of the work areas, to minimize erosion and sedimentation and prevent transport of sediment downstream.

6. All bare soils created as a result of Program activities will be covered with erosion control materials, including application of mulch on areas with slopes of 30% of less (where suitable to the habitat proposed for restoration), seeding with a native seed mix and/or site stabilization with jute or coconut (coir) fiber rolls and erosion control blankets (on slopes) in a manner that prevents downstream discharges.
7. Fueling, lubrication, maintenance, storage, and staging of vehicles and equipment will take place 100 feet (or as far away as possible) from aquatic features, in a location where fluids or accidental discharges cannot flow into a waterbody, and such activities will not result in a discharge to aquatic features. Secondary containment measures to protect water quality, such as placement of visqueen under equipment, will be implemented if staging closer than 100 feet to an aquatic feature.
8. All materials will be stockpiled at least 50 feet away from waterbodies where feasible. Any materials that are not being actively used will be covered and protected.
9. The contractor will retain a spill plan and appropriate spill control and clean up materials (e.g., oil absorbent pads and drip pans) on site in case spills or leaks from equipment occur.
10. If construction-related materials reach surface waters, appropriate spill response procedures must be initiated as soon as the incident is discovered.
11. The contractor will visually inspect the Project site and aquatic features adjacent to the Project impact areas following completion of work activities to ensure that the Project is not causing excessive erosion, bank or road instability, or other water quality problems.
12. All equipment, materials, debris, and management practices no longer needed will be removed from the site immediately following Program completion.
13. Herbicides will be applied during the dry season (typically May 1 – October 15, or until the first rain of the season) when the risk of run-off into aquatic features is minimized. Herbicides will not be applied during or within 48 hours of rain events.
14. Approved herbicides (not subject to the Environmental Protection Agency's injunction against the application of herbicide near aquatic habitats for CRLF and those safe for application near aquatic features) are typically permissible within 60 feet of the aquatic habitat of federally-listed amphibians (USFWS 2020). Reduced buffers may be allowable with the approval of USFWS, if the herbicide will be applied with a backpack sprayer, hand-held applicator, cone nozzle, or for spot treatment. For applications of approved herbicides that are safe near aquatic features, a minimum buffer of 33 feet will be implemented. For all other herbicide types and application techniques, the standard 60-foot buffer will be implemented.

5.8 WILDLIFE MOVEMENT

Would the project:

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
Interfere substantially with the movement of any native resident or migratory fish or wildlife species or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐

While eucalyptus groves do provide habitat for some native species, particularly avian species, these trees are generally considered ecologically disruptive due to their dense canopy, allelopathic properties, and limited value for supporting native wildlife diversity. Their replacement with native vegetation is expected to improve habitat quality and ecological function over the long term.

During Program implementation, temporary disturbance from vegetation removal may cause short-term avoidance by some wildlife species. In the interim period between eucalyptus removal and the establishment of native vegetation, the affected areas may be less conducive to wildlife movement and habitat use due to reduced vegetative cover and structural complexity. However, because the Program will not involve the installation of permanent barriers such as fencing or new development, and the eucalyptus removal areas will remain undeveloped open space, the potential to interfere with regional wildlife movement is minimal. Moreover, the transition to native habitat is expected to enhance the suitability of the area for wildlife movement and usage by providing more diverse and appropriate food and cover resources over time.

5.8 Wildlife Movement Protective Measures

1. If silt fencing is installed around the Project Area, ensure breaks in the fencing are present every 50 feet to allow wildlife to move around the Project Area without significant disruption.

5.9 LOCAL POLICIES AND ORDINANCES

Would the project:

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
Conflict with any local policies or ordinances protecting biological resources (such as the Sensitive Habitat Ordinance, Riparian and Wetland Protection Ordinance, and the Significant Tree Protection Ordinance)?	☐	☒	☐	☐

County Sensitive Habitat Ordinance. The County Sensitive Habitat Ordinance requires that any unavoidable environmental impacts to sensitive habitats be mitigated. In addition, the ordinance calls for the protection of sensitive habitats "undisturbed by the proposed development activity" or on an adjacent

parcel through measures such as conservation easements. Additionally, restoration "commensurate with the scale of the proposed development" is required for degradation of sensitive habitats caused by the project. Impacts to sensitive habitats, including wetlands and aquatic habitat, would be mitigated as described above. These criteria would be met through the protective measures outlined above and through restoration of the subject Project Areas.

County Riparian Corridor and Wetlands Protection Ordinance. The Program would require a Riparian Exception for individual projects that cannot implement eucalyptus removal without impacts to wetlands, riparian, or associated buffers in order to be consistent with the County of Santa Cruz Riparian Corridor and Wetlands Protection Ordinance.

Prior to the approval of any exception, the Zoning Administrator would make the following findings:

(1) *That there are special circumstances or conditions affecting the property*. Properties that fall within the specifications of the Program will have eucalyptus that would be removed for the dual purposes of habitat restoration and to improve public safety. Proposed eucalyptus removal will reduce wildfire and high wind threats to adjacent properties and restore native habitat for the SCLTS.

(2) *That the exception is necessary for the proper design and function of some permitted or existing activity on the property*. Work in or near riparian habitat and aquatic features would occur only if no feasible alternative access routes are available to reach eucalyptus groves targeted for removal, or if tree felling cannot be safely conducted without directing trees or equipment into such features. In such cases, disturbance would be limited to the minimum extent necessary to facilitate safe and effective tree removal and would be conducted in accordance with applicable protective measures.

(3) *That the granting of the exception will not be detrimental to the public welfare or injurious to other property downstream or in the area in which the project is located*. The Program is designed to improve public welfare by improving public safety and protective measures would be implemented to protect all properties downstream of Program activities.

The Program would benefit public welfare by reducing the risk of wildfire ignition and spread associated with dense stands of flammable eucalyptus trees. In addition, the removal of structurally compromised or hazard-prone trees would decrease the potential for property damage or personal injury resulting from falling limbs or tree failure during high wind or storm events.

All activities undertaken as part of the Program will ensure the protection of downstream properties through implementation of erosion and sediment controls and water quality protections.

(4) *That the granting of the exception, in the Coastal Zone, will not reduce or adversely impact the riparian corridor, and there is no feasible less environmentally damaging alternative*. The Program is *not* located in the Coastal Zone; however, the Program will seek access routes that meet the "least environmentally damaging" criteria.

(5) *That the granting of the exception is in accordance with the purpose of this chapter, and with the objectives of the General Plan and elements thereof, and the Local Coastal Program Land Use Plan.*

The Program is consistent with the purpose and objectives of the chapter and of the Santa Cruz County General Plan, which emphasize the protection, restoration, and enhancement of native habitats and biological resources. The Program will result in the restoration of native habitat which will subsequently improve ecological functions and values of adjacent riparian habitat, wherever present. By removing invasive eucalyptus trees and facilitating the re-establishment of native vegetation communities, the Program supports long-term ecological health and aligns with County objectives for habitat conservation and natural resource stewardship.

Preliminary analysis has determined that the project complies with these findings. The Program is therefore consistent with the County of Santa Cruz Riparian Corridor and Wetlands Protection Ordinance and impacts from Program implementation would be less than significant with mitigation incorporated.

5.10 Habitat Conservation Plans

Would the project:

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

General Conservation Plan for Amphibians in Southern Santa Cruz County. The Program does not conflict with other approved local, regional, or state habitat conservation plans. The Program will comply with all protective measures laid out in the General Conservation Plan for Amphibians in Southern Santa Cruz County.

5.11 CUMULATIVE IMPACTS

The cumulative setting for biological resources encompasses the upland regions of Santa Cruz County, bounded to the north by Castle Rock State Park and the Santa Cruz Mountains, to the east by the Santa Clara Valley floor along US 101 near Morgan Hill and Gilroy, to the south by northern Monterey and San Benito Counties, including the Elkhorn Slough watershed along US 101 and CA 156, and to the west by the Monterey Bay coastline. This extent reflects a regional landscape characterized by a mosaic of land uses and habitat types and supports analysis of cumulative, canopy-dependent wildlife, habitat connectivity, and ecosystem function. These ecological and jurisdictional boundaries were selected to ensure that the analysis captures additive effects from projects with similar vegetation management scopes (ongoing and foreseeable) and habitat implications within an ecologically connected geographic area. The setting includes known mapped critical habitat and known wildlife movement corridors, with boundaries delineated using a combination of regional watershed divides and impermeable roadway barriers (e.g., US 101 and CA 156) that limit wildlife dispersal and constrain ecological connectivity.

Mature eucalyptus trees provide elevated nesting habitat for canopy-dependent bird species, particularly raptors, which preferentially select the tallest available trees for nest establishment (Rottenborn 2000). Removal of these trees may temporarily displace breeding individuals and reduce the availability of suitable nest sites within the Program Area.

The proposed Program's activities are anticipated to contribute to broader regional impacts through large-scale eucalyptus removal. The following section describes the nature of this contribution and how habitat values may change during the transition from eucalyptus to native species.

The 11,850-acre Program Area is situated within this cumulative landscape and consists primarily of eucalyptus-dominated stands interspersed with oak woodland, coastal scrub, and rural residential parcels. Program activities would be limited to mapped occurrences of invasive blue gum eucalyptus (*Eucalyptus globulus*), with site-specific restoration actions focused on reestablishing native habitat types appropriate to local conditions (e.g., topography, adjacent habitat, and soil type).

Would the project:	**Potentially Significant**	**Less Than Significant with Mitigation**	**Less Than Significant**	**No Impact**
Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐

Relevant cumulative projects in Santa Cruz and adjacent counties (Santa Clara, San Benito, and Monterey) include the Santa Cruz County (County) Regional Transportation Commission (RTC) State

Route 1 Highway Widening Projects, Monterey Bay Sanctuary Scenic Trail Network (Coastal Rail Trail) and associated County RTC Rail Trail projects, various County infill projects, Elkhorn Slough Eucalyptus Treatment and Wildfire Prevention Project (RCD of Monterey County), the Highway 101 Rocks Road Tree Removal Project (Caltrans), the UC Santa Cruz Wildfire Vegetation Management Plan (WVMP), and regional fuel reduction projects authorized under the California Vegetation Treatment Program (CalVTP).

Some of these projects are cumulatively comparable because of the large numbers of tree removal associated with project activities while others projects share similar vegetation management objectives and collectively contribute to regional trends in canopy structure and habitat availability. All of these projects contribute cumulatively to temporal loss of mature trees and canopy loss on a regional scale. While some of these projects are also restoration projects (e.g. Elkhorn Slough and Highway 101) and would therefore replace trees on site with native habitat, the majority of these projects would seek off-site locations for mitigation of tree loss, would be mitigated out of kind due to lack of available land for tree planting, have been approved with findings of overriding considerations despite significant impacts associated with tree loss, and will result in the permanent removal of trees at the various project locations, exacerbating temporal loss of trees.

The proposed Program would contribute to cumulative tree removal impacts in the region by facilitating the removal of up to 1000 acres of eucalyptus across southern Santa Cruz County.

The removal of mature trees within the Program Area would contribute to temporal loss of habitat value, delaying the reestablishment of ecological structure and function following treatment. Fundamentally a restoration program, all participating Project sites would be restored, on-site, through natural recruitment and planting of native species such as coast live oak, Douglas-fir, and redwood, which would replace non-native eucalyptus trees with native habitat, and will support the long-term recovery of vertical structure and raptor nesting habitat. In this respect, this Program is distinct from some of the other cumulative Projects identified. Nevertheless, it will take several decades (approximately 20 to 40 years) for replacement trees to develop mature height, branch structure, canopy complexity and habitat function and to support nesting by large-bodied raptor species comparable to the removed trees.

All eucalyptus removal activities will be subject to Program-wide avoidance and minimization measures. These include pre-construction biological surveys, seasonal work windows, species-specific exclusion buffers, and biological monitoring. A full description of these measures is provided in **Section 5 Impacts and Protective Measures** above. These protective measures will reduce the cumulative impact of tree removal by minimizing impacts to sensitive biological resources during Program implementation.

The Program is designed to support long-term ecological restoration, with all treatment areas subject to site-adapted revegetation. In areas with intact native understory, minimal invasives present, and adjacent native habitat, passive natural regeneration may be feasible. Where active restoration is required, planting or seeding with appropriate native species will be implemented based on local site conditions and adjacent habitat type, in support of habitat continuity and suitability for Santa Cruz long-toed salamander (SCLTS) and other sensitive species.

Further, to reduce the Program's contribution to cumulative impacts associated with tree removal within the greater setting, cumulative conservation goals will be incorporated into the Restoration Program. The Restoration Program will include Program-wide goals, objectives, and qualitative performance criteria designed to reduce the cumulative impacts of the Program, including but not limited to:

1. A cap on the number of acres of tree removal conducted annually to reduce the short-term impacts associated with tree removal including abrupt transitions in habitat value. Tree removal will be restricted to 90 acres per year, and no more than 45 acres in a given HUC 12 watersheds [USGS (WBD) 2025].

Although vegetation management projects across the cumulative analysis area may result in broad-scale impacts such as canopy loss and habitat modification, with protective measures in place, the Program would have less than significant cumulative impacts to biological resources due to the implementation of avoidance and minimization measures and restoration actions. These actions are designed to reduce short-term effects and promote long-term ecological recovery. Over time, the Program is expected to enhance native habitat quality and support landscape-scale habitat connectivity.

6.0 RESTORATION PROGRAM

6.1 RESTORATION PROGRAM OVERVIEW

Native habitat restoration is a primary component of the Program and will be designed and implemented to promote long-term ecosystem recovery and the restoration of native habitat functions and values. Native habitats also reduce wildfire and high-wind (e.g. topping, limbing) risks to properties. This section provides a Programmatic-level framework to guide preparation of a Programmatic Restoration Plan, under which Project-specific restoration plan details will be developed during individual Project implementation efforts.

6.2 RESTORATION GOALS

The restoration goals of the Program include the establishment, restoration, or enhancement of oak woodland habitat and other native habitats to promote the recovery of the SCLTS. In contrast with eucalyptus groves, which provide only marginal upland habitat, and may deter, restrict or limit movement through the groves, native habitats, especially oak woodland, coastal scrub, chaparral, and riparian habitats provide essential upland habitats in which SCLTS spend much of their lives. Other native habitat types (native grassland, mixed evergreen forest, redwood forest) local to the area, together with those listed above, comprise the native landscape of the Program Area, and support a suite of native plants and wildlife species as well the connectivity necessary to movement, dispersal, and genetic exchange.

In addition, the Program will reduce risks to landowners from fire and high wind events and improve public safety overall.

6.3 Project-Level Restoration Plans

To ensure that native habitat restoration is successful, in conjunction with the RCD, the County, and CDFW, all participating landowners would prepare Project-Level Restoration Plans. These plans will outline strategies and techniques specific to the Project Area, in compliance with the protective measures identified above, and will guide post-removal activities and ensure that treated areas transition to ecologically appropriate native habitat types. The RCD and/or its qualified agents will conduct monitoring of restoration areas to ensure that restoration and enhancement actions are successful, meet the predetermined success criteria, and/or, if restoration areas are not meeting designated targets, will recommend adaptive management actions to modify restoration efforts to better achieve restoration goals. The level of effort required will vary depending on baseline site conditions, adjacent habitat context, and the density and composition of invasive species.

Project-level Restoration Plans will apply the Restoration Potential Framework described below to determine the appropriate level of effort needed from passive natural recruitment in high-potential areas to intensive planting and on-going invasive weed management in low-potential sites. Many Project Areas may include a range of potential types of restoration in different zones and restoration plans would reflect this variability.

While specific methods may vary, all plans will be aligned with Program objectives and developed to ensure consistency with the Programmatic approach and applicable regulatory requirements.

6.4 Restoration Potential Ranking System

Proposed Project Areas will be evaluated using a three-tiered classification system and assigned a restoration potential ranking using the methods described above in Section 3.3. The assigned strata are defined as High, Moderate, or Low Potential, based on site-specific ecological conditions. Factors that determine the site-specific restoration potential include the density of eucalyptus within the stand, presence and cover of native trees (in openings in or under the eucalyptus canopy), abundance native understory species, extent and composition of invasive plant cover, and connectivity to adjacent intact native habitats.

This ranking system, summarized in **Table 5**, serves as a guide for the streamlined restoration mechanism that is proportionate to individual site conditions and effective on a Programmatic scale while still allowing for individual Project restoration actions to be tailored based on the ecological condition of each site.

Table 5. Strata of Restoration Potential for Programmatic Evaluation of Individual Project Areas, South County Habitat Restoration Program Area, Santa Cruz County, California.

Restoration Potential	Site Characteristics	Recommended Actions
High (3)	• Minimal invasives (except eucalyptus) present; • Native trees (e.g. oaks) present in openings in or under the eucalyptus canopy; • Native understory (e.g. coffeeberry, blackberry, poison oak) present, especially in openings in eucalyptus canopy and adjacent to eucalyptus; • Intact native habitat adjacent (on two or more sides) (natural recruitment anticipated)	• Remove eucalyptus; avoid native trees and understory wherever feasible; • Implement targeted invasive management as needed (i.e. if invasive plants colonize bare areas); • Allow natural recruitment from existing and adjacent habitats; limited need for active replanting; • Planting or seeding bare areas located greater than 200 feet from native habitat may be required (i.e. natural recruitment may not be effective due to distance from propagules), depending on topography (e.g. ridgelines upslope from native habitat); • Utilize adaptive management approach to ensure restoration occurs.
Moderate (2)	• Moderate level of invasives (e.g. broom) present in understory or adjacent to eucalyptus; • Native trees limited or absent within eucalyptus; • Some native understory (e.g. coffeeberry, blackberry, poison oak) present; • Intact or partially intact native habitat adjacent (on one or more sides) (natural recruitment possible)	• Remove eucalyptus; • Implement targeted invasive management as needed; • Allow natural recruitment from adjacent habitats, where present; • Planting or seeding required in some or most areas to assist restoration; • Utilize adaptive management approach to ensure restoration occurs.
Low (1)	• Dense almost monospecific eucalyptus with minimal openings for native plants; • Invasive species present or abundant; • Native trees absent; • Native understory minimal or absent; • Non-native or degraded native habitat adjacent (natural recruitment not anticipated).	• Remove eucalyptus; • On-going invasive management required; • Planting and seeding required; • Utilize adaptive management approach to ensure restoration occurs.

6.5 General Guidelines for Project-Level Restoration Plans

Restoration plans will be initiated by identifying adjacent native habitat types that would be suitable as reference habitats for restoration activities. Habitat types and associated plant species will be determined during Project-level planning and should consider soil conditions, hydrology, topography, slope, aspect, and surrounding habitat types.

Project Restoration Plans would include the following:

- Description of the pre-treatment conditions, including adjacent habitat types, sensitive plants, and wildlife present within or adjacent to the removal area.
- Physical characteristics of the Project Area, including soils, hydrology, topography, slope, and aspect.
- Restoration goals and approach, including:
  - Eucalyptus removal techniques (to avoid native species, if present).
  - Localized target habitat types to use a reference for restoration including assemblages of native plant species suitable to site specific conditions.
  - Areas (acres or square feet) of habitat to be created, restored, and/or enhanced.
  - Method of restoration (natural recruitment, seeding, planting, dispersal of salvaged topsoil)
  - Proposed planting palettes with species appropriate to the native habitat to be restored (see reference plant palettes below).
  - Restoration approach: invasive species removal, soil preparation.
  - Restoration timeline, including proposed schedule for removal, planting, and maintenance activities.
  - Performance Criteria, including success metrics (e.g., percent native cover, survivorship of plantings, reduction in invasives).
  - Monitoring, Reporting, and Adaptive Management.

The components listed are intended to ensure that each individual project supports long-term ecological recovery and contributes to the functions and values of diverse regional habitats.

Reference Planting Palettes

To support consistent and ecologically appropriate restoration, a set of Reference Planting Palettes is provided below. These are organized by the anticipated target habitat types most likely to result from eucalyptus removal across the Program Area. Each palette includes native species appropriate for the structural and functional attributes of the habitat type, such as canopy trees, shrubs, graminoids, and herbaceous species.

Habitat types with associated planting palettes include:

- Oak woodland
- Mixed evergreen forest
- Redwood forest
- Native Grassland (Prairie)
- Coastal scrub
- Chaparral
- Riparian
- Wetland

These palettes are provided for guidance only. Final species selections should reflect local site conditions, soil and hydrologic factors, and restoration goals. All species must be locally appropriate and free of invasive or non-native species.

Table 6. Oak Woodland Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Oak Woodland Plants	
Species	**Common Name**
Aesculus californica	California buckeye
Artemisia douglasiana	Mugwort
Baccharis pilularis	coyote brush
Bromus sitchensis var. carinatus	California brome
Ceanothus cuneatus	Buck brush
Clarkia purpurea	Purple clarkia
Clarkia rubicunda	Farewell to spring
Clarkia unguiculata	Woodland clarkia
Diplacus aurantiacus	sticky monkey flower
Elymus glaucus	Blue wildrye
Frangula californica	coffeeberry
Lupins nanus	Sky lupine
Melica californica	California melic grass
Pteridium aquilinum	Bracken fern
Quercus agrifolia	Coast live oak
Quercus parvula var. *shrevei*	Shreve oak
Quercus wislizeni	Interior live oak
Rubus ursinus	California blackberry
Stipa pulchra	Purple needle grass
Symophoricarpos mollis	Creeping snowberry
Toxicodendron diversilobum	poison oak
Umbellularia californica	California bay laurel

Table 7. Mixed Evergreen Forest Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Mixed Evergreen Plants	
Species	**Common Name**
Acer macrophyllum	Bigleaf maple
Acer negundo	Box elder
Arbutus menziesii	madrone
Bromus sitchensis var. carinatus	California brome
Clinopodium douglasii	Yerba Buena
Corylus cornuta var. *californica*	California hazelnut
Dryopteris arguta	Woodfern
Fragaria vesca	Wood strawberry
Lonicera hispidula	Pink honeysuckle
Notholithocarpus densiflorus	tanoak
Pseudotsuga menziesii	Douglas fir
Pteridium aquilinum	Bracken fern
Quercus agrifolia	Coast live oak
Rubinus ursinus	California blackberry
Sanicula crassicaulis	Pacific sanicle
Stachys bullata	California hedge nettle
Symophoricarpos mollis	Creeping snowberry
Toxicodendron diversilobum	Poison oak

Table 8. Redwood Forest Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Redwood Forest Plants	
Species	**Common Name**
Asarum caudatum	Wild ginger
Corylus cornuta var. californica	California hazelnut
Corylus cornuta var. *californica*	California hazelnut
Lonicera hispidula	Pink honeysuckle
Maianthemum racemosum	False Solomon's seal
Notholithocarpus densiflorus	tanoak
Oxalis oregana	Redwood sorrel
Polystichum munitum	Sword fern
Pseudotsuga menziesii	Douglas fir
Sequoia sempervirens	Coast redwood
Trillium ovatum ssp. *ovatum*	Western wakerobin
Vaccinium ovatum	Evergreen huckleberry

Table 9. Native Grassland (Prairie) Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Native Grassland (Prairie) Plants	
Species	**Common Name**
Achillea millefolium	Yarrow
Brodiaea elegans	Harvest brodiaea
Bromus sitchensis var. *carinatus*	California brome
Castilleja exserta	Purple owl's clover
Danthonia californica	California oatgrass
Eschscholzia californica	California poppy
Lasthenia californica	goldfields
Lupinus bicolor	Miniature lupine
Lupinus nanus	Sky lupine
Poa secunda var. secunda	Pine bluegrass
Sisyrinchium bellum	Blue-eyed grass
Stipa pulchra	Purple needlegrass
Triteleia ixioides	Golden brodiaea
Triteleia laxa	Ithuriel's spear

Table 10. Coastal Scrub Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Coastal Scrub Plants	
Species	**Common Name**
Acmispon glaber	deerweed
Aster chilensis	California aster
Baccharis pilularis	Coyote brush
Carex globosa	Round fruited sedge
Diplacus aurantiacus	Sticky monkeyflower
Eschscholzia californica	California poppy
Frangula californica	Coffeeberry
Gaultheria shallon	Salal
Horkelia cuneata	Wedge leaved horkelia
Marah fabacea	California man-root
Pteridium aquilinum	Bracken fern
Rubus urisinus	California blackberry
Sambucus mexicana	Blue elderberry
Scrophularia californica	California bee-plant
Toxicodendron diversilobum	Poison oak

Table 11. Chaparral Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Chaparral Plants (including San Andreas Oak Woodland)	
Species	**Common Name**
Acmispon glaber	Deerweed
Arctostaphylos crustacea var. *crinita*	Crinite manzanita
Arctostaphylos hookerii ssp. hookerii	Hooker's manzanita
Arctostaphylos pajaroensis	Pajaro manzanita
Carex globosa	Round fruit sedge
Ceanothus cuneatus var. *cuneatus*	Buckbrush ceanothus
Ceanothus dentatus	Dwarf ceanothus
Ceanothus thyrsiflorus var. *thrysiflorus*	Blue blossom
Crocantheum scoparium	Peak rush rose
Diplacus aurantiacus	Sticky monkey flower
Eriodictyon californicum	Yerba santa
Frangula californica	coffeeberry
Garrya eliptica	Silk tassels
Heteromeles arbutifolia	Toyon
Lupinus chamissonis	Dune bush lupine
Poa secunda var. *secunda*	Pine bluegrass
Quercus agrifolia	Coast live oak

Table 12. Riparian Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Riparian Plants	
Species	**Common Name**
Acer negundo	Box elder
Alnus rubra	Red alder
Cornus sericea	American dogwood
Dryopteris arguta	California woodfern
Frangula californica	coffeeberry
Lonicera involucrata	Twinberry
Lonicera hispidula	Pink honeysuckle
Morella californica	Pacific wax myrtle
Platanus racemosa	Western sycamore
Populus trichocarpa	Black cottonwood
Ribes divaricatum var. *pubiflorum*	Straggly gooseberry
Rubus ursinus	California blackberry
Salix laevigata	Red willow
Salix lasiandra var. *lasiandra*	Shining willow
Salix lasiolepis	Arroyo willow
Sambucus mexicana	Blue elderberry
Toxicodendron diversilobum	Poison oak

Table 13. Wetland Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Wetland Plants	
Species	**Common Name**
Baccharis glutinosa	Marsh baccharis
Carex barbarae	Valley sedge
Carex densa	Dense sedge
Carex obnupta	Slough sedge
Eleocharis macrostachya	Spike rush
Elymus triticoides	Beardless wild rye
Erythranthe guttata	Seep monkeyflower
Euthamia occidentalis	Western goldenrod
Juncus effusus ssp. *pacificus*	Pacific rush
Juncus occidentalis	Slender rush
Juncus patens	Common rush
Juncus phaeocephalus	Brown-headed rush
Nasturtium offininale	Watercress
Oenanthe sarmentosa	Water parsley
Potentilla anserina	Silverweed cinquefoil
Schoenoplectus californicus	California bulrush
Scirpus microcarpus	Small fruited bulrush

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APPENDIX A. WILDLIFE SPECIES NARRATIVES

8.0 WILDLIFE SPECIES NARRATIVES

8.1 CROTCH'S BUMBLE BEE

The Crotch's Bumble Bee (*Bombus crotchii*) is a candidate species for listing as Endangered under California Endangered Species Act (CESA) (CDFW 2022). While awaiting listing under CESA by California Department of Fish and Wildlife (CDFW), candidate species are given full CESA protection. This species inhabits open grassland and scrubland habitat that contain requisite underground nesting habitat, such as small mammal burrows, soft disturbed soil, or leaf litter (Goulson 2010, Williams et al. 2014). This species may also inhabit semi-natural habitats surrounded by highly modified landscapes. The active period for a colony is when detection probability is highest for this species and occurs annually between April and August (CDFW 2023), but queens may emerge from hibernation as early as February.

Reasons for decline include agricultural intensification and urbanization throughout large parts of its range. The Crotch's Bumble Bee, and bumble bees in general, face additional threats from pesticide use, non-native pathogens, and competition with non-native bees.

8.2 PACIFIC LAMPREY

Pacific lamprey (*Entosphenus tridentatus)* is a California Species of Special Concern (SSC). It spawns in gravel-bottomed streams at the upstream end of riffle habitat, typically between March and July. Larvae (ammocoetes) occupy areas of low velocity with fine substrates where they burrow, grow, and live as filter feeders for 3 to 7 years and feed primarily on diatoms and algae. Metamorphosis to the juvenile phase typically occurs over several months from summer through fall. At this stage the juveniles leave the burrow substrate and enter the water column. From there, juveniles migrate to the ocean where they mature into adults (CDFW 2022f,g).

Although no single threat has been identified as the primary cause of decline, the Pacific Lamprey, like many anadromous fish, is significantly impacted by habitat degradation/loss and migration barriers such as dams, which hinder successful reproduction. Additional threats include poor water quality, changes in ocean conditions, dredging, dewatering, and climate change.

8.3 RIFFLE SCULPIN

The Riffle Sculpin (*Cottus gulosus*) is a California SSC. It is a small, benthic freshwater fish native to cool, well-oxygenated streams in California. It typically inhabits shallow, fast-flowing perennial streams with gravel or cobble substrates, where it shelters under rocks and forages on aquatic invertebrates. The Riffle Sculpin is highly sensitive to changes in water quality, temperature, and flow, making it a useful indicator of stream health. It lays eggs in late winter/early spring under rocks within swiftwater reaches of the stream.

Their physiological sensitivity to reduced stream flows and elevated water temperatures make this species exceptionally sensitive to habitat degradation. Additionally, population fragmentation and increasing isolation heighten the risk of local extinctions, as connectivity between populations diminishes.

8.4 STEELHEAD

The Central California Coast Steelhead (*Oncorhynchus mykiss irideus pop. 8*) is listed as threatened under the federal Endangered Species Act (ESA). Steelhead are anadromous fish that migrate between their natal stream and the ocean. They require gravel substrate to spawn, and the juveniles remain in their natal stream for up to a few years before beginning their downstream migration to estuarine and marine environments. The adults occupy these marine environments for one to three years before the steelhead returns to the stream where it was born to spawn. The Steelhead is iteroparous, meaning an adult may not die after spawning but instead returns to the ocean and repeats the adult portion of its lifecycle one or more times (NOAA Fisheries 2005, 2016a).

Essential habitat features include cool, clean water without barriers to passage, loose gravels free of sediment for spawning and egg development, adequate pools with instream cover such as vegetation, large rocks, or undercut banks, and off-channel pools or other areas protected from winter storm flows. Coastal estuaries, or lagoons are also essential to smolts, as a transitional habitat between freshwater and marine environments that provides highly productive feeding opportunities and brackish water for acclimation to saltwater. The range of the Central California Coast Steelhead is from the Russian River to Aptos Creek, including the San Francisco Bay tributaries, in coastal streams that lack natural passage barriers (NOAA Fisheries 2005, 2016a).

Steelhead face threats from habitat degradation, including streamflow alteration, sedimentation, and barriers to migration such as dams and culverts that prevent successful reproduction. Urban development, water diversions, and climate change have further reduced access to critical spawning and rearing habitat.

8.5 CALIFORNIA RED-LEGGED FROG

The California Red-legged Frog (CRLF) (*Rana draytonii*) is listed as threatened under the federal Endangered Species Act. The CRLF is also designated as a California SSC by the California Department of Fish and Wildlife (CDFW). The CRLF requires still or slow-moving water for egg deposition and larval development (USFWS 2010a). Aquatic breeding habitats include natural and manmade ponds, marshes, sloughs, slow-moving streams, backwater portions of rivers and portions of some reservoirs where predatory fish have limited access (USFWS 1996; Alvarez et al. 2024). The CRLF also requires aquatic non-breeding habitat (Bulger *et al*. 2003; Fellers and Kleeman 2007; USFWS 2010a). Non-breeding habitats are primarily along permanent and seasonal streams or perennial ponds but may also include well-vegetated areas that remain cool through the summer including seeps, springs, canals and other moist or wet locations with similar characteristics, both natural and manmade. Movements of post-metamorphic juveniles generally occur with the first rains of the weather-year, in response to receding water, or following the breeding season (Fellers and Kleeman 2007; Allaback *et al*. 2010). Use of upland habitats by CRLF varies over the course of the year, although they generally remain close to aquatic habitats during the dry season (Bulger *et al*. 2003; Tatarian 2008; Keong, 2015; Halstead and Kleeman 2017). Beginning with the first rains of the fall, CRLF may engage in longer movements and remain away from water for weeks at a time, although most non-migrating adults are found within approximately 300 feet of aquatic habitats

(Bulger *et al*. 2003; USFWS 2010; Keong, 2015; Halstead and Kleeman 2017). During the late fall and winter, CRLF adults migrate to breeding ponds. A radio-telemetry study in Santa Cruz County determined that migrating individuals generally engage in straight-line movements often irrespective of riparian corridors, and that they may move up to two miles between non-breeding and breeding sites (Bulger *et al*. 2003). The distances moved by dispersing CRLF is highly dependent on local conditions and spatial distribution of aquatic and nonbreeding habitats (USFWS 2010a).

Threats to the CRLF include degradation, alteration and loss of habitat, water diversions, and introduction of non-native aquatic species (USFWS 1996, 2002). The nature and degree of threats vary in different areas. Wetlands in many parts of its range have been drained or filled in the past for agricultural or residential purposes. Historical, large-scale commercial harvest of the species also contributed to its decline (Jennings and Hayes 1994). Occurrence of CLRF has shown to be negatively correlated with presence of the introduced American bullfrog (bullfrog; *Lithobates catesbeianus*) (Moyle 1973; Hayes and Jennings 1986, 1988; Alvarez *et al*. 2003), but both species may persist at certain locations (Cook and Jennings 2007; D'Amore *et al*. 2009). Although the CRLF was historically widespread in California, it has been eliminated from a significant portion of its range, particularly in southern California (USFWS 1996; Fellers 2005; Barry and Fellers 2013).

8.6 California Giant Salamander

The California Giant Salamander (*Dicamptodon ensatus*) is designated as a Species of Special Concern by CDFW (CDFW 2025). The California Giant Salamander is an endemic with a limited range restricted to coastal areas north and south of San Francisco Bay from southern Mendocino County to south Santa Cruz County (Thomson et al. 2016). The California Giant occurs in redwood/coniferous forest, oak woodlands and coastal chaparral, and breeds during the rainy season in perennial and some seasonal streams, often in headwaters (Thomson et al. 2016). Larvae over-summer instream for 18 months or more and are therefore often found with a mix of age classes including paedomorphic adults (Petranka 1998; Thomson et al. 2016; Hansen and Shedd 2025). Most observations of adults have been in proximity to riparian areas but very little information is available regarding upland habitat use. Unusual aggregations of more than 20 adults discovered during culvert replacements in Marin County suggest that subterranean refuges are critical to the adult life cycle (Fellers, et al. 2010). Additional information regarding the species in the project area is provided as an attachment.

The status of the California Giant Salamander population is difficult to determine given the difficulties of monitoring breeding adults. Its range overlaps with human development in many areas. Timber harvest likely reduces habitat quality. Similarly, increased fire intensities due to the changing climate may further reduce its already restricted range defined by biogeographic features.

8.7 Santa Cruz Black Salamander

The Santa Cruz Black Salamander (SCBS) (*Aneides niger*) is designated as a Species of Special Concern by CDFW (CDFW 2025). The species occupies a limited range in forested portions of Santa Cruz, extreme southern and eastern San Mateo and western Santa Clara counties with its southern range limit at Hecker Pass. The SCBS occurs in mixed Evergreen-Deciduous Forest and Redwood

Forest. It has been recorded from near sea level to elevations of approximately 800 m (Reilly and Wake 2019). It is mostly nocturnal and usually observed during the rainy season but may be found under woody debris and rocks near perennial streams, seeps, springs and along riparian corridors all year round. It is the most semiaquatic member of the species complex. Females lay five to 25 or more eggs on land in moist, sheltered places. The young develop in the egg and hatch directly into juveniles with an adult body form (direct development). Additional information regarding the species in the project area is provided as an attachment.

Little is known regarding population trends for the SCBS although recent surveys in historical locations suggest a decline. Populations have disappeared due to housing developments on the east slope of the Santa Cruz mountains (Hansen and Shedd 2025). Range contractions are anticipated due to the changing climate.

8.8 Santa Cruz Long-Toed Salamander

The Santa Cruz Long-toed Salamander (SCLTS) (*Ambystoma macrodactylum croceum*) is listed as Endangered under both federal and California Endangered Species Acts. The subspecies is also designated as a Fully Protected Species under the Fish and Game Code of California. The SCLTS is one of five subspecies of the long-toed salamander (*Ambystoma macrodactylum*) distributed throughout northeastern California and north into British Columbia (Petranka 1998; McGinnis and Stebbins 2018). The subspecies *croceum*, first discovered in 1954 (Russell and Anderson 1954), occupies a very small range that is limited to southern Santa Cruz and extreme northern Monterey Counties in the vicinity of the coast. Given its extremely small range, barriers to genetic flow between breeding populations and ongoing habitat fragmentation, the SCLTS is considered vulnerable to extinction (USFWS 1999, 2009).

The SCLTS breeds in still, freshwater aquatic habitats, including seasonal ponds, permanent ponds and sloughs. Eggs are deposited on submergent vegetation and woody debris. Larvae require approximately 90 to 150 days to reach transformation (Ruth 1988). SCLTS inhabit densely vegetated uplands including coast live oak woodland, willow riparian, mixed evergreen forest and coastal scrub. They remain underground in small mammal burrows and other moist refugia such as fallen logs and along the root systems of plants (Ruth and Tollestrup 1973; Ruth 1988). Adult SCLTS remain below ground during the dry season and emerge during rainy nights in the fall and winter to migrate to breeding ponds. SCLTS have been documented travelling more than one mile between upland habitats and their breeding ponds (Ruth 1988), and USFWS may assume presence of SCLTS if a known breeding pond lies within 1.2 miles (2 km) of appropriate upland and no significant barriers to movement exist (USFWS and CDFW 2012). Additional information regarding the species in the project area is provided as an attachment.

Habitat loss and fragmentation, introduction and invasions of non-native aquatic predators, nonnative plant proliferation, competition with Rough-skinned Newts (*Taricha granulosa*) along with removal of understory vegetation in oak woodland habitats for fire control, poison oak removal, livestock or other purposes are the primary threats to the persistence of the SCLTS. Road mortality is likely a major factor affecting population levels, although several breeding sites persist along busy roads. SCLTS from the Larkin Valley/Freedom area are genetically isolated from SCLTS at Valencia

Lagoon and Seascape Uplands, even though they are in proximity, since State Highway 1 presents a complete physical barrier to gene flow.

8.9 Northwestern Pond Turtle

The northwestern Pond Turtle (WPT) (*Actinemys marmorata*) is proposed for listing under the Federal Endangered Species Act as threatened and is a California SSC. It occurs in the Coast Ranges south of San Francisco Bay to northern Baja California (Hansen and Shedd 2025). It primarily inhabits permanent water sources including ponds, streams and rivers. Although it is primarily an aquatic species, it can move across land in response to fluctuating water level, an apparent adaptation to the variable rainfall and unpredictable flows that occur in many coastal California drainage basins (Rathbun, et al. 1992). The species favors sites with deep pools and with an abundance of basking sites, such as partially submerged logs or rocks, matted emergent vegetation, floating aquatic vegetation or exposed shorelines. Females travel from aquatic sites into open, grassy areas to lay eggs in a shallow nest (Holland 1992; Rathbun et al. 1992, 2002). Although nests have been reported up to 1,300 feet from water bodies (Jennings and Hayes 1994), Rathbun et al. (2002) found the average distance to water was 92 feet (range 31–260 feet).

The WPT was traditionally split into two subspecies, distinguished in part by the presence (*marmorata*) or absence (*pallida*) of inguinal scutes. Genetic research was used to determine that the two taxa should be recognized as separate species (Spinks, et al. 2014). The boundary between southwestern pond turtle and northwestern pond turtle has been revised over time. The specimens examined by Spinks et al. (2014) in the coast ranges south of San Francisco Bay were *pallida*. Thompson et al. (2016), Shaffer et al. (2019) and Hansen and Shedd (2025) adopted that range. However, based on additional genetic work, USFWS revised the species boundary between the two species southwards to the middle of the Monterey Bay coastline, meaning the project area is within the range of *marmorata* (USFWS 2023a, 2023b).

The WPT turtle faces a range of threats that have led to widespread population declines across its range. Chief among these threats are habitat loss and degradation due to urban development, agricultural expansion, and climate change, which have fragmented turtle populations and reduced access to suitable nesting sites. Introduced predators such as bullfrogs and largemouth bass, as well as increased drought and flooding, further compound these pressures. Hydrologic alterations, including water diversions, damming, and stream channelization, have altered aquatic habitats critical for the species. Additionally, competition with the invasive Red-eared Slider (*Trachemys scripta elegans*) may reduce the success of WPT populations, especially when resources are otherwise limited.

8.10 Allen's Hummingbird

The Allen's Hummingbird (*Selasphorus sasin*) is listed by the USFWS as a BCC. It migrates from Mexico to arrive in coastal California late winter/early spring. This species breeds from southwest Oregon to southern California, including on some of the Channel Islands. The breeding period is from February 1 to mid-July, with most breeding occurring March-June. In anticipation of the arrival of the females, males squabble to defend food sources and territory in shrub, chaparral, riparian

woodland, mixed evergreen, and eucalyptus groves in the fog belt. Females typically select thicker riparian understory vegetation for nesting. Females build the nest from downy material such as from willows mixed with spider webs and with decorated with moss and lichen. The female provides all the care at the nest. The Allen's Hummingbird feeds on floral nectar and small insects.

Although the specific drivers of population decline in this species are not well understood, its geographically restricted breeding range makes it particularly vulnerable.

8.11 Bald Eagle

The Bald Eagle (*Haliaeetus leucocephalus*) is listed as endangered under CESA and is designated a Fully Protected species by CDFW. This large bird of prey can be found throughout most of California at lakes, reservoirs, rivers, rangelands, and coastal wetlands. They are opportunistic foragers preying upon a variety of small animals, with a preference for fish over other types of prey. The species often scavenges, pirating food from other species. Breeding pairs remain together for life, or until the death of one individual at which time the surviving bird may seek a new mate. They build large stick nests, frequently located in the upper canopy of the tallest trees in the area. Breeding adults will often reuse previous nests, repairing and expanding previous nests each year and the pair's territory typically includes several nests. One to three eggs are laid in the winter or early spring, and chicks fledge when they are about 11 or 12 weeks old.

Widespread use of the pesticide DDT beginning in the 1940s led to eggshell thinning in Bald Eagles, resulting in decreased reproductive success and sharp population decline. While populations have seen a significant increase since the banning of DDT, other pesticides and contaminants such as lead, as well as habitat destruction, continue to threaten the recovery of this species.

8.12 California Thrasher

The California Thrasher (*Toxostoma redivivum)* is listed by USFWS as a BCC. The California Thrasher primarily inhabits scrub/chapparal and sagebrush habitat types but may also be found within scrub adjacent riparian and oak woodland. Nests are most often placed well hidden within dense scrub. The nesting season typically occurs from February through July but nesting has been documented starting as early as November.

Habitat fragmentation and urban/agricultural development represent the largest threat to California Thrasher populations.

8.13 Golden Eagle

The Golden Eagle (*Aquila chrysaetos*) is a CDFW Fully Protected species (CDFW CNDDB 2023). In central California, the Golden Eagle typically hunts over grasslands with high topographic relief (rolling hills and mountains) building nests in cliffs or trees, often in oak woodland or oak savanna with a wide view of the surrounding area, updrafts for flight, and proximity to small to medium sized mammal hunting grounds (Katzner et al. 2020).

Human activities account for the majority of Golden Eagle mortality. Threats include intentional shooting, poaching, poisoning, electrocution on power lines, collision with wind turbines, and habitat loss due to development and resource extraction.

8.14 Grasshopper Sparrow

The Grasshopper Sparrow (*Ammodramus savannarum)* is a California SSC. The California breeding range for this species is a very narrow band along the coast. The Grasshopper Sparrow is associated with short to medium-height grasslands, often with patchy bare ground, and may be found in pastures and agricultural fields. In the west, this species may utilize lusher grasslands with shrub cover. The Grasshopper Sparrow nests on the ground in grassland habitats between April and June. Forages on insects and seeds (Vickery 1996).

The loss and fragmentation of grassland habitat represents the greatest threat to this obligate grassland species.

8.15 Lawrence's Goldfinch

The Lawrence's Goldfinch is listed as a BCC by the USFWS (2021). It typically occupies arid and open woodlands in the near vicinity of three habitat components: chaparral or other brushy areas; tall annual weed fields; and water source such as stream, small lake, or farm pond. It prefers native plant seeds as a food source, and breeding sites are typically close to water. On the Central Coast, the Lawrence's Goldfinch tends to nest in oaks of moderate to small diameter with some lichen; however, this species may use riparian woodland, chaparral, or coastal scrub (Watt et al. 2016; Rosenberg et al. 1991).

While Lawrence's Goldfinch may benefit from an increase in flowering annual food sources caused by low intensity agriculture, larger scale, industrialized agriculture often results in loss of habitat and food sources. The relatively restricted range and small population size of this species make it especially vulnerable to these threats.

8.16 Northern Harrier

The Northern Harrier (*Circus hudsonius*) is a California SSC. It hunts over open wetlands, marshes, grasslands, pastures, and active and fallow agriculture fields. Its diet consists of rodents and other small to medium-sized mammals, birds, insects, reptiles, and frogs (Smith et al. 2011).

Breeding occurs from April to September. The harrier nests in treeless habitats, building a loose nest composed of grasses, forbs, weeds, and wetland plants, on the ground or in thick vegetation near the ground in a well-concealed location, often near creeks or stock ponds. Females brood, raise and defend the young without the males. However, male and female Northern Harriers will roost communally (on the ground) during the non-breeding season (Smith et al. 2011).

The primary threat to the Northern Harrier is the loss of wetland and undisturbed grassland habitats, both of which are frequently threatened by urban and agricultural development.

8.17 Nuttall's Woodpecker

The Nuttall's Woodpecker (*Dryobates nuttallii*) is listed by USFWS as a BCC. It occurs primarily in California's oak woodlands but may also be observed in riparian woodlands, forested suburban areas, and, rarely, in conifer forests. Its distribution stretches from northernmost California to northern Baja California. The Nuttall's Woodpecker forages in the crevices of trees, gleaning insects primarily. Breeding occurs between April and July. Nest sites are cavities in soft wood, with the male typically excavating the cavity prior to egg laying and the both the male and female refining the cavity during egg-laying (Lowther and Pattern 2020).

While populations currently appear stable, the restricted range of this species makes it vulnerable to urban and agricultural development of the oak woodland and riparian habitats on which it relies.

8.18 Oak Titmouse

The Oak Titmouse (*Baeolophus inornatus*) is listed by USFWS as a BCC. It is a common year-round resident of warm, dry woodlands, restricted almost entirely to California, but ranges from southwest Oregon to northwest Baja California. The Oak Titmouse occupies predominantly oak or mixed oak-pine forests but has also adapted to other similar habitats such as open pine forests in central California. It has a varied diet that is composed of plant parts including seeds and berries, as well as invertebrates. The Oak Titmouse pair bonds during their first breeding season, and the pair mates for life. The breeding pair builds a nest of grass, moss, mud, hair, feathers, and fur in a woodpecker hole, natural cavity, or nest box and may partially excavate their own cavities. In central California, breeding activity typically occurs between late February and the end of June; late nest-building (June) indicates a replacement nest or a second clutch (Cicero 2000, Cicero et al. 2017).

Destruction of oak woodland constitutes the primary threat to this range restricted species.

8.19 Olive-sided Flycatcher

The Olive-sided Flycatcher (*Contopus cooperi*) is a US Fish and Wildlife Service (USFWS) Bird of Conservation Concern (BCC) and a California SSC. It breeds in woodlands and forests, at edges and openings, such as meadows, grasslands, wetlands and ponds, near open water from Alaska through Canada into California. It builds a cup nest of twigs, rootlets, and lichens, placed near the tip of a horizontal branch. Tall, prominent trees and snags are used for perching, singing and foraging.

While causes of population decline in the Olive-sided Flycatcher are not fully understood, theories include the reduction in extent and suitability of forested habitat, particularly of postfire habitat. Populations may be impacted by habitat degradation on their wintering grounds in Central and South America, but further research is needed.

8.20 Vaux's Swift

The Vaux's Swift (*Chaetura vauxi*) is a California SSC. It nests in large tree hollows in coniferous and mixed coniferous forested environments. The nest is made of conifer needles or small twigs glued together with salvia and attached to inside wall of a hallow tree, usually near the bottom. Post

breeding flocks of up to several hundred may roost together in chimney like tree hollows. The Vaux's Swift is also known to use manmade chimneys. Known for its quick and agile flight, it rarely perches except when nesting or roosting and even is expected to mate on the wing. The Vaux's Swift is almost entirely insectivorous (Bull and Collins 2007).

Because the Vaux's Swift relies on large tree cavities and hollow snags for nest and roost habitat, logging is considered to be one of the primary threats to this species. Suitable habitat is also lost when chimneys are replaced or covered with spark-arresters.

8.21 Western Screech-Owl

The Western Screech Owl (*Megascops kennicottii*) is listed as a BCC by the USFWS (2021). It is a small, nocturnal raptor that occupies a wide range of wooded habitats, including riparian forests, oak woodlands, mixed evergreen forests, and urban or suburban areas with mature trees. It nests in natural tree cavities, old woodpecker holes, and occasionally nest boxes. This species is non-migratory and maintains relatively small home ranges centered around suitable nesting and foraging habitat. Its diet consists primarily of insects, small mammals, and other invertebrates, hunted during low-light hours.

Loss of habitat is the primary conservation concern for the Western Screech-Owl.

8.22 White-tailed Kite

The White-tailed Kite (*Elanus leucurus*) is a CDFW Fully Protected species. It inhabits agricultural fields, open grasslands, savannah-like habitats, and riparian and oak woodlands in a relatively narrow band on the west coast of the U.S. and Canada and over large parts of Mexico. An abundance of small prey is a requisite habitat feature. The White-tailed Kite feeds on rodents, lizards, birds, and insects. Nests sites are variable, and may be located in herbaceous open stages of most habitats from large scrub to trees. The kite makes a stick nest near the top of its nest site, camouflaged from below but open on top. Some nest site fidelity has been observed. Kites may nest semi-colonially. Breeding season occurs from late February to early August. Occasionally kites will double brood in a single season (Dunk 1995, Laursen, Pers. Comm 2018).

Loss of open habitat due to agriculture and widespread use of DDT in the early 20th century resulted in dramatic decrease of prey abundance and the subsequent near extinction of the White-tailed Kite. While populations have rebounded significantly since the banning of DDT and increased focus on land conservation, habitat loss remains a threat to this species.

8.23 Wrentit

The Wrentit (*Chamaea fasciata)* is listed by USFWS as a BCC. It occurs along the west coast (west of the Cascades and the Sierra Nevada) from the Columbia River to Baja California. The Wrentit is abundant in shrublands, especially coastal scrub and chaparral; and a variety of other habitats with adequate understory cover such as timber and riparian forests, oak woodland, and urban and suburban areas. Wrentits typically mate for life and both the male and the female defend their territory year-round. Breeding occurs from mid-March to early August. Nest sites are often in dense

scrub such as California sage, California blackberry, poison oak or coffeeberry, but may also be situated in trees. Nests are constructed of strips of bark, twigs, cobwebs, and are lined with grasses, and other softer materials and decorated with lichen along with materials gleaned from humans. The Wrentit eats insects, spiders, fruit, and seeds (Geupel and Ballard 2020).

Loss and fragmentation of chaparral and scrub habitat is the primary threat to the Wrentit. The effects of habitat degradation may be exacerbated in this species due to its restricted range, exceptionally short dispersal distance, and high site fidelity.

8.24 Yellow Warbler

The Yellow Warbler (*Setophaga petechia)* is a California SSC (CDFW 2023c, Shuford and Gardali 2008). The Yellow Warbler forages in dense riparian understory and nests in riparian woodland and shrub with an open canopy along streams or other watercourses. Nesting typically occurs between May and August (Lowther et al. 2020).

Loss of riparian habitat, especially due to cattle grazing along riparian corridors, is a primary threat to this species. Brood parasitism by Brown-headed Cowbird may also play a role in population decline.

8.25 Long-legged Myotis

The Long-legged Myotis (*Myotis volans*) is considered a High Priority species by the WBWG. It roosts primarily in large hollow tree snags, or live trees with exfoliating bark; but also uses rock crevices, mines, and buildings. This species is most common in woodland and forest habitats but also occupies chaparral and coastal scrub. The Long-legged Myotis forages in and around the forest canopy, over water and open habitats and is associated with short-lived patches of high insect density. The Long-legged Myotis forms maternity colonies with young born in June and July and volant 3-6 weeks later. The Long-legged Myotis is most active 3-4 hours after sunset. This species probably makes short migrations to winter hibernacula (Warner and Czaplewski 1984).

Long-legged Myotis are threated by habitat loss, especially due to logging and mine closures.

8.26 Pallid Bat

The Pallid Bat (*Antrozous pallidus)* is a California SSC and is considered a High Priority species by WBWG. It inhabits the arid and semi-arid regions of western North America and is easily recognized by its large ears and pale fur. Unlike most bats that catch insects in flight, Pallid Bats are ground foragers, preying on large arthropods like beetles, crickets, and scorpions. They roost in caves, rock crevices, and buildings. The Pallid Bat is considered especially sensitive to noise disturbance.

Threats to this species include the demolition of buildings and other structures like bridges used for roosting and nesting. The Pallid Bat's tendency to form large roosts and its high sensitivity to disturbance makes mass roost and nest abandonment a significant conservation concern.

8.27 Townsend's Big-eared Bat

Townsend's Big-eared Bat (*Corynorhinus townsendii*) is a California SSC and is considered a High Priority species by WBWG. It is medium-sized, insectivorous bat distinguished by its large ears and relatively slow, maneuverable flight, which allows it to forage effectively in cluttered habitats. This species occurs in a variety of habitats across California, including coastal scrub, riparian, oak woodland, coniferous forest, desert regions, and agricultural areas typically roosting in caves, abandoned buildings, mines, and hollow trees. Townsend's Big-eared Bat is highly sensitive to disturbance, particularly at maternity and hibernation roosts, and exhibits strong site fidelity to established roosting locations. It feeds primarily on moths and other soft-bodied insects, often foraging along edges and within dense vegetation.

The primary threat to Townsend's Big-eared Bat is disturbance and destruction of roosts. Because of their high sensitivity to disturbance, roost sites may be abandoned after even minor human presence.

8.28 Western Red Bat

The Western Red Bat is a California SSC and is considered a High Priority species by the Western Bat Working Group (WBWG). It roosts in foliage, primarily in riparian and wooded habitats, along streams and in edge habitats or habitat mosaics that provide open areas for foraging. The Western Red Bat prefers roost sites that are protected from above and open below and located above dark ground cover (Harvey et al. 1999, Pierson et al. 1997). Young are born between late May and July and volant 3-6 weeks later. The Western Red Bat begins foraging 1 - 2 hours after sunset and again several hours before sunrise, corresponding to periods of insect activity. This species may migrate a short distance between summer and winter ranges (WBWG 2017).

The primary threat to the Western Red Bat is loss of riparian habitat used for foraging and roosting. Additionally, populations in and near agriculture may be threatened by a reduction in prey availability caused by intensive use of pesticides.

8.29 San Francisco Dusky-footed Woodrat

The San Francisco Dusky-footed Woodrat (*Neotoma fuscipes annectens*) is a California SSC and is associated with riparian, oak woodland, redwood forest, and chaparral or other scrub habitats. The woodrat builds houses on the ground or in trees, utilizing understory, woody debris, human debris, structures or buildings. Houses range in size from 3 to 8 feet across at the base, up to 6 feet tall, and up to approximately 30 feet above the ground in tree canopies. The woodrat tends to live in colonies of 3 to 15 or more houses, with the inhabitants often representing multiple generations. Houses have food caches, latrines, and often *Peromyscus* sp. nests and/or amphibians within. The woodrat is mostly nocturnal, leaving its house to forage on different parts of the same woody plant seasonally including leaves, bark, seeds and fruit of coast live oak, coffeeberry, poison oak, elderberry, but also grasses, flowers, and fungi. The woodrat breeds from December to September with a peak in mid-spring (Sakai and Noon 1993).

The San Francisco Dusky-footed Woodrat is threatened by habitat loss and degradation due to development, fire, and grazing. Destruction of understory habitat, even if the larger habitat remains intact, may reduce suitability for use by this species.

8.30 American Badger

The American badger (*Taxidea taxus*), a California SSC, is an uncommon but documented resident of Santa Cruz County. It is a year-round inhabitant across most of California, excluding portions of the northern coastal region (Grinnell et al. 1937). This species prefers open, dry stages of shrubland, forest, and herbaceous habitats that feature friable soils suitable for burrowing. Badgers excavate dens in loose soils for cover and may reuse existing burrows or dig new ones nightly during warmer months (Messick and Hornocker 1981). This species is nocturnal and diurnal, and undergoes variable periods of torpor in winter (Long 1973). Home range sizes vary significantly seasonally and geographically. As opportunistic carnivores, American badgers primarily prey on fossorial rodents, including ground squirrels, pocket gophers, rats, mice, and chipmunks. Their diet may also include reptiles, insects, earthworms, eggs, birds, and carrion, shifting in composition with seasonal prey availability. Mating typically occurs in summer and early fall, with delayed implantation extending gestation to between 183 and 265 days. Young are born in March or April, are weened after approximately 8-12 weeks, and young badgers typically disperse by the end of August or September.

The species is threatened by habitat loss and fragmentation from urban and agricultural development. Additional threats include historical and ongoing impacts from predator control measures, such as indiscriminate trapping and the use of persistent poisons.

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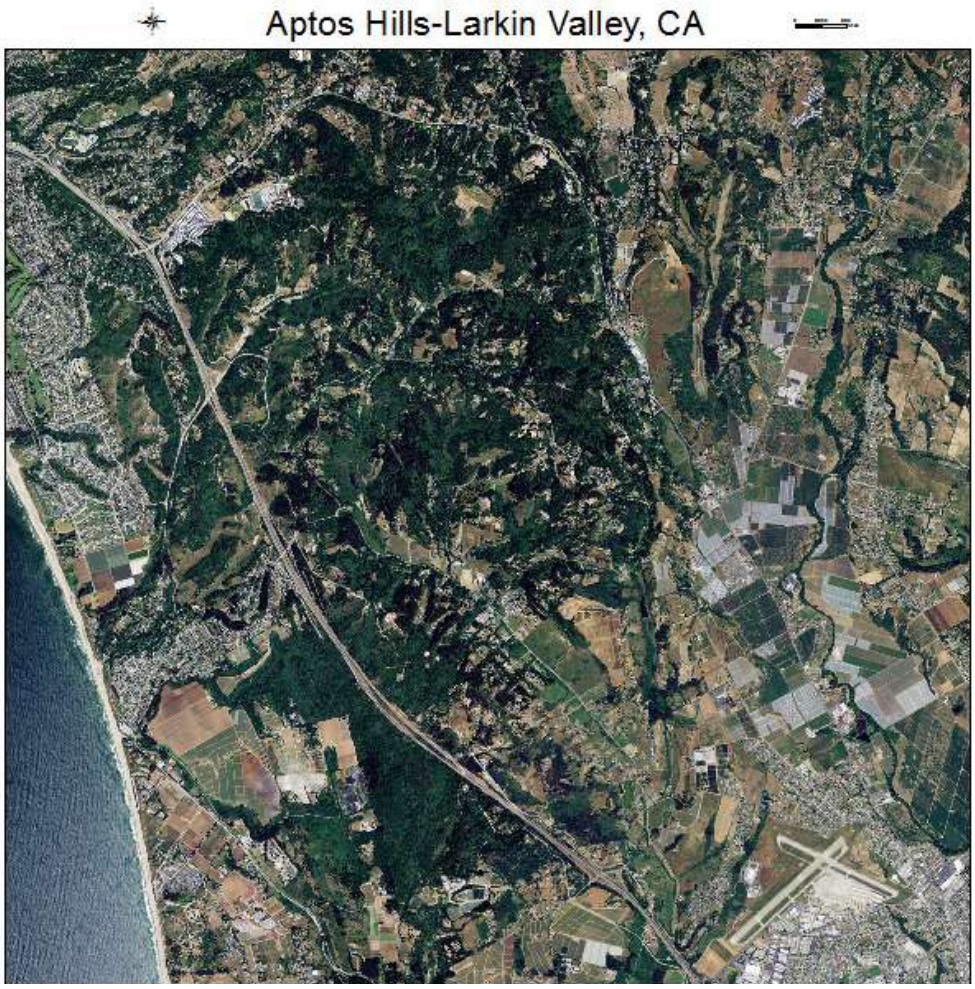
Attachment C

Cultural Resource Assessment Report

Cultural Resources Assessment Report:

Master Permit for the South County Oak Woodland Habitat Restoration Program Santa Cruz County, California

Prepared for the Resource Conservation District of Santa Cruz County



ALBION

JUNE 2025 FINAL

Cultural Resources Assessment Report: Master Permit for the South County Oak Woodland Habitat Restoration Program, Santa Cruz County, California

June 2025 FINAL
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Introduction

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Eco Systems West, Inc. on behalf of the Resource Conservation District of Santa Cruz County (RCD) contracted with Albion Environmental, Inc. (Albion) to provide a cultural resources assessment report that documents the general cultural resource sensitivity for a 11,585-acre area proposed for various habitat restoration projects.

As required by the California Environmental Quality Act (CEQA), an Initial Study will be prepared for the Master Permit and the purpose of this report is to support the Initial Study for this programmatic permit approach.

Albion Principal Archaeologist Sarah Nicchitta, MA, supervised the entire project. Ms. Nicchitta has over 18 years of experience working in California archaeology and cultural resource management. She received her master's degree in Anthropology from the University of California at Santa Barbara in 2011, and she meets the U.S. Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR Part 61) for prehistoric archaeologist.

Following this introduction chapter, we present Project information and the regulatory framework in Chapter 2. Next in Chapter 3, we outline our background research methods and then in Chapter 4 we provide a general environmental and cultural context of Santa Cruz County. Chapter 5 defines cultural resources and outlines potential resource types that may be found in Santa County and the Program Project Area. Lastly, in Chapter 6 we provide recommendations for cultural resource identification efforts.

Project Information

2

PROJECT LOCATION

The South County Oak Woodland Habitat Restoration Program is located in southern Santa Cruz County between the cities of Santa Cruz and Watsonville, California. The 11,585-acre project area is roughly bound by Freedom Blvd to the north, Highway 1 to the west, Manfre Road to the south, and Corralitos Road to the east. The Program Area largely consists of private residential parcels. This area contains not only residential development, but also San Andreas Oak Woodland, a County of Santa Cruz sensitive habitat type. The Santa Cruz County's Sensitive Habitat Protection Ordinance (Chapter 16.32) also protects Santa Cruz Long-Toed Salamander (*Ambystoma macrodactylum croceum*) in this region by establishing a salamander protection zone that limits activities associated with development and defensible space. Project Area limits and Areas of Direct Impacts pertinent to cultural resources will be defined on an individual project-by-project basis.

PROJECT DESCRIPTION

The Master Permit for the South County Oak Woodland Habitat Restoration Program is being issued to the Resource Conservation District of Santa Cruz County (RCD) for the implementation of "neighborhood scale" eucalyptus removal and native habitat restoration.

PROGRAM NEED AND BACKGROUND SUMMARY

Blue gum eucalyptus (*Eucalyptus globulus*) is a problematic exotic tree species in Santa Cruz County and throughout Central California. Endemic to Tasmania and southeastern Australia, this species was historically planted in the early 1900s as windbreaks and plantations with the expectation of producing fast-growing timber. Due to their rapid growth, ability to transpire water quickly, and the impact they have on soil and other plants through allelopathy, Blue gum eucalyptus is now well established in Santa Cruz County and continue to expand into areas that were formerly grasslands and oak woodlands.

Prior to the establishment of blue gum, the Program Project Area contained San Andreas Oak Woodland*, a coast live oak forest type considered a sensitive habitat by the County of Santa Cruz (County).

San Andreas oak woodland is a sensitive habitat type unique to southern Santa Cruz County and Larkin Valley associated with sandy soils and comprising a coast live oak overstory with an understory of maritime chaparral species including CNPS CRPR List 1B.2 Hooker's manzanita (*Arctostaphylos hookerii* ssp. *hookerii*) and federally Threatened Monterey spineflower (*Chorizanthe pungens* var. *pungens*).

The Program Project Area also supports important breeding ponds and upland over-summering (aestivation) habitat for the Santa Cruz long-toed salamander (SCLTS), a federal and state Fully Protected Species, which has suffered from habitat loss and fragmentation due in part to the reduction of oak woodland habitat.

Blue gum eucalyptus reduces habitat quality for a variety of native animals compared to oak woodland through the restriction of native plant growth and the exhaustion of groundwater. A number of sensitive bird and amphibian species are affected by the conversion of oak woodland into eucalyptus. For example, oak titmouse and Nutall's woodpecker, two bird species highly associated with oak trees, are not likely to be found in eucalyptus groves. Santa Cruz Long-Toed Salamander, which also inhabits primarily oak woodland habitat, are not usually found in eucalyptus groves. Biosearch found in 2014 that significantly fewer burrowing mammals live in dense eucalyptus than oak woodland habitat, and Santa Cruz Long-toed salamander live in mammal burrows in oak woodland habitat. Other CESA and ESA-listed species and endemic wildlife, such as California red-legged frog, are also harmed by eucalyptus presence, as the conversion of oak woodland to eucalyptus groves has undoubtably reduced suitable habitat.

Blue gum eucalyptus also cause a variety of undesirable impacts to residents who live within and near these stands, including increased risk of catastrophic wildfire, depleted groundwater supplies due to high rates of water consumption through transpiration and evaporation and on-going conversion of native plant communities and understory vegetation. Compared to native ecosystems, blue gum stands produce large amounts of highly flammable leaf litter and bark, and shed debris, which can create large amounts of fuel for wildfires. These trees also contribute to fire spread by shedding bark that readily catches fire and carries burning embers.

Residents in the Larkin Valley and Aptos Hills areas have found it difficult to manage eucalyptus stands and restore native habitat due to cost and a complicated regulatory permitting process. From the landowner's perspective, current agency review processes intended to protect natural values often act as disincentives to voluntary initiatives to restore native habitat. Fortunately, rural landowners are increasingly interested in implementing removing non-native eucalyptus to reduce wildfire risk, increase water quantity, and enhance habitat on their lands. As the primary stewards of the land, they are very much engaged in protecting its health.

In the early 2000s the RCD recognized that voluntary restoration could be incentivized by streamlining the permitting process and providing cost-share assistance to implement restoration activities that provide ecosystem services to the broader community. This document will provide a pathway for the RCD to assist landowners with eucalyptus removal and ecosystem restoration in a manner that ensures compliance with all regulatory requirements but simplifies the complex regulatory process.

The RCD is working to develop a cost-share program that could assist landowners with eucalyptus removal and restoration. The cost-share levels have not been set at this time, but landowner cost-share could assist with securing funding for large-scale eucalyptus removal. The RCD would necessarily oversee implementation to ensure compliance with CEQA documentation and permitting requirements. Landowners may be permitted to hire their own contractors.

Based on site assessments by qualified biologists, three broad categories of eucalyptus encroachment have been identified. The categories (i.e., low, moderate and high) are stratified by

restoration potential, taking into account factors such as the presence or absence of native and invasive plant species in the eucalyptus understory; the presence or absence of native trees interspersed with or growing underneath the eucalyptus canopy; and the presence of intact native habitat adjacent to the area of eucalyptus encroachment. Treatment methods and objectives will differ based on the restoration potential of each site. The differences between these methods and objectives is described in more detail in the following sections.

RESTORATION METHODS

To the extent feasible, the Program proposes the complete removal of blue gum eucalyptus from the Program Area and enhancement and/or restoration of the removal sites to functional native ecosystems. Removal would take place at a rate of no more than 90 acres per year, with the acreage distributed across sub-watersheds. The maximum amount of treatment allowed per year in a given sub-watershed is 45 acres. The County of Santa Cruz could approve variance to this acreage on a case-by-case basis. The Program would continue for a minimum of 10 years. The Program will be reevaluated at the five-year mark to assess restoration and removal goals. The Program timeline and phasing will depend on landowner participation, funding, and an evolving regulatory landscape. (*E. globus*), but restoration work may extend beyond the footprint of these stands, as management and restoration may occur on properties with eucalyptus and on adjacent properties that facilitate access.

ZONES WITH HIGH RESTORATION POTENTIAL

Zones with high restoration potential are characterized by a high proportion of native vegetation within eucalyptus stands and immediately adjacent, and minimal to no presence of non-eucalyptus invasive plants. In zones with high restoration potential, removal methods should minimize ground disturbance and damage to residual native trees and native understory.

Mastication and mechanical felling may be used. Where possible, equipment should stay on existing access roads and reach off of the road with an arm to masticate or fell eucalyptus. Otherwise, project managers may designate skid trails from which equipment can operate, preferably following a “herring-bone” access pattern where most activity is concentrated on one central skid trail and limited excursions are conducted off of the skid trail. If native vegetation must be altered to construct a skid trail, limbing should be favored over outright removal.

Hand felling may also be used to eradicate eucalyptus, with care taken to fell eucalyptus away from existing oaks and mature perennial understory vegetation. If there is no path to fell a eucalyptus without causing significant damage to native trees, girdling may be employed and eucalyptus snags may be left standing. Herbicide treatments will be used; painting and daubing immediately following low-stumping should be prioritized over foliar spray in the following growth year to minimize drift and potential damage to nearby native vegetation.

Biomass management in sites with high restoration potential should prioritize methods that limit ground disturbance. Material that may be reached from an existing access road, or a skid trail in the aforementioned “herring-bone” fashion, with an excavator or skid steer may be loaded onto trucks and hauled offsite for firewood, incineration in an air curtain burner, use in a biomass facility, or other reasons. Material may also be brought to a chipper and chipped into a truck to be hauled

offsite. Otherwise, material will need to be lopped and scattered on site or piled and burned in locations that will not substantially damage native vegetation.

Active replanting needs should be minimal in sites with high restoration potential. Natural recruitment from surrounding landscapes may suffice. If the site includes pockets that lack native vegetation and are more than 200 feet from intact native vegetation, these pockets may require active revegetation.

In zones with high restoration potential, it may be the case that some standing eucalyptus will remain, whether girdled or living, following treatment activities, as long as native ecosystem function is not impaired (ie, there is contiguous oak canopy, shrub cover, or grassland also on site featuring the expected variety of native plants and animals). If native ecosystem function seems intact, it may be decided that disturbing the habitat may not be worth removing a select few large or highly inaccessible eucalyptus trees. Any residual living eucalyptus trees should be monitored for seedling production; seedlings should be eradicated.

The reintroduction of prescribed fire in the form of broadcast burning may be used to achieve biomass management and restoration goals.

ZONES WITH MODERATE RESTORATION POTENTIAL

Zones with moderate restoration potential have some native understory present beneath the eucalyptus canopy, but few to no native trees. Some non-eucalyptus invasive species are present, and intact or partially intact habitat is present on one or more sides of the zone.

Mastication may be used on eucalyptus trees up to 12" DBH. Rubber or metal tracked masticators may be used throughout the project area. Islands of native understory vegetation may be flagged for retention; mastication will not occur in these areas. Mechanical felling may also be used on eucalyptus up to 35" DBH. Native understory vegetation should be avoided to the extent feasible. Extremely large trees that are not proximate to infrastructure, or trees that are especially difficult to access or fell due to topography, may be girdled and left standing. Other invasive plants may be hand pulled, cut and painted, or masticated and sprayed with a foliar solution in the following growth year.

Herbicide treatments will be used; painting and daubing immediately following low-stumping should be prioritized over foliar spray in the following growth year in areas that are immediately adjacent to intact understory vegetation, but either method may be used in areas with little to no native understory.

Biomass management in zones with moderate restoration potential should balance covering bare areas for erosion control and to prevent further colonization by invasive plants with leaving space for native plants to be actively re-seeded or expand into the zone from nearby areas of intact or partially intact native habitat. Logs 12" DBH and greater should be no closer than 10' from each other; logs may need to be hauled off site to achieve this.

Initial restoration should focus on native tree replanting, while relying on natural recruitment for native understory species. Further active restoration may be needed if native understory plants are not thriving in following years. Targeted invasive management will be needed until invasive

understory plants are no longer present. Because zones with moderate restoration potential do not have widespread non-eucalyptus invasive presence, it may be possible to take a very aggressive approach to invasive species eradication simultaneous to the eucalyptus removal project, with the aim of complete eradication of the currently sprouted population, and then focus on hand pulling/flaming/foliar spray of seedlings and resprouts in following years.

Prescribed fire in the form of broadcast burning may be reintroduced to select zones with moderate restoration potential if biologists and land managers determine that residual native trees and other perennials within those zones will be able to withstand moderate to low severity fire within the 10-year timeframe of the program.

ZONES WITH LOW RESTORATION POTENTIAL

Zones with low restoration potential are nearly fully colonized with eucalyptus and other invasive plants, with little to no native vegetation present. Intact native habitat does not occur adjacent to the zone; in fact, there may be significant weed pressure immediately outside the zone.

Mechanical treatment options like mastication and mechanical felling should be used to the greatest extent feasible with respect to standard slope and weather restrictions. Tracked equipment may be used throughout the project area. Extremely large trees that are not proximate to infrastructure, or trees that are especially difficult to access or fell due to topography, may be girdled and left standing, but restoration crews will have to frequently access the zone over the 5-10 years following the work, so special care should be taken to not create undue hazards. If a tree that is too large or complex to be felled safely occurs within an area that will be accessed frequently for restoration, it may be necessary to leave that tree alive for the safety of future restoration crews. Other invasive plants may be hand pulled, cut and painted, or masticated and sprayed with a foliar solution in the following growth year.

Biomass management in zone with low restoration potential will need to contend with a high level of eucalyptus and other invasive biomass. If a zone is fully managed by mastication, some areas of masticated material may need to be hauled away during the restoration phase to allow space for native vegetation to be planted. Some larger logs will likely need to be hauled offsite and managed by air curtain burner, taken to the dump, sold as firewood, or processed at a bioenergy facility in order to facilitate access for restoration crews. Stump grinding may need to be utilized if the stumps themselves cover more than 70% of total ground area in the site. Pile burning could be an appropriate partial solution for zones with low restoration potential, but biomass will likely be too voluminous to be managed by pile burning alone.

Restoration will need to be highly active and well-monitored on these zones. Follow up for invasive species management will likely be required throughout the ten years of the Program. Non-eucalyptus invasive species may be so abundant that it will be necessary to manage populations using the strategy of working from the edges inward; this means that existing invasive plant populations may not be treated immediately, but would be reduced in phases over time until the population is eliminated.

It will likely not be appropriate to perform broadcast burns in these zones after native replanting has taken place, as newly-replanted native trees will likely not be able to survive the reintroduction of fire within the ten year span of the Program.

COVERED ACTIVITIES

This section describes the activities that may take place to achieve eucalyptus eradication, biomass management, and restoration across the project area. Some activities may be restricted to certain locations based on site conditions. Factors that may restrict the use of any given activity may include: proximity to breeding ponds and watercourses; initial site condition; slope; season.

Eucalyptus Eradication Activities

Mastication

Mastication is achieved by way of a grinding head mounted on a piece of equipment that can be as small as skid steer or as large as an excavator. Masticators may be steel-tracked, rubber-tracked, or wheeled. The grinding head may be mounted horizontally or attached to an arm to achieve vertical mulching. Eucalyptus trees up to 12" measured at diameter at breast height (DBH) may be masticated, either while standing or after felling by other means. Masticators may operate on slopes up to 40%; grinding heads mounted on an arm may reach into steeper areas.

Stumps of all masticated eucalyptus greater than 3" DBH must be low-stumped and painted or daubed with herbicide. Stumps of masticated eucalyptus less than 3" DBH may be left until the following growing season, when foliar herbicide may be applied. Further information is included in the Herbicide section below.

Mechanical Felling

Mechanical felling may be achieved with a wheeled or rubber- or metal-tracked harvester such as a feller buncher. Harvesters fell trees with arm-mounted heads that include a gripping implement and a felling implement, such as a chainsaw. Harvesters may operate from an established skid road or paved road or they may operate off trail. Harvesters may be used to fell eucalyptus up to 35" DBH. Harvesters capable of felling trees that large may be too heavy to operate off trail and may need to be situated on a road. Mechanically felling trees may not be cost effective for trees that are too small (less than 12" DBH). A crane may be used to assist felling of eucalyptus that is greater than 35" DBH. Cranes are generally wheeled and can only be operated on paved or compacted dirt roads. As the project does not propose building new graded roads, cranes may only be operated on existing roadways. Ropes, winches, or other directional felling devices may also be used to assist in mechanical felling.

Stumps of all eucalyptus that are felled mechanically must be low-stumped and daubed or painted with herbicide immediately following low-stumping. Further information is included in the Herbicide section below.

Hand-Felling

Eucalyptus of any size may be hand-felled with a chainsaw, pole saw, or hand saw. Sawyers will utilize directional felling techniques, such as ropes, winching, or bottle jacks to guide the location the tree is felled. Trained professionals may need to climb larger eucalyptus in order to fell them.

Girdling

Eucalyptus that possesses exceptional habitat features such as cavities, extreme height, substantial diameter, and/or robust upper branches; or would cause substantial damage to intact native habitat if dropped; and which are not in proximity to infrastructure, may be girdled instead of felled. Girdling is achieved by damaging the cambium of a living tree using chainsaws, other mechanical means, or herbicide such that the tree can no longer transport water and nutrients from its roots to its branches, ultimately leading to the death of the tree. Girdling creates snags, which are important habitat features, while addressing the issue of eucalyptus litter production. Herbicide may need to be applied to girdled trees to ensure their death.

Herbicide

Herbicides are a valuable tool in their restoration toolbox, and critical for non-native species such as eucalyptus (and acacia) that stump sprout to regenerate when cut. Many Eucalyptus resprout for multiple years after removal. The length of time that re-treatment is required is site dependent and can be influenced by a number of factors including the timing of herbicide application after the trees are initially cut, timing of tree removal, drought, rainfall patterns, and the effectiveness of herbicide translocation within the cambium layer. Once the trees are initially cut, the stumps will receive a localized herbicide application, applied directly to the cambium layer. The herbicide is most effective in limiting re-sprouts when the herbicide is applied within minutes of tree removal by a licensed herbicide applicator. If herbicide cannot be applied within 5 minutes of cutting the tree, the tree stumps can be re-cut and then the freshly cut stumps can be hand painted with herbicide. No adjuvant is necessary and no foliar application is used for this activity. The preferred herbicide is glyphosate with no pre-mixed surfactant. Products potentially used would be Aquamaster© Rodeo© or Roundup Custom for Aquatic Habitats©. Triclopyr is also an effective herbicide. All cut and paint activities would occur between August 1 and October 15 or 48 hours prior to any forecasted rain. The use of glyphosate, triclopyr, and other herbicides that are effective in managing eucalyptus and other invasive plant species is subject to consultation with USFWS on a case-by-case basis due to the presence of California Red-Legged Frog.

Stump Removal

Stumps may be pulled out of the ground with an excavator or ground with a stump grinder. Stumps may be taken to the dump or another facility that is able to manage them.

Biomass Management Activities

Chipping

Biomass up to 16”DBH may be processed using a tracked or tow-behind chipper. In most locations, chips will need to be blown into a container and hauled off site. Deep chips can harm long-toed salamanders and other amphibian species. However, chips may be spread in limited circumstances on roads or skid trails to aid in erosion control.

Pile Burning

Biomass may be gathered into burn piles and burned during appropriate seasons. Piles will need to be well-constructed by hand or machine. Fine fuels should be stacked in the center first and larger fuels added to the outside to increase efficiency of combustion. Piles should be no larger than 10' x 10' x 10'. Green material placed in piles should cure for no shorter than 3 months. Piles that will be burned in the wet season or that will overwinter should be covered with a tarp or wax paper to maximize drying and minimize smoke impacts. No more than 90 piles will be burned in one day. All burns will conform to MBARD guidelines. Piles can be lit with a drip torch or with a lighter. Drip torch use should be minimized where feasible to decrease the amount of fuel that is introduced into the environment.

Air Curtain Burner

An air curtain burner is a large container that uses a gas-powered generator to combust woody material of any diameter. The container includes a layer of air blown across the top that increases the efficiency of combustion. Air curtain burners produce little to no smoke, but they do produce other emissions that may be restricted by MBARD. The use of an air curtain burner may be most appropriate for the disposal of large volumes of material that is too large to be chipped or masticated (<16" DBH) and cannot otherwise be left on site. Air curtain burners generally need to be operated from a landing that is located next to a log deck. Air curtain burners need to be loaded by an excavator. They are most efficient when operated constantly as it takes time for them to power on and off. This can mean increased costs as contractors need to pay workers in shifts throughout the day and night, and it also means increased potential for noise impacts and other disturbances.

Biochar Production

Some air curtain burners produce biochar as a byproduct. Emissions may be reduced by producing biochar instead of completely combusting material, as by definition a small amount of carbon remains. Air curtain burners that produce biochar at scale may require access to a constant source of water to cool the resulting biochar. This in turn requires management of runoff to maintain nearby water quality. Biochar may theoretically be sold, which would offset operational costs. If biochar cannot be sold, it can be hauled off or scattered on site.

Bioenergy Production

Some air curtain burners produce electricity as a byproduct. The energy is stored in a battery module that can be used to charge electric vehicles and other devices. Production of electricity from an air curtain burner could turn biomass processing into a carbon neutral activity. It is unclear if this technology can be connected to the grid. Air curtain burners that can produce bioenergy are not common and are relatively new technology, so tests of them at scale have not been robust.

Large Woody Debris Retention

Material larger than 16" DBH may be left on site in full ground contact. Material this large generally does not pose a fire hazard when fully in contact with the ground and may provide habitat for amphibians and other small animals. Downed logs may be reoriented from the position they originally fell in within ~300 feet of breeding ponds. Orientation near breeding ponds should be

considered on a case by case basis depending on the number of trees involved. Elsewhere the orientation of downed logs may be somewhat random, again depending on the specific site considering numbers of trees, topography, distance to nearest SCLTS breeding site, etc.

Creation of Firewood

Material of any size may be processed into firewood onsite or offhauled whole for the purpose of being processed into firewood. Firewood may be sold or donated.

Restoration Activities

Management of Eucalyptus Resprouts and Seedlings by Herbicide and Hand Pulling

To treat re-sprouts in subsequent years, there are a number of methods that can be used. Recutting the tree stump and re-painting the freshly cut stump herbicide is effective but time consuming for large scale eucalyptus removal. A quick and efficient method, known "chop and squirt", involves a ~4'inch cut on the top of the tree stump with an ax followed by an immediate squirt of herbicide into the cut in the spring. Another effective method is foliar application of herbicide, which involves spraying herbicide directly onto the leaves and stems of the target plants when the sprouts reach 1-2 ft tall. This method becomes less effective as the percentage of foliage increases. An adjuvant or surfactant is often needed to aid penetration through the plant cuticle. This method is best used during the growing season when plants are actively transpiring. Foliar herbicide sprays can be effective for controlling eucalyptus resprouts, especially when targeting young, actively growing foliage. While not as effective as direct stem treatments, foliar application can still provide good control, particularly when combined with proper application techniques and herbicide selection. With foliar application, there will be limited impacts to vegetation surround the tree stump.

Eucalyptus seedlings will be hand pulled to deplete the seed bank.

As noted above, the percentage of eucalyptus re-sprouts will vary based on site conditions. However, in general, it is expected that the re-sprouts will be highest in Year 2, tapering down to 1-5% by Year 5. The percentage of seedlings is anticipated decline from to less than 5% by Year 4.

Management of Other Invasive Plants by Herbicide and Hand Pulling

Herbicide can also be an effective tool to address large stands of other existing non-native species within or adjacent to the eucalyptus grove and treatment will prevent such non-natives from colonizing recently disturbed soils within treatment and staging areas, and temporary access roads. Other methods, such as hand pulling, mowing, weed whipping, solarization, etc., will be preferred method of control and herbicide will only used to manage other invasive species when other methods are determined to be ineffective or would create greater environmental impacts than chemical control. Herbicide use will be evaluated on a project-by-project basis, with consideration of (and preference given toward) IPM strategies (http://ipm.ucanr.edu/index.html) wherever possible. However, where it is necessary to use herbicides to control established stands of exotics, the minimum amount of herbicide that will effectively control these non-native species will be used, only the minimum area necessary for effective control will be treated, and all other best management practices, as described below, will be adhered to. To control jubata/pampas grass, small clumps will be removed by hand. Larger areas of infestation may be removed with equipment

or sprayed with Aquamaster©, Rodeo©, or Roundup Custom for Aquatic Habitats©. When herbicide application is used, a non-ionic surfactant would be added that does not contain nonylphenol and mixed according to the label directions. A non-toxic blue dye would be added to ensure full coverage of each plant. When feasible, floral stalks will be removed and bagged prior to herbicide application. Applications of herbicide spray are most effective when applied in the mid to late spring. However, the timing of application will be dependent on species presence and will be developed in partnership with wildlife agencies including CDFW and the Service. Small infestations of bermuda and kikuyu grass can be hand pulled, but spot spraying larger areas with Aquamaster©, Rodeo©, or Roundup Custom for Aquatic Habitats© is an effective tool to manage these persistent grasses. When herbicide application is used, a non-ionic surfactant would be added that does not contain nonylphenol and mixed according to the label directions. A non-toxic blue dye would be added to ensure full coverage. Applications of herbicide spray are most effective when applied in the mid to late spring. However, the timing of application will be dependent on species presence and will be developed in partnership with wildlife agencies including CDFW and the Service. Small infestations of bull thistle, poison hemlock and French broom can be hand pulled, however, herbicide application (spot spray) of French broom seedlings is an effective management technique for larger populations. When herbicide application is used, a non-ionic surfactant would be added that does not contain nonylphenol and mixed according to the label directions. A non-toxic blue dye would be added to ensure full coverage. Applications of herbicide spray are most effective in late winter/early spring during a dry period of at least 4 days. However, the timing of application will be dependent on species presence and will be developed in partnership with wildlife agencies including CDFW and the Service. Glyphosate is an effective herbicide that does not have residual soil activity which would lead to reductions in native plant species recruitment, has a proven effectiveness in cut and paint treatments of Eucalyptus and Acacia, and has a low toxicity when used properly with non-ionic surfactant. Other herbicides, Aminopyralid and Triclopyr, are also effective except for grasses.

Broadcast Burning

According to the US Forest Service Fire Effects Information System (FEIS) entry on Quercus agrifolia, fire has mixed effects on coast live oak woodlands. Where oak woodland is adjacent to chapparal or coastal scrub habitat, fire exclusion can produce a dense oak canopy that may be similar to ideal conditions for San Andreas oak woodland and may prevent conversion to coastal scrub. However, adherence to a historical fire return interval of more frequent fire (from 1 – 30 years, according to the FEIS information) can help prevent conifer encroachment where coast live oak woodlands experience conifer pressure. Broadcast burning at could be a valuable restoration tool in certain locations. A California Registered Burn Boss would develop a burn plan based on specific project objectives on a case-by-case basis. Use of prescribed fire would conform to all applicable rules and regulations. Smoke impacts would depend on the season of the burn and would be analyzed in the burn plan.

Low Impact Program Projects

Some Habitat Restoration projects that are detailed above will be minimally impactful on the environment by the nature of the project activities and therefore will pose a low risk to cultural resources. These low-impact projects are defined by meeting the following two criteria:

1. Ground-disturbing project elements are limited to no more than 4 inches (~10 cm) below current grade outside an existing agricultural field, or ground-disturbing project elements

are limited to no more than 12 inches (~30 cm) below current grade within an existing agricultural field or an area of documented disturbance within the upper foot of the soil prism; and

2. No heavy equipment is used (i.e., backhoe, skid steer, etc.); hand tools and foot traffic only are used to implement all project elements.

Example Low Impact program projects include, but are not limited to, the following:

- A project classified as *Eucalyptus Eradication Activities,* which consists of hand-felling trees, girdling, and herbicide application will be accomplished with minimal to no ground disturbance. Mastication and mechanical felling is not be considered low impact due to the use of heavy machinery.
- A project classified as *Biomass Management Activities,* which may consist of chipping, pile burning, air curtain burner, biochar production, bioenergy production, large woody debris retention, and creation of firewood and will be accomplished with minimal to no ground disturbance.
- A project classified as *Restoration Activities,* which may consist of management of eucalyptus resprouts and seedlings by herbicide and invasive plant removal by herbicide and hand pulling will be accomplished with minimal to no ground disturbance.

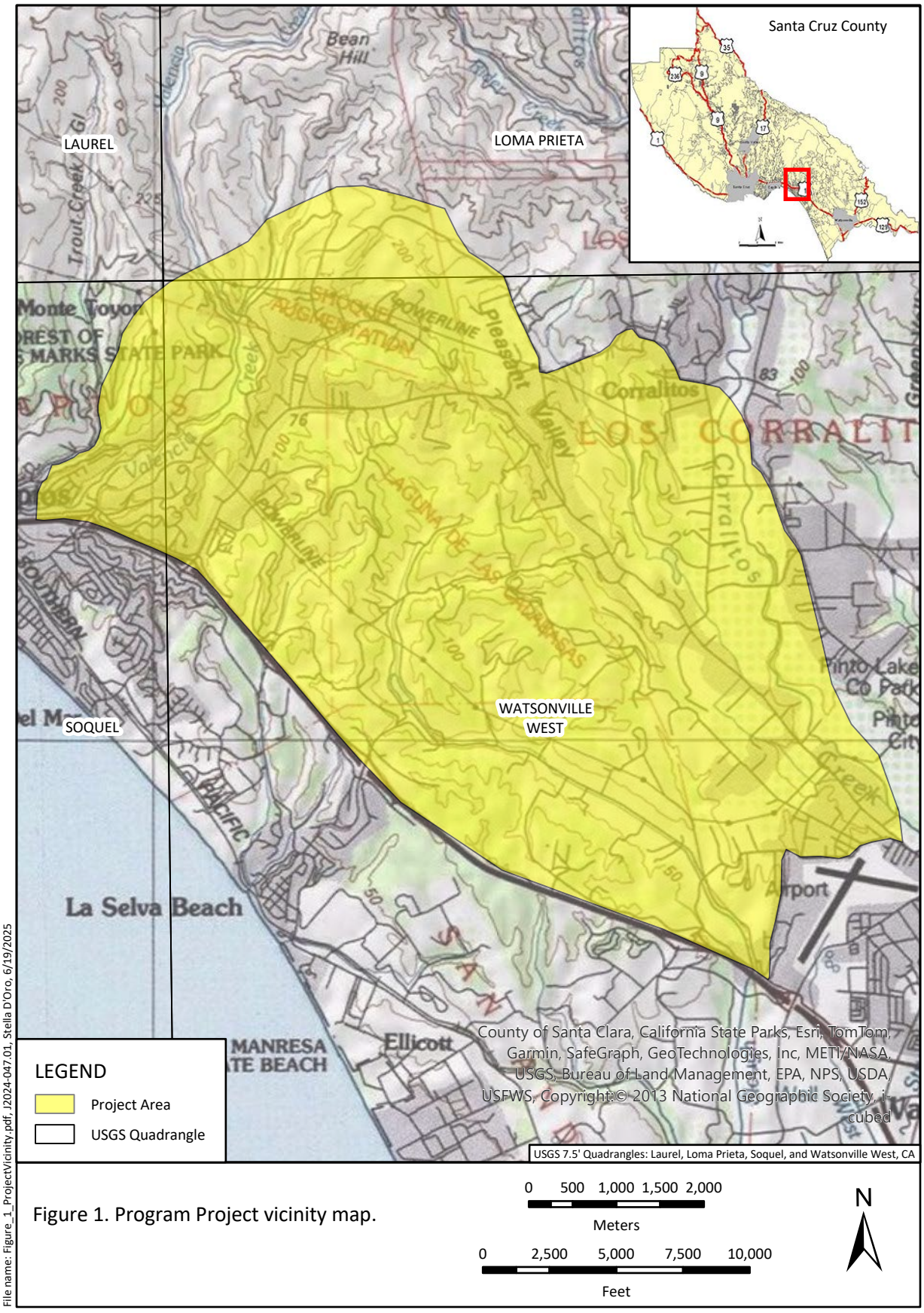


Figure 1. Program Project vicinity map.



File name: Figure_2_ProjectArea.pdf, J2024-047.01, Stella D'Oro, 6/19/2025

Figure 2. Program Project Area.

REGULATORY SETTING

COUNTY AND STATE REGULATIONS

All proposed activities associated with the South County Oak Woodland Habitat Restoration Project are subject to environmental review, including an assessment of cultural resources, and must comply with CEQA. As such, it is necessary for the Project to determine if it will have an effect on historical resources under CEQA, which includes archaeological and Tribal cultural resources. This master Permit constitutes County of Santa Cruz approval for conducting specific project types of conservation practices. Eligible projects implementing these practices are subject to size constraints and other limiting criteria, and shall be carried out under the auspices and oversight of the RCD. This Master Permit incorporates all of the separate County permits that would otherwise be needed for the conduct of these qualifying environmental enhancement projects, including Coastal Zone approvals, grading permits, tree removal permits, encroachment permits for projects impacting County right-of-way, and/or sensitive habitat reviews, as applicable.. Work performed according to the provisions of this Master Permit are deemed to be consistent with the County General Plan, Area Plans, Community Plans, the Local Coastal Program (LCP), and the requirements of County regulations.

FEDERAL REGULATIONS

The majority of South County Oak Woodland Habitat Restoration Projects will not have a federal nexus; however, it is possible a few Projects will also be subject to the National Historic Preservation Act (NHPA) including completing the Section 106 review process to consider the potential effects on historic properties. Federal funding or Federal permits will likely be the trigger.

CEQA EVALUATION METHODOLOGY

DETERMINING CRHR ELIGIBILITY

In accordance with CEQA, cultural resources within the Project Area that have the potential to be impacted by project activities and that cannot be avoided or that are encountered during South County Oak Woodland Habitat Restoration Project implementation (i.e., not previously known) shall be evaluated to determine if the resource is a historical resource (or is a contributing element of an existing historical resource, meeting the established criteria for inclusion in the California Register of Historical Resources (CRHR) (CEQA Guidelines, Section 15064.5 [a]). Sites determined not eligible are further assessed to determine if they meet the definition of a “Unique Archaeological Resource” under Section 21083.2 of the Public Resources Code. Cultural resource evaluations also assess potential impacts that a project may impose on identified historical resources or unique archaeological resources. Evaluation of built environment resource, archaeological resources, or Tribal cultural resources are accomplished using criteria set forth in Section 15064.5 (a) (3) of CEQA Guidelines. This statute states that a resource is eligible for listing in the CRHR if the resource meets one of the following criteria:

1) is associated with events that have made a significant contribution to broad patterns of California’s history and cultural heritage;

2) is associated with the lives of persons significant in our past;

3) embodies the distinctive characteristic of a type, period, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4) has, or may be likely to yield, important information in prehistory or history.

Eligibility determinations consist of an examination of the cultural resource in relation to all of the four CRHR eligibility criteria. In addition, if a resource is found eligible under one of the four criteria, it is necessary to conduct an assessment of seven aspects of integrity. These aspects are location, setting, design, materials, workmanship, feeling and association.

Typically, eligible archaeological sites/features are those that possess depositional integrity AND meet one or more of the following criteria:

- has discrete temporal components;
- can be linked to a particular activity, household, socioeconomic group, or time period;
- is unique or rare;
- includes a diverse assemblage;
- has a functionally specific assemblage;
- contains distinct identifiable deposition episodes, including discrete layers and features, that can help reconstruct the sequence of events at a site; or
- contains sufficient data (density) to address previously stated research objectives.

An archaeological site/feature may be judged as ineligible if it:

- lacks depositional integrity;
- lacks discrete temporal components; or
- has insufficient data (density) to address research issues.

Test Excavations

If potentially significant cultural resources are identified during planning within the Project Area or during South County Oak Woodland Habitat Restoration Project implementation, and they cannot be avoided by project redesigns, then the resource will require evaluation. For archaeological resources, test excavations will be employed to: (1) locate discrete features; (2) assess depositional integrity and potential for addressing regional research questions; and (3) determine the significance of resources against criteria outlined in CEQA. The level of effort required for evaluations of any potentially significant deposits will depend on the size of the deposit and the Project impacts. Archaeological excavations will be confined to areas subject to Project impacts (i.e., within the maximum grading depth). Exploratory augering may be conducted along unexposed segments of the Project elements (i.e., within or immediately adjacent to construction activities) to ascertain extent of deposit.

An assessment of site depositional integrity typically involves an evaluation of both surface and subsurface contexts. The former includes assessment of degree of any significant surface

disturbance including, but not limited to, vehicle tracks, construction or grading activities, natural weathering and erosion, vandalism, and historic/modern impacts. The latter, by contrast, involves assessing the condition of the buried deposit and its surrounding matrix, and noting any impacts, both natural and anthropogenic, that might have compromised the integrity and subsurface structure.

The evaluation of the subsurface deposition typically involves some amount of archaeological exploration including manual excavation and screening. If significance cannot be determined based on the information gathered at the time of discovery, then archaeological fieldwork will be needed and can be accomplished using distinct excavation methods: Augers (AUs), Shovel Test Pits (STPs), and Surface Transect Units (STUs). The differences between these unit types are their size, the interval at which excavation levels are recorded, and the purpose of the excavation. All archaeological test units will be excavated to the maximum depth of Project disturbance. As illustrated in Table 1, AUs and STPs are used to delineate site boundaries and determine the presence or absence of a site, and the STU is the standard unit type for CEQA evaluation studies. STUs are the professional standard for evaluation as they can be efficiently excavated while yielding relatively large artifact and ecofact samples with good control on depths, context, and integrity.

Table 1. Comparison of Archaeological Evaluation Units.

	Auger Unit (AU)	**Shovel Test Pit (STP)**	**Surface Transect Unit (STU)**
Unit Size	7.5 cm diameter	0.5 m x 0.25 m	1 m x 0.5 m
Excavation Level Intervals (cm)	20	20	20
Excavation Depth	Maximum depth of project impacts	Maximum depth of project impacts	Maximum depth of project impacts
Purpose	Identification	Identification	Evaluation

The amount of excavation/screening required depends on the size of the impact; for example, limited impacts such as a posthole will require less archaeological investigation (in terms of cubic meters excavated) than a larger impact such as mass grading. Taken together, surface and subsurface conditions signal how well the cultural resources from a given site have the potential of providing meaningful data to address various research issues.

DETERMINING ADVERSE CHANGES

In accordance with CEQA, an assessment must be completed to determine whether a project will cause a substantial adverse effect in the significance of a historical resource. An adverse effect is found when project implementation may alter, directly or indirectly, any of the characteristics of a historical resource that qualify the resource for inclusion in the CRHR in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Examples of adverse effects for cultural resources include but are not limited to the physical destruction of or damage to all or part of the property. A determination of a substantial adverse change is based on a comparison of project plans (e.g., breadth and depth of grading or trenching) and the physical characteristics of the cultural resource. The determination also considers the integrity of the resource and the aspects of the resource that contribute to its significance. If, for example, an archaeological resource is found to lack integrity, and therefore has no potential to

contribute meaningful data to address research questions, there will be a finding of no adverse change/no significant effect. Similarly, the Project may impact a portion of a significant resource, but only the portion that does not have the potential to contribute meaningful data, thus resulting in a determination of no substantial adverse change/no significant effect. A determination of substantial adverse change/significant effect leads to consideration of mitigation measures, such as archaeological data recovery, to reduce the impacts to less than significant, such as archaeological data recovery.

DETERMINING NEXT STEPS

Cultural resources determined to be not significant will be, at a minimum, documented using standard techniques such as drawings, written descriptions, photography, and maps. If the resource is considered not significant (not a historical resource under CEQA), then the effects of the project on that resource shall not be considered significant and the resource likely need not be considered further in the CEQA process.

If the resource is considered significant (a historical resource under the CEQA criteria), and it is determined that the project will cause a substantial adverse change in the significance of a resource, it will be necessary to implement appropriate mitigation measures to reduce impacts to eligible resources to less than significant (CEQA Guidelines, Section 15064.5 [c]). Should significant cultural resources be encountered during South County Oak Woodland Habitat Restoration Project implementation, then a qualified archaeologist should develop a plan in consultation with the Lead Agencies, local Native American representatives, and any other stakeholders to implement a Treatment and Mitigation Plan to address project impacts.

Sources Consulted

3

BACKGROUND RESEARCH

Typically, to complete a cultural resource assessment, the study would include: (1) archival and background research; (2) a formal search of records at the California Historical Resources Information System's Northwest Information Center (NWIC); however, that level of detailed research, specifically the NWIC record search, for an area as large as the South County Oak Woodland Habitat Restoration Project Area, is cost prohibitive and also outside the scope needed to support the programmatic permit because all South County Oak Woodland Habitat Restoration Projects will have Conditions of Approval specific to cultural resources that will require a baseline cultural resource study be completed for each proposed Project.

For this cultural resource assessment, Albion conducted archival and background research of our in-house cultural resource database, as well as publicly accessible data including imagery and maps for the Special Research Collections at the UCSB Library and General Land Office maps and archives.

DESKTOP ARCHAEOLOGICAL SENSITIVITY MODELING

The potential for archaeological sites to exist on the landscape can be modeled using a set of factors that either encouraged or discouraged past human use or occupation of a given area (e.g., slope, aspect, setting, distance to water). Using such a model, areas of the landscape can be categorized as more or less sensitive to contain archaeological sites based on demonstrated relationships between environmental variables and known precolonial site locations. For example, there is more potential for precolonial occupation sites to exist on landforms that are relatively flat and located near consistent water sources.

For this Project, a general archaeological sensitivity model for the Program Project Area was developed using a geographic information system (GIS) and publicly available GIS data. The parameters used for this model were distance to freshwater sources and slope – both of which have been demonstrated of all environmental factors to have the strongest correlation with known site locations (Byrd et al. 2017; Meyer et al. 2010; Rosenthal and Meyer 2004). A water source layer that encompassed perennial and intermittent watercourses and water bodies was created using data from the National Hydrography Database Plus from the U.S. Geological Survey (USGS) (U.S. Geological Survey 2021a). A slope layer was created using a Digital Elevation Model obtained from four USGS $^1/_3$ arc second (10 m) tiles, from which the percent of slope of the land surface for the Program Project Area was calculated (U.S. Geological Survey 2021b).

With this data, a layer was created using the model's parameters to categorize the landscape according to these three levels of sensitivity:

- Low – farther than 200 m from a water source.
- Moderate – within 200 m of a water source AND on a slope greater than 9 degrees.
- High – within 200 m of a water source AND on a slope of less than 9 degrees.

The spatial analysis was performed using Esri ArcGIS Pro 2.9 software and the Spatial Analyst extension. Please note, this model generated a generalized sensitivity assessment for the entire Program area and it is not as accurate as a model designed for smaller project areas that can factor in many additional environmental variables that also influence past human use or occupation of a given area.

Environmental and Cultural Context 4

ENVIRONMENTAL CONTEXT

Santa Cruz County is situated within the South Coast Range physiographic province. This range consists of a series of longitudinal mountains and valleys, which parallel the coastline and separate the Pacific Ocean from the Central Valley. It runs for nearly 250 miles, from the San Francisco Bay Area to the Santa Ynez Mountains of the Transverse Ranges in the south. The range is highly folded and fractured and is generally attributed to events associated with subduction of the Pacific Plate beneath the western border of North America. Steep slopes with exaggerated relief are common where the mountains rise abruptly from the sea. Overall, however, this range is not particularly high. The range averages 760 meters in height, with occasional peaks reaching over 1,830 meters, most notably in the Santa Lucia Range (Burcham 1957).

Geologically, the Southern Coast Range is a diverse region consisting predominantly of marine-derived Miocene and Pliocene-age sedimentary rocks (Alt and Hyndman 2000; Christensen 1966; Compton 1966; Dupre 1991; Hart 1976; Lewis et al. 1991; Norris and Webb 1976; Page 1966). However, the eastern portion of the South Coast Ranges is much older and is characterized largely by the Cretaceous-age Franciscan formation, which consists of sandstone, chert, serpentine, basalt, greenstone, shale, and blue schist. To the west is the so-called Salinan block, a large zone of granitics and metamorphic rocks. The Salinan block dates from the Paleozoic and consists of metamorphosed marine sedimentary rocks including schist, quartzite, granulite gneiss, granofels, and marble. West of the Salinan block is the Nacimiento fault, which trends northwest to southeast and forms the eastern boundary of the Salinas Valley. Much of the exposed rocks in the Southern Coast Ranges belong to the so-called Paso Robles formation, which dates to the Plio-Pleistocene era and is made up chiefly of conglomerate and sandstone but also includes some mudstone (Burch and Durham 1970). Quaternary stream deposits, consisting of unconsolidated gravel, clay, and silt, overlie the Paso Robles formation.

The Santa Lucia Range is one of the Southern Coast Ranges and extends approximately 140 miles from Monterey Bay in the north to the Cuyama Valley in the south. The range's complex composition reflects the tectonic activity around the San Andreas Fault system, which has caused compression and uplift as well as displacement of different rock types and formations. In its southern half (south of Lopez Point on the Big Sur coast), the Santa Lucia Range is mostly composed of the Franciscan complex, which formed from multiple bodies, or terranes, of oceanic crust accreting onto the North American plate. In its northern half around the Monterey Bay area, the range consists of the aforementioned Salinan block. Mixed in with these older formations are Cenozoic sedimentary deposits, mostly fine-grained shale and siliceous diatomite, that accumulated in marine basins prior to the uplift of the range.

Relatively recent tectonic activity created the Coast Ranges (including the Santa Lucia Range). The transform boundary between the North American and Pacific plates—the San Andreas fault—shifted to more oblique movement about 3.5–5 million years ago, causing compression that uplifted and deformed the rock formations in the region, bringing the Franciscan complex, the Salinan block, and sedimentary deposits together into a complex mixture (Harden 2004:283). The plate movement along the San Andreas fault caused the Salinan block to become displaced far north of its origin; geologists believe that the Salinan block is in fact made of pieces of the Sierra Nevada batholith (Harden 2004:300). Other associated faults in the region, such as the San Gregorio-Hosgri and Church Creek faults, contribute to the varied and rugged topography.

On the coast, the Santa Lucia Range consists of a series of parallel ridges trending northwest-southeast, defined by the activity of the various fault systems, and streams cut steep canyons that drain into the Pacific Ocean. Ongoing tectonic uplift has created a rocky coastline with many cliffs and wave-cut marine terraces (Harden 2004:413-414). The topography along the coast is everywhere extreme: the mountains rise abruptly from the ocean, with some reaching over a mile high, Junipero Serra Peak being the tallest at 5,857 feet (1,785 m), followed by Cone Peak at 5,155 feet (1,571 m). The latter peak rises to its height within just 3 miles of the coastline, and slopes among the canyons average well over 50%. All watercourses in the range empty into the Pacific Ocean (Henson and Usner 1996:12), and the range's eastern terminus is where it drops down into the Salinas Valley in Monterey County.

The South County Oak Woodland Habitat Restoration Project Area is dynamic and is located within the Aptos Hills-Larkin Valley, which is an unincorporated community in Santa Cruz County. The area includes forested hills/mountainous area as well as flat plains and valleys with several streams running through the area.

The regional climate is Mediterranean, typified by long, hot summers and mild, wet winters. Summer temperatures average around 30º C to 34º C (87º F–94º F), though during the height of summer, temperatures in excess of 38º C (100º F) are common (though the coast and coastal adjacent areas typically have a more mild temperature variance than the interior). Winter temperatures, by contrast, hover around 14º C (57º F) during the day but can fall to 1.1º C (30º F) at night. The Santa Lucia Range acts as a minor rain shadow for the Salinas Valley and, consequently, rainfall totals are less east of the range than along the coast. Average precipitation is approximately 384 mm (15 inches) per year and is derived from Pacific storms that sweep inland during the winter months, especially from November through March. Occasional torrential rains are common, usually occurring during so-called El Niño Southern Oscillation (ENSO) events. Drought years are common as well. The severe drought of 1862–64, for example, wreaked economic havoc on many of the Mexican ranchos in the area by killing off herds of cattle. While snowfall is extremely rare, frost during the winter does occur on occasion.

PRECOLONIAL CONTEXT

In recent years, many contemporary archaeologists working along the central coast have adopted the chronological sequence proposed by Jones et al. (1996b). The extensive work of Terry Jones in Monterey and San Luis Obispo Counties (e.g., Jones 1993; Jones and Ferneau 2002; Jones et al. 2007; Jones et al. 1996a)has led to a general acceptance of a chronological sequence specifically for the central coast region centered on San Luis Obispo and Monterey Counties, and posited three districts characterizing the area: Monterey Bay, Big Sur, and San Luis Obispo (Jones 1993). This

schema recognizes six major precolonial periods of cultural adaptation extending through and beyond the last 10,000 years of human occupancy, and has found general acceptance in CRM and graduate degree studies alike (e.g., Hildebrandt et al. 2007; Joslin 2006). The temporal periods emphasize changes in human adaptation over time and focus largely on the shifting significance of coastal vs. terrestrial habitats and the associated artifact assemblages. Jones et al. (2007) present a more recent application of this framework along with a regional overview (Table 2).

Table 2. Precolonial Sequence for California's Central Coast.

Temporal Period	Date Range
Paleo-Indian	Pre–9950 BP
Millingstone	9950–5450 BP
Early	5450–2550 BP
Middle	2550–950 BP
Middle/Late Transition	950–700 BP
Late	700–181 BP

Following Jones et al. (2007); Codding et al. (2010)

The initial period in this sequence, termed the Paleoindian, originates in the late Pleistocene and continues until approximately 10,000 BP. This is followed by the Millingstone Period (10,000–5500 BP) and is recognized by increasingly abundant milling equipment (manos and metates) in the archaeological record when populations apparently followed a generalized subsistence pattern that placed an importance on coastal resources, namely shellfish. The ensuing Early Period (5500–2600 BP) was a time of new subsistence emphases that include a greater reliance on hunting and the initial exploitation of acorns. The Middle Period (2600–1000 BP) was marked by the intensification of subsistence practices, especially a greater reliance on marine and littoral foods where fish played an important role in the diet. During the Middle/Late Transition (1000–750 BP), populations in central California experienced deteriorating environmental conditions, and apparently underwent major adaptive shifts in both subsistence and settlement. Finally, the Late Period (750 BP–Historic) marks the initial appearance of numerous projectile points, including small side-notched (Desert side-notched), triangular (Cottonwood), and leaf-shaped points, representing the introduction of the bow and arrow. There is an apparent shift in settlements to interior settings while the immediate coastal environments appear to have been used for more short-term gathering and processing activities.

Indications of precolonial inhabitation of the central California coast dating to the terminal Pleistocene/early Holocene is limited. The dearth of sites dating to this antiquity may, in part, be related to progressively rising sea levels that accompanied the end of the Pleistocene and the early Holocene (Masters and Aiello 2007). Between ca. 10,000 and 8000 BP, the Elkhorn Valley was inundated by saltwater and transformed into a high energy tidal channel (Jones et al. 1996a:6). At 8,000 years ago, sea level was about 15 meters below its present level at Elkhorn Slough (Masters and Aiello 2007:49). Bickle (1978:8) estimates that sea level rise has submerged 20,000 km^2 of land along the California coast. Sea level transgression slowed after about 7,000 years ago, prompting fluvial sedimentation and tectonic uplift. Consequently, coastal sites earlier than 7000 BP may have been inundated by rising waters.

In general, researchers normally divide this early time span into two divisions: the Paleoindian (pre-10,000 BP) and the Millingstone (10,000–5500 BP). A coastal focused alternative to the large game focused Paleoindian model, the Paleo-Coastal Tradition, was first proposed by Davis et al. (1969) and later expanded upon by Moratto (1984). Although few sites or site components dating from this time period have been investigated and its presence is largely conjectural, some researchers have posited that Paleo-Coastal peoples established residences along estuaries and bay shores. Associated toolkits are suggested to be scrapers, scraper-planes, bifaces, and lack milling equipment. Jones et al. (1996a:39) note that "the extent to which these assemblages are constituted to some unknown degree by materials mixed from more recent contexts is indicated by the occurrence of obsidian among strata assigned to these phases since none of the obsidian hydration results equate with a time depth greater than 7000 BC." As a result, the Paleo-Coastal tradition is not readily described in the Monterey Bay area.

Coastal sites attributed to the Millingstone Period (10,000–5500 BP) are best characterized by high density shell middens—composed primarily of mussel (*Mytilus* spp.)—located adjacent to extant estuaries or near areas where paleo-estuaries once existed as a result of early Holocene sea level rise. As the name for this period implies, site assemblages generally contain abundant milling stones and hand stones (Erlandson 1991, 1994; Fitzgerald and Jones 1999), although this is not always the case (Jones et al. 2004; Jones et al. 1996b).

In addition to milling equipment, Millingstone Period sites are typified by eccentric crescents, long-stemmed projectile points, and cobble/core tools. In general, there is a low incidence of projectile points and other flaked stone. Shell beads from this time period are characterized as thick rectangular (L-series) *Olivella/Callianax* beads (Glassow 1996). Erlandson (1991, 1994) has suggested that Millingstone Period groups were semi-sedentary, their diets emphasizing shellfish and small seeds. The hunting of large terrestrial game and marine mammals as well as the exploitation of fishes was apparently of minor importance. Other researchers, however, have argued that both coastal and interior habitats were exploited by early Holocene populations targeting small fauna, and a variety of grass seeds, nuts, and other inland plant taxa as well as shellfish (Jones and Richman 1995; McGuire and Hildebrandt 1994; Mikkelsen et al. 1998; Milliken et al. 1999). Jones (2003:218) argues for a more mobile settlement pattern during this time that included the exploitation of marine mammals.

The next few thousand years (between 5500 and 2600 BP) are referred to as the Early Period throughout southern and central California. Most notable about precolonial adaptations at this time are innovations in subsistence technology, especially the initial appearance of mortars and pestles (perhaps signaling acorn use) and an increase in the frequency of large side-notched and contracting-stem projectile points along with flaked stone debris. Shell beads common during this time period include thick rectangular (L-series), end-ground (B-series), and split (C-series) *Olivella/Callianax* beads. The appearance of eastern California obsidian (mainly Casa Diablo) in Early Period assemblages also implies that long-distance trade and exchange relations developed during this period (Jones 1995). Jones (1995) and Jones and Waugh (1997) posit a decrease in residential mobility, which they attribute to the advent of mortar and pestle use and a clearer delineation of gender roles that accompanied a trend toward greater population circumscription. Jones and Waugh (1997) also contend that Early Period sites, in contrast to Millingstone Period sites, are found in more diverse settings, including interior, estuary, and outer coast contexts.

In terms of subsistence, mammals and fish increased in importance relative to shellfish. These resources, coupled with the addition of acorns, signified a broadening of the diet breadth. Glassow (1996:134) has pointed out that this expansion of the diet breadth was accompanied by a significant increase in labor devoted to food processing. Before acorns can be made palatable, the toxic tannic acid must be leached out of the meal, a process not required by hard seeds. Glassow (1996:134) stated, "it is likely, therefore, that people would consume acorns no more than necessary, as insurance against normal fluctuations in food resource productivity from one year to the next." While the introduction of acorns has implications for labor organization and settlement, the peripheral role played by the resource base at this time in prehistory may relate to more of a process of "extensification" (*sensu* Beaton 1991) where new foods are introduced to the diet, rather than "intensification" where greater amounts of labor are focused on the processing of a particular resource, as is more characteristic of later precolonial times. Acorn macrofossils are recovered in lesser amounts in these early assemblages than in later ones.

The change that occurred from the Millingstone to the Early Period has traditionally been interpreted as an adaptive shift accompanying the arrival of Rogers's (1929) "Hunting Culture." In his original conception, Rogers described Hunting Culture people as a separate ethnic population more reliant upon use of the acorn and on both terrestrial and marine mammals. These Hunting peoples, he hypothesized, entered the central coast and gradually displaced the earlier populations of Millingstone-adapted peoples. This premise, however, has more recently been discounted largely in favor of the idea that observed differences in artifact assemblages are probably more indicative of seasonal or functional variability in site occupations (Erlandson 1997; Glassow 1997). Jones, moreover, views the transition from Millingstone to Hunting technologies largely as the result of population circumscription and economic intensification, an in situ development that reflected the shift from an earlier, mobile, more selective adaptive strategy to one emphasizing limited mobility and decreased subsistence efficiency.

Cultural changes marking the transition from the Early to Middle Period (2600–1000 BP) were much less pronounced than during the Millingstone/Early Period transition. Instead, many of the adaptive traits initiated during the Early Period continued and grew in relative importance. The use of mortars and pestles increased, as did reliance on small schooling fishes (e.g., anchovies, herring, smelt). The use of shellfish, however, appears to have steadily declined. Middle Period populations also began to focus more on the exploitation of smaller, more elusive game; sea otters and rabbits, for instance, were more important than they had been previously. Glassow (1996) and Lambert (1993) place a slightly stronger emphasis on the importance of increasingly maritime adaptations during this time, arguing that fishing and sea mammal hunting were important subsistence pursuits. Artifact assemblages are typified by large-stemmed points, mortars, pestles, handstones, and milling slabs. Shell beads include *Olivella/Calianax* saucer (G-series) and saddle (F-series) types. Perhaps the most significant change in the artifact assemblage was the introduction of the circular shell fishhook. This artifact class is recovered more commonly on rocky coasts than in protected slough habitats where schooling fishes were likely captured through other means such as baskets, nets, or other trapping methods (Jones et al. 1996b:193; Strudwick 1986). Circular shell fishhooks no doubt facilitated an increase in the exploitation of fishes, but, at the same time, may have resulted in a decrease in dietary efficiency (Glassow 1990:89; Jones 2003:226), a pattern that continues throughout the Holocene. Trans-Sierran trade, especially in obsidian, appears to increase during the Middle Period. Casa Diablo obsidian, a source whose origin is east of the Sierra Nevada Mountains was the chief import in the vicinity Monterey Bay, whereas Coso obsidian is more common to the

south (Jones et al. 1996:197, 199). Jones (2003:226) also notes a high frequency of sea otter (*Enhydra lutris*) bones at Middle Period sites, which he interprets as evidence of exchange in otter pelts.

It was also during the Middle Period that a few researchers (Breschini 1983; Moratto 1984; Whistler 1977, 1980) have suggested a major shift in population occurred in the Bay Area. This shift is usually viewed within an ethnolinguistic framework, whereby an indigenous Hokan-speaking population merged with or was displaced by a later Penutian-speaking population. Specifically, Breschini (1983) and Breschini and Haversat (1980) contend that ca. 2500 BP a distinct ethnic population speaking a Penutian language expanded into the Monterey Bay area. These new peoples were the precursors of the ethnohistoric Ohlone, or Costanoans. Their settlement-subsistence pattern was characterized by low mobility, logistical organization, and a more specialized subsistence regime based primarily on the exploitation of the acorn. Breschini (1983) dubbed this the "Monterey Pattern," and stated that it was akin to a "collector" pattern. The prior language group, which Breschini argued had characterized the area since approximately 4000 years BP, was organized more around a "forager" pattern. Breschini called this the "Sur Pattern" and argued that it was typified by high mobility and a generalized adaptive pattern geared toward the exploitation of a wide range of resources and environments.

The Middle/Late Transition (1000–750 BP) is a short period of time when there appears to have been a time of rapid change in settlement organization. It is represented along the central California coast by Contracting-stemmed and double Side-notched projectile points. Small leaf-shaped points also occur alongside these larger points, though their numbers are few (Jones 2003:221). Several types of *Olivella/Callianax* shell beads, including split punched (D-series), are also found. Hopper mortars make their first appearance in the archaeological record and are found in tandem with bowl mortars and pestles, as well as handstones and milling slabs. Subsistence regimes during this time demonstrate substantial differences from the previous period. Marine resources, such as fish and marine mammals, appear to have been largely dropped from Native diets. Instead, populations emphasized terrestrial resources, especially small mammals and acorns. This stands in marked contrast to developments along the Santa Barbara Channel where precolonial populations underwent increasingly progressive maritime adaptations, and fishing was a major subsistence pursuit.

As originally perceived, these changes were largely considered to have resulted from an overexploitation of coastal resources accompanying the increased demographic pressures that were initiated during the Middle Period. However, more recent evidence suggests that other factors, especially environmental degradation, played a more significant role. Coinciding with the Middle/Late Transition (1000–750 BP), California and parts of western North America underwent a dramatic warming trend, known as the "Medieval Climatic Anomaly" (Graumlich 1993; Jones and Kennett 1999; Stine 1990, 1994). Researchers have identified three major environmental trends during this period: (1) changing sea temperatures (Arnold 1992; Kennett 1998; Kennett and Kennett 2000; Pisias 1978); (2) warmer summer temperatures (Graumlich 1993); and (3) decreased precipitation (Stine 1990, 1994). According to Jones (1995:223), this latter trend had especially serious consequences for precolonial coastal populations.

Serious drought after AD 1000 (950 BP) caused such rapid, severe deterioration of the resource base that major subsistence problems developed, causing widespread settlement shifts and resource competition. Unlike the environmental changes of the early and Mid-Holocene, technological innovations could not mitigate the environmental problems, because they developed rapidly and

were severe. Jones and Ferneau (2002) posit the argument that central coast populations during this time underwent a process of "deintensification." Population growth declined, diet breadth contracted, and interregional exchange systems collapsed. In Monterey County, for example, numerous coastal sites were abandoned, and populations relocated to more interior settings (Jones 1995:215). Populations also apparently declined, perhaps as a result of resources stress, and systems of trade and exchange collapsed. Obsidian, for instance, virtually disappears from the archaeological record.

Late Period (750 BP–Historic) populations on the central coast apparently rebounded from the environmental stresses that characterized the previous period. Their subsistence practices continued to demonstrate a terrestrial focus. Jones (1995:221), for example, indicates that the consumption of fish and other marine resources was less intensive and the extraction of mussels perhaps more selective than during the previous interval. From his analysis of several sites in Big Sur, Jones (1995:206) suggests that Late Period populations focused their subsistence activities on black-tailed deer (*Odocoileus hemionus*). This view has recently been challenged by the findings from CA-MNT-1942 (Wohlgemuth et al. 2002), where fish, including several species of Clupeidae (such as anchovies and herrings), constitute significant portions of the overall faunal assemblage.

Nevertheless, it appears that Late Period habitation on the central coast shifted to inland localities (Jones and Ferneau 2002:230), and many coastal sites occupied during the Middle Period were no longer used in the Late Period, or see less intensive use (Jones et al. 1996:196; Milliken et al. 1999:153). Late period midden sites on the interior are often associated with bedrock mortars (Jones et al. 2007:140), and on the coast are more often shellfish processing sites (Jones et al. 1996:41). Population circumscription is suggested by a drop off in the diversity of obsidian sources and its use as a raw material. In fact, a decrease in the presence of Franciscan chert relative to the more locally available Monterey chert has been identified in Late Period contexts, suggesting more restricted mobility (Hylkema 1991; Jones et al. 2007:143).

Jones (1995, 2003) suggests that central coast sites dating to this time period, excluding habitation sites along productive estuaries, probably represent specialized forays made from large interior settlements. During this time, populations did not undergo transformational changes in social and political organization that led to greater complexity. Instead, human populations in these areas maintained a tribelet system of socio-political organization (Jones 1995:223). Artifact assemblages from this time are marked by contracting-stem, leaf-shaped, and small, triangular-shaped and side-notched projectile points, mortars and pestles, and a variety of late precolonial bead types, including *Olivella/Callianax* lipped (E-series) and callus (K-series). Clam shell disk beads and talc schist disk beads are also common during this time. Bifacial bead drills and detritus from *Olivella/Callianax* bead manufacture are also common at well sampled late period sites, suggesting bead manufacture was common and widespread, though not intensive (Jones et al. 2007:140).

ETHNOGRAPHIC CONTEXT

The Project Area was inhabited by Ohlone, or Costanoan populations (Levy 1978; Milliken et al. 2007). When first encountered by Spanish explorers, aboriginal inhabitants of the Bay Area and vicinity were referred to as *Costaños* (Levy 1978). The people came to be known as Costanoans (cf. Levy 1978), although now, the descendants of those earlier inhabitants prefer to be referred to as Ohlone (Bean 1994). Both terms refer to the language group spoken by the people, rather than any sort of political group. A brief summary of the ethnographic literature is presented below.

OHLONE

At Spanish contact, aboriginal groups residing in the southern Bay Area were organized under a tribelet system where villages, thought to number around 50, were autonomous political units (Levy 1978). The Ohlone exploited all regional habitats including bay marshes, valley grasslands, mountainous uplands and open coastal environs. This population occupied a relatively large area in north-central California, from the San Francisco Peninsula and the East Bay, south to the Santa Clara Valley down to Monterey, and inland south to San Juan Bautista. This area encompassed a mosaic of different habitat types, including grasslands, woodlands, chaparral, redwood forests, coastal shrub, estuaries, and tidal marshes. Miwok tribelets were to the north and northeast of their Ohlone neighbors. Yokuts tribelets were to the east. Immediate neighbors to the south of the Ohlone included the Hokan-speaking Esselen and Salinan.

The Ohlone spoke a Costanoan language, which belongs to the Utian family of the larger Penutian language stock. Speakers of Penutian inhabited north central California and included tribal groups such as the Maidu, Wintu, Miwok, and Yokuts. Anthropologists have traditionally divided the Costanoan language into eight different dialects, which Levy (1978) characterized as "different from one another as Spanish is to French."

The original name for the Ohlone, Costanoan, is a derivation of the Spanish term "costeños" or "costaños," which means "coast dwellers." In the early part of the 20th century, many anthropologists used the term "Costanoan" in reference to Native peoples who once occupied the Bay Area. In 1902, C. Hart Merriam (in Heizer 1967) referred to Bay Area languages as "Olhonean," a term derived from the name of a tribelet located on the coast between San Francisco and Santa Cruz that was spelled variously as "Alchone," "Olchone," "Oljon," or "Olhon" (Heizer 1974; Levy 1978). More recently, modern descendants of Costanoan peoples have identified themselves as "Ohlone" (Bean 1994), a derivation of "Olhone," and that is the term that will be used here, except in reference to the language family.

Researchers have hypothesized from linguistic evidence that the Ohlone were relatively late entrants into the area. Anthropologists argue that the ancestors of the Ohlone originally migrated into the San Francisco and Monterey Bay areas from the San Joaquin-Sacramento River system sometime around AD 500 (linguistic and archaeological evidence summarized by Levy 1978:486; Bean 1994:xxi). This migration represented movement of several Penutian-speaking peoples westward into areas formerly inhabited by Hokan-speakers. Other researchers have posited a much earlier time for the movement of Penutian-speakers into the area. For example, Whistler (1977) suggests that Penutian-speakers (e.g., Miwok and Ohlone) settled in the area around 3000 BC. Whenever the migration actually occurred, and indeed if such a migration took place, the ancestors of the ethnohistoric Ohlone were fully ensconced in the area by the Late Holocene.

Estimates of total Ohlone population during the time of European contact are varied. Kroeber (1925) suggested an estimate of 7,000 people, while Cook (1943) posited a total of about 11,000 at the beginning of the Mission Period, and Heizer (1974) and Levy (1978) estimated about 10,000. Based on Mission records, R. Milliken (1995:25) estimated a population density of about 2.5 people per square mile. In the San Francisco peninsula area, Milliken (1995:19) claimed that the earliest explorers usually encountered Native villages every "three to five miles," and noted that their descriptions suggested village populations numbering from 60 to 90 persons. Elsewhere in Ohlone territory, estimates of village sizes range from 200 to 400 people. Milliken (1995:19) reported that

the largest village, near Carquinez Strait, had a population of some 400 people. Other large villages were located on San Francisquito Creek (250 inhabitants), and on the coast at Point Año Nuevo (no estimate given).

By the time anthropologists like Kroeber (1925), J.P. Harrington (1985), and Merriam (1966-1967) began their systematic studies of the California Indians in the early 20th century, many of the pre-contact cultural traditions of these Native groups had been forgotten. The Ohlone were no exception. They underwent cataclysmic changes during the period of Spanish colonialism and missionization. During the Mission period, the Franciscan fathers actively discouraged or banned traditional Ohlone customs, rites, and rituals. The Ohlone also suffered a major drop in population during this time. As a result of introduced diseases and a declining birth rate, the Ohlone population fell from some 10,000 in 1770 and then to less than 2,000 in 1832 Cook (1943). Despite this, some knowledge of their language, folkways, and material culture was preserved by the few surviving Ohlone. This information was supplemented by 18th century Spanish letters, diaries, and accounts. From these scattered bits of information, and archaeological investigations, ethnographers (Bean 1994; Broadbent 1972; Kroeber 1925; Levy 1978; Milliken 1995) have pieced together a generalized , yet incomplete, picture of traditional Ohlone culture.

The Ohlone lived in approximately 50 autonomous villages that Kroeber called tribelets (Levy 1978). The tribelet defined the basic unit of Ohlone political organization. Tribelet chiefs might be either men or women. The office was inherited patrilineally, usually passing from father to son (Levy 1978:487). Each tribelet occupied a permanent primary habitation site, in addition to many smaller resource procurement camps. Each village within the tribelet was probably occupied for several months each year, with groups of families moving between different locations as food resources became seasonally available. Groups of families coalesced during winter, in part to make use of shared food stores but also to engage in annual ceremonial activities. Many Spanish diaries also note that warfare was common between Ohlone groups, normally consisting of small-scale battles resulting from arguments over land rights, or in defense of the honor of some individual or family in a tribelet (Broadbent 1972; Margolin 1978; Milliken 1995).

The Ohlone were hunters and gatherers who supported themselves largely or entirely by the exploitation of natural plants and animals. They followed a seasonal round of resource availability. Life varied with the seasons, requiring dispersed family groups to move over the tribelet territory during seasons of abundance when a heavy labor effort was required; resources were stored for the lean winter and early spring when the tribelet tended to congregate together (Levy 1978).

Although the Ohlone consumed a variety of different foods, most references to ethnographic subsistence practices indicate that they relied on the acorn as a staple food (Beechey 1968; Bickel 1981; Broadbent 1972; King 1974; Milliken 1995:17). The preferred acorns came from Tanbark oak (*Lithocarpus densiflorus*), valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), and California black oak (*Quercus kelloggii*). Readying the acorns for consumption was an involved process. Acorns were usually collected in fall and ground into flour using stone pestles in either portable stone or bedrock mortars. The flour was leached in freshwater streams to remove the tannic acid. Acorn meal was consumed during winter as mush or cakes (Broadbent 1972:61). In addition to acorns, other important plant resources were Buckeye (the nuts of which were leached and made into a mush), and the seeds of dock, gray pine, and tarweed, all of which were roasted in baskets with hot coals before eating. Berries gathered by the Ohlone included gooseberries, blackberries, madrone, and wild grapes. Roots were also gathered; these included wild onion,

cattail, and wild carrot. For coastal groups, kelp was a common food, which was sun-dried and roasted (Broadbent 1972).

Shell mounds attest to the importance of shellfish in the Ohlone diet, particularly for coastal populations. Indeed, there are many references to shellfish collection and consumption in the diaries of Spanish explorers, indicating that this resource was of significance to Contact-Period diets. Shellfish resources of primary importance included mussels (*Mytilus* spp.), abalone, (*Haliotis* spp.), and various clam, oyster, and scallop species. Mussels, clams, and other species were probably collected year-round but primarily during winter, being taken by hand or with prying bars or sticks. Clams were dug from beds within tidal flats, and a variety of fish (salmon, sturgeon, steelhead, and numerous other marine species native to California waters) were captured with spears or nets from riverine or coastal habitats (Broadbent 1972; Levy 1978). In addition, sea lions, seals, and sea otters were taken, generally by clubbing them on the beaches (Baumhoff 1963:17). The meat of beached whales was also occasionally consumed after being roasted in earth ovens. Some Ohlone groups also used small "balsas," or rafts made from Tule reeds, not only to exploit marine fishes but also to obtain lakeside waterfowl, such as ducks and geese.

Various land animals were also important to Ohlone subsistence. Large terrestrial game mammals such as deer, pronghorn, and tule elk (Baumhoff 1963:17) were key sources of protein. In order to facilitate the hunting of deer, the Ohlone, like many other Californian groups, periodically practiced controlled burning of chaparral-bearing grasslands and woodlands. These fires cleared lands of dense vegetation cover and increased the productivity of grasses and stimulated re-growth of tender shoots that attracted browsing deer. Rabbits were also taken. These were hunted in large, communal drives and snared in nets, where they were summarily clubbed to death. Ohlone hunted other small game as well, such as squirrel, ground squirrel, woodrat, and even mouse and mole (Levy 1978:491). Insects such as caterpillars and grasshoppers were also collected and eaten.

Little is known ethnographically about Ohlone mythology and cosmology, although ethnographers generally agree that their beliefs were similar to their Yokuts and Salinan neighbors to the east and south (Kroeber 1925:470-473; Levy 1978:489-490). The sun was one of several principal deities; prayers were directed to the sun through offerings of smoke, seeds, tobacco, and shell beads (Broadbent 1972; Levy 1978). Other prominent deities included Coyote, who was reputed to have taught the Ohlone the arts of subsistence. Shamans held prominent places in Ohlone culture. They wielded magical powers and maintained contact with the spirit realm. They were also healers who cured disease and could diagnose ailments through ritual singing and dancing. Shamans could also control the weather and assure an abundant crop of acorns or a successful hunt (Levy 1978:489).

According to ethnographers (Baumhoff 1980; Kroeber 1925; Loeb 1933; Milliken 1995), it is likely that Ohlone peoples practiced elements of the Kuksu religious cult. This cult was prominent among a number of indigenous northern and central California groups during the period just before and during European contact (e.g., Pomo, Patwin, Maidu, and Miwok). The Kuksu religion involved ceremonial dances, ritual, and specific regalia, such as elaborate headgear made of tule and decorated with sticks to which feathers were attached. Although the purpose of the cult has been debated and speculated upon for decades, it appears that it might have been practiced for the purpose of ensuring productive hunting, fertility, bountiful harvests, good weather, and good health.

POSTCONTACT HISTORIC CONTEXT

OHLONE ETHNOHISTORY

The Mission period (1776–1834) saw the disruption of traditional Ohlone culture and lifeways. As the Ohlone were gradually brought into the mission system, and placed under the protection and tutelage of the Mission fathers, they lost much of their erstwhile autonomous existence and traditional lifeway. Compounding the difficulties and disruption to traditional life, the Mission fathers inducted members of distant and distinct tribes into the Mission neophyte population. At Mission Santa Cruz (founded 1791), for example, Costanoan peoples were joined by Northern Valley Yokuts, conscripted from the San Joaquin Valley, as the local Indian workforce succumbed to diseases and hardships ubiquitous to the Spanish and Mexican missions.

The Ohlone underwent a period of near cultural anonymity from the mid-19th century to the relatively recent past. During this time Ohlone often presented themselves as other than Indian to the outside world, in large part to the discrimination suffered during and after the mission period. Present-day Ohlone descendants often remark that they were unaware of their heritage or that elders and relatives had at least not encouraged an interest in Ohlone heritage.

As was common elsewhere in California, Native peoples were forced to live on the fringes of American society, often in settlements near ranches or towns, or were subjected to forced assimilation. Often Ohlone descendants identified themselves as of Mexican heritage, in many ways a valid self-description considering the close ties, often marital between the Ohlone and Mexican groups. This, however, served to mask Ohlone identity for a long period.

The so-called plight of California Indians, often considered “shameful” by observers in the period, brought the attention of the federal and State governments and religious groups and missionaries. Few true reservations had been established in California at the time of the American ascension to authority in 1850, so at the beginning of the 20th century a large number of “rancherias” were established throughout California to accommodate “landless Indians”. These were administered by the federal government and were strongly influenced by religious agents. Unfortunately, rancherias were not established in Ohlone territory, at least not formal rancherias that would fit the criteria of federal trust status. As a result, the present day Ohlone community has been forced to seek federal trust status or formal recognition by the federal government, in the absence of a rancheria land base. Thus far no group within the greater Ohlone community has been able to navigate the hurdles to federal recognition. In the absence of such recognition, the Ohlone are denied the many benefits of federal trust status, and, importantly do not have the same standing as recognized tribes under regulations such as Section 106 of the National Historic Preservation Act. Currently under Section 106 Ohlone representatives occupy the lesser role of “interested persons” as opposed to “concurring parties”.

Recognition of Ohlone heritage, while present in some form since mission times, became more public in the 1960s and 1970s. A general recognition that civil rights had been denied to minority or ethnic populations, the explosion of the pan-Indian movement, and the political statements made in such places as Wounded Knee and Alcatraz, brought the “plight” of the Native American into sharp focus. Within this context, the Ohlone began to take a much greater public interest in the protection of their heritage, cultural, spiritual, and physical. This was strongly expressed in a unified desire to

preserve those elements of the traditional Ohlone lifeway still visible on the landscape: archaeological deposits from villages and camps, spiritual and ceremonial locales, and particularly burial sites.

At present the Ohlone in the Monterey Bay region are represented by a number of individuals, in turn representing themselves, family groups or organized Ohlone community groups, and interest in heritage resources in the Monterey and San Francisco Bay Areas has become the purview of Ohlone throughout the region.

SPANISH AND MEXICAN PERIODS

Beginning in 1769, Indigenous peoples of Alta California faced convoys of Spanish explorers, which included Franciscan missionaries, mestizo and Indian soldiers supporting the Spanish crown, and accompanying Indians from Mexico and Baja California. The first mission was established at San Diego in 1769 and under Spanish direction, along the California coastal region the Indians built twenty more missions, four presidios, and four pueblos. Through force, coercion, environmental, economic, political, and social pressures, Indigenous peoples of California altered a main dimension of their way of life. For variable reasons, some individuals and communities who once lived semi-nomadic, hunting and gathering lifestyles chose to live in permanent Spanish mission communities and subsist mainly on agriculture and animal husbandry. Even if one did not become baptized in a mission, the influence of the missions extended well beyond the immediate vicinity of the churches (Nicchitta et al. 2015:25).

The Santa Cruz Mission

European occupation of Santa Cruz County began with the establishment of the *Misión la Exaltacion de la Santa Cruz*. The Mission, founded in 1791, was the twelfth Franciscan mission in *Alta California*. During the Spanish occupation, the current route of Mission Street was the main thoroughfare connecting Mission *S*anta Cruz to Santa Clara and Mission Dolores in San Francisco. The first mission chapel at Santa Cruz was a temporary structure of thatch and mud built close to the San Lorenzo River. Between 1793 and 1794, a more permanent adobe chapel was constructed on a high bluff overlooking the river. The site of the second church is where Holy Cross Church currently stands on Mission Hill.

By the early 19th century, a complex of mission buildings was erected around the chapel and the mission prospered with extensive gardens, a grist mill, and more than 4,000 head of cattle. Mission lands included a wide-ranging grazing area that extended as far as Año Nuevo more than 25 miles north of Santa Cruz. The complex was bounded by current High, Emmet, Mission and Sylvar Streets. The church and the priests' quarters were located on what is now High Street. The women's quarters were on what is now known as School Street, while the storehouses and rooms for looms were located on Sylvar Street. Across School Street was an adobe building (still extant) thought to have been the mission guardhouse; this structure was later converted to a residence now known as the Neary-Rodriguez Adobe (Hoover et al. 1990). This building, located at 136 School Street, is the only remaining remnant of the 1793–1794 mission complex.

Damage to the church occurred in 1818 in response to threats of a pirate attack; the attack never occurred, but the church itself and many of its furnishings were damaged in the attempt to save mission property. In 1834, Governor Figueroa secularized the mission property. In 1840 an

earthquake weakened the church walls, and in 1857 another tremor caused the structure to collapse entirely (Hoover et al. 1990).

Villa de Branciforte

Established in 1797, *Villa de Branciforte* was one of the three original Spanish towns (*pueblos)* in Alta California, the others being San Jose (1776) and Los Angeles (1781). Named after the viceroy of New Spain, the Villa was intended to be a mixed community of active and retired Spanish soldiers as well as civilians who would defend the coast against incursions from enemy powers, (i.e., Russia and Britain). The padres at the nearby mission were vehemently opposed to the foundation of the Villa and offered little assistance to the new settlers. The Villa was located on the river terrace across the San Lorenzo River from the mission. The Villa's main thoroughfare, Branciforte Avenue, which was also used as a horserace track, was lined with crude huts, then adobe houses, some of which lasted until the middle of the 20th century (Reader 1997).

The community grew slowly due to the lack of support by the Spanish government and competition with nearby Mission Santa Cruz for cattle grazing lands. Gradually more immigrants arrived during the Mexican period (1823–1846) and the Villa grew from a population of 17 in 1807 to 194 in 1845 (Reader 1997). The Branciforte area was annexed into the City of Santa Cruz in 1905.

In 1821, Mexico achieved independence from Spain, and word of this event reached Alta California the following year. The colonial policies of the republic were to be quite different from those of the Spanish monarchy. Not only were Californians allowed to trade with foreigners, but foreigners could also now hold land in the province once they had been naturalized and converted to Catholicism. Under Spain, land grants to individuals were few in number, and title to these lands remained in the hands of the crown. Under Mexican rule, however, governors were encouraged to make more grants for individual ranchos, and these grants were to be outright. Most importantly, the new Mexican republic was determined to move to "secularize" the missions, to remove the natives and the mission property from the control of the Franciscan missionaries.

Secularization was set in motion by the Mexican Governor Echeandía in 1826, but was not carried out in earnest until 1834 when Governor José Figueroa issued an official proclamation ordering the secularization of the California missions. His proclamation turned the mission properties over to Mexican civil authorities, allowed for the disbursement of mission property, opened mission land for settlement by petitioners, and created a series of pueblos. Indian neophytes were freed from their role as personal servants to the padres; however, in reality, the effects of secularization throughout California were to deprive a large percentage of the remaining mission Indians of their property. This resulted in the creation of a relatively large population of landless Indian tenants, many of whom sought work in the newly created *rancherias.*

The new ranchos that sprang up as a result of secularization created a wholly new culture in California, one that was centered around the raising and maintaining of vast herds of cattle. These ranchos were usually owned by individual families who supervised a veritable army of Indian laborers and *vaqueros*. The ranch owners owed their livelihood to the sale and trade of the products, primarily hide and tallow, derived from their cattle. A flourishing trade with foreign merchants, mostly Americans, kept the Mexican ranchos afloat; hides and tallow were traded to American merchants for everything from food staples and clothing to furniture and luxury goods.

AMERICAN PERIOD

In 1846, the U.S. Navy was under orders during the Mexican American War to take over all California Ports and protect Union interest. The main military force was comprised of U.S. Navy bluejacket sailors and U.S. Marines from the Pacific Squadron. During the height of the war, half of the U.S. Navy available ships were protecting interests in California. In 1846, U.S. forces captured Monterey without a fight and occupied it as a defensive position. Upon conclusion of the war in 1848, Mexico ceded California to the United States and in 1849 a constitutional convention was held in Monterey, followed by ratification of the California Constitution and the next year by statehood.

The discovery of gold in California in January 1848 brought great change. While attempting to build a lumber sawmill on the American River, James Wilson Marshall discovered appreciable gold deposits. The news would soon spread to San Francisco and the rest of the globe. By the spring of 1848, the first wave of the Gold Rush was underway, and in December 1848, President Polk made an official announcement that gold had been discovered in California. Within three years, California's non-native population soared to 255,000 and San Francisco became a new metropolis virtually overnight. The Gold Rush was essentially a mass migration of mainly young men from all corners of the globe, including Australia and China, risking everything in the pursuit to strike it rich. Unfortunately, California in 1849 was a formidable landscape to navigate and traverse, and gold miners would try to navigate to the Mother Lode, a 120-mile stretch of the Sierra Nevada foothills, via ocean ports, rivers, and overland trails. Between 1848 and 1858, approximately $594 million dollars in ingots (the equivalent to $10 billion 2011 dollars) would be harvested from California's goldfields (Starr 2005). Although some struck it rich, for most people, the Gold Rush was a time of upheaval full of negative consequences including violence, racism, genocide, xenophobia, class and sex conflicts, and the brutal degradation of the environment.

On September 9, 1850, California became the 31st state in the Union. Although the preceding Spanish and Mexican Periods brought significant change to California and its indigenous inhabitants, California would be forever changed during the American Period. In addition to changing political leadership, California experienced changing economic pursuits in the form of mineral procurement, as well as agricultural and livestock production.

Large-scale American settlement of California was a product of the annexation of California by the United States in 1848, accompanied by the Gold Rush that began that same year (Ascent Environmental 2016:4.4-5). This influx of American settlers led to decades of litigation over property rights as Anglo-American settlers ignored Spanish and Mexican land grants and squatted on existing ranchos. This process was intensified by the admittance of California as a state in 1850. The restructuring of property rights, including through the introduction of the Land Law of 1851, required Mexican landowners to prove their land grant titles to the new California Land Claims Commission. These legal battles placed immense financial burdens on landowners, who were compelled to engage in a litigation process that took, on average, seventeen years (Igler 2001:45). California legal institutions and agencies favored well-financed and politically connected Anglo-American settlers and companies, who could challenge land grant claims and successfully navigate the lengthy and opaque legal process (Igler 2001:45-46). This expensive process often resulted in the breakup and sale of large ranchos to cover lawyers' fees.

In 1862–64, a devastating drought led to major cattle losses for the Ranchos across California, increasing the rate of sale of these properties as cattle perished in large numbers. The years of

drought were followed by years of abundant rainfall. A large influx of newer arrivals to the state saw a shift in ranching to farming, and a need for places to settle. American settlers displaced the Mexican and Native American population throughout the mid to late-19th century in California, using tactics ranging from legal dispossession of lands to genocide of Native American families. Racial classifications shifted during this period, with the legally defined category of "white" encompassing various nationalities and ethno-linguistic groups during different periods. For example, until 1930, individuals of Mexican descent were classified as "white" by the U.S. census, and were only consistently differentiated from the category of "white" after 1980 (Parker et al. 2015).

Americans began to settle in Santa Cruz County in the 1840s, introducing more industrial and commercial enterprise to the area. The lumber trade became an important business, necessitating the construction of a wharf. The business district in the town soon grew up around the wharf, and Front Street became the principal business area. In 1860, the town of Santa Cruz was the county seat, with a population of 800 persons. Its shipping facilities were excellent; the wharf continued to encourage commercial growth and soon several sawmills and tanneries were operating at the edges of the town. The town of Santa Cruz was incorporated in 1866; the City was incorporated ten years later. Land use patterns of the Spanish and Mexican periods left a strong imprint on the development of the City and surrounding areas.

In 1876, the narrow-gauge Santa Cruz Railroad line was completed from Santa Cruz to Watsonville, where it connected with the Southern Pacific line to San Francisco. Prior to that time, the primary mode of transportation for goods and passengers to Santa Cruz was by ocean steamer, although there was a toll road between Los Gatos and Santa Cruz. The completion of the Santa Cruz Railroad line was particularly important to the City and surround areas in the county, already well known for its exceptionally fine beaches, scenery, and weather, as it further opened the area to large numbers of tourists. Southern Pacific purchased the Santa Cruz Railroad line in 1881 for the express purpose of expanding its tourist business; by 1887 it ran two round trips per day between San Francisco and Santa Cruz. In 1906–1907, the narrow-gauge track was switched to standard gauge, giving railroad shipping a larger role in the development of the City.

The opening of the highway from Los Gatos in 1915 caused a change in the nature of tourism in Santa Cruz County. Families no longer stayed for weeks at a time in resorts and tent cities. With the advent of the automobile and the availability of good roads, tourists came for only a day or a weekend. While the growth of automobile-based tourist enterprises was eventually stimulated, the rail-based tourist businesses suffered. The net result was a temporary decline in the prosperity of Santa Cruz and the surrounding area as it adjusted to the culture of the automobile. The onset of World War II, however, brought a drastic decline to the tourism industry due to wartime travel restrictions and gasoline rationing.

Potential Cultural Resources in Santa Cruz County

5

Cultural resources are typically defined as any remains or indicators of past human activities, including artifacts, sites, structures, landscapes, and objects of importance to a culture or community for scientific, traditional, religious, or other reasons. In California, scientists group these resources by historical period including two main categories: Precolonial (before European contact–AD 1772), and Historic (AD 1772–Present). Though these two categories represent the largest dichotomy of cultural resources in California, the reality is a blending of Native American and European cultures with Tribal communities remaining active through present day. As such, Native American Tribes in California also have Tribal resources which comprise elements important to their cultural identity.

PRECOLONIAL RESOURCE TYPES

Precolonial cultural resources are the cultural remains of Native Americans prior to contact with Europeans. In California, this constitutes a lengthy period of time from AD 1791, when the Spanish military and missionaries arrived, to more than 10,000 years ago. As such, these resources tend to be less obvious as they are comprised of natural, locally available materials, and have likely been obscured by weathering and sedimentation over a long period of time. In a precolonial context, individual resources are described as artifacts or features. Artifacts are discrete, portable objects representing human activity such as arrowheads (referred to as projectile points), basketry/pottery, and dietary bones/shells. Features, like artifacts, are the remains of human activity, but are not transportable and include bedrock mortars, petroglyphs/arborglyphs, pictographs, hearthstone rings, tool stone quarries, rock shelters/caves, burials, and architectural remains such as post holes and house floors. Cultural remains on or above the soil surface have endured hundreds to thousands of years of weathering and may be difficult for a non-qualified archaeologist to identify in their natural context.

BURIED ARCHAEOLOGICAL SITES

Due to the dynamic nature of California's geology and geography, and the extensive time period of past human use or occupation of a given area, including within Monterey County, not all precolonial archaeological sites will have a surface manifestation, as they made be buried, sometimes deeply, below the modern ground surface. A tool archaeologists use to determine the sensitivity of an area for containing buried archaeological resources is a model that can be conceptualized as a set of factors that either encouraged or discouraged human use or occupation of certain landforms (e.g., aspect, extent, setting, slope), combined with those that affected the subsequent preservation (i.e., erosion or burial) of those landforms (Meyer et al. 2010; Rosenthal and Meyer 2004). Using this model, landforms can be ranked as being more or less sensitive based on demonstrated relationships between environmental variables and known precolonial site locations. For example,

the contact between depositional and non-depositional (e.g., eroded or older) landforms can also be a factor because these often mark environmental ecotones, or spatial transitions between different ecosystems, habitats, and/or plant and animal communities (Rosenthal and Meyer 2004; Meyer et al. 2010). In California, precolonial sites are commonly identified at or along ecotones, and are frequently located near the contact between younger and older geomorphic surfaces, such as fans or terraces that are higher than the floodplain (Rosenthal and Meyer 2004; Meyer et al. 2010). For this reason, areas in which both landforms occur in close proximity have a higher potential for containing buried archaeological resources than broad, level depositional landforms that lack elevated surfaces. Additionally, a study of GIS data indicates that archaeological site densities are greatest at distances of 200 meters (~656 feet) or less from a known watercourse (Rosenthal and Meyer 2004; Meyer et al. 2010). Consequently, it is expected that previously unidentified buried sites will be located relatively close to present springs and water courses, as well as former ones.

In summary, using this model, the potential for buried archaeological deposits can be conceived as follows:

- Very Low — pre-latest Pleistocene deposits regardless of the combination of other factors,
- Low — Latest Pleistocene or Holocene deposits with slopes greater than nine degrees located more than 200 m (~656 feet) from a water source and/or geomorphic contact,
- Moderate — Holocene deposits with slopes less than nine degrees located less than 200 m (~656 feet) from a geomorphic contact, located more than 200 m (656 feet) from a water source,
- High — Holocene deposits with slopes less than nine degrees located less than 200 m (~656 feet) from a geomorphic contact, AND less than 200 m (656 feet) from a water source,
- Very High — Holocene deposits with slopes less than nine degrees located less than 200 m (~656 feet) from a geomorphic contact, water source, and confluence of two or more watercourses, AND/OR contains previously identified buried site.

TRIBAL RESOURCE TYPES

Many important cultural resources, such as Tribal resources, do not necessarily leave an archaeological footprint or have physically identifiable manifestations, so it is vital to seek out the possibility of these important resources and their locations through consultation with local Tribal members. Tribal members are the keepers of this information. Recently-passed Assembly Bill 275 defines Native Americans as experts on their history and that they maintain “Tribal traditional knowledge meaning knowledge systems embedded and often safeguarded in the traditional culture of California Indian tribes and lineal descendants, including, but not limited to, knowledge about ancestral territories, cultural affiliation, traditional cultural properties and landscapes, culturescapes, traditional ceremonial and funerary practices, lifeways, customs and traditions, climate, material culture, and subsistence”. Tribal traditional knowledge is expert opinion.

Tribal resources may include many aspects of the natural environment such as plants, rivers, mountain ranges, and viewsheds. Additionally, Tribal resources may include intangible resources such as tribal names, symbols, stories, and medicines. The National Park Service provides the following examples: a location associated with the traditional beliefs of a Native American group

about its origins, its cultural history, or the nature of the world; a rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents; a location where Native American religious practitioners have historically gone, and are known to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its continuing beliefs and practices; a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.

From a regulatory perspective, Tribal Cultural Resources (CEQA) and Traditional Cultural Properties (NHPA) are defined below. Per CEQA, Tribal Cultural Resources are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the CRHR or included in a local register of historical resources, or a resource determined by the lead agency, at its discretion and supported by substantial evidence, to be significant. A cultural landscape that meets these criteria is a Tribal Cultural Resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. Historical resources, unique archaeological resources, or non-unique archaeological resources may also be tribal cultural resources if they meet these criteria. Per National Park Service Bulletin 38, a Traditional Cultural Property (TCP) is a property that is eligible for inclusion in the National Register of Historic Places (NRHP) based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community. TCPs are rooted in a traditional community's history and are important in maintaining the continuing cultural identity of the community.

HISTORIC-ERA RESOURCE TYPES

Historic-era cultural resources, in their most broad sense, include human-made/modified structures, objects, or landscape features older than 50 years, which is measured from the present date going back as far as the first European arrivals in the area. This creates a wide breadth of resources to consider when evaluating their potential to provide meaningful historical information. However, not every 50+ year old resource possesses the same potential to contribute to the historic record and the established processes of cultural resource management are meant to identify and record those resources with information potential.

While most members of the general public can appreciate the historical significance of a California mission or well-maintained Craftsman house at a glance, there are numerous other historical resources that are less obvious in their potential to yield historical information. Bridges, roads, and trails can contribute to our understanding of settlement and trade patterns; trees and vegetation can evidence historic farming practices or domestic landscape architecture practices; refuse scatters comprised of bottles, cans, and ceramic sherds can explain patterns in consumption and types of behavior; even the conspicuous lack of buildings/development can provide understanding into the use of urban/rural open-spaces and their importance to the people living in those communities.

Table 3 below details some of the feature types associated with the three main historical periods of California history. Included are built, above-ground structures (structures, bridges, culverts, etc.), as well as subsurface resources (privies, hearths, etc.) that manifest in the soil matrix. It is easy to understand that cemeteries by nature constitute buried resources, but adobe brick structures left unmaintained will melt back into the soil, leaving identifiable, albeit hidden, underground deposits.

Table 3. Historical Periods of California History and Associated Property and Feature Types.

Historical Era	Property types	Feature types
Spanish Period (1772–1822)	Architectural	Native style structures; adobe structures; orchard and corral walls/fences
	Refuse	Discrete hollow-filled features (pits, hearths, wells)
	Industrial	Kilns; hornos; tanning vats
	Ceremonial	Cemeteries
Mexican Period (1822–1846)	Architectural	Native style structures; adobe structures; house floors
	Agriculture	Irrigation canals; orchards and fields; orchard and corral walls/fences; gardens (tree pits, decorative elements)
	Refuse	Discrete hollow-filled features (pits, hearths, wells)
	Industrial	Kilns; hornos; tanning vats
	Ceremonial	Cemeteries
American Period (1846–Present)	Architectural	Foundations; builder's trenches; concrete floors; evidence of demolition
	Infrastructure	Sewer pipes; power, gas, and water lines; construction fill
	Agriculture	Orchards and fields; orchard and corral walls/fences; gardens (tree pits, decorative elements)
	Refuse	Discrete hollow-filled features (pits, privies, wells); sheet refuse
	Industrial	Warehouses; businesses; processing plants
	Ceremonial	Cemeteries

Identification of Cultural Resources 6

One of the first steps in CEQA compliance is the identification of cultural resources. Identification of cultural resources should involve three methods of investigation to ensure a reasonable and good faith effort. These include background research, pedestrian survey, and Native American consultation. This type of study is typically referred to as a Phase I cultural resource inventory study. Background research should consist of conducting a formal record search at the Northwest Information Center (NWIC) of the California Historical Resources Information System at California State University in Sonoma; conducting a Native American Heritage Commission (NAHC) Sacred Lands File search; archival research that includes reviewing historic maps and aerial imagery; reviewing the geography of the area; and modeling buried site sensitivity in areas with ground disturbing elements greater than 12 inches below current grade. Pedestrian survey should consist of a field reconnaissance covering the entire project area conducted via systemic transects spaced ten meters apart, or for rugged terrain, a coverage strategy that targets all landforms that could reasonably support the formation of archaeological sites. Native American consultation should include contacting representatives from the local Native American community that are identified by the NAHC as potentially having information pertinent to the project area to discuss the project and gather information on any potential impacts to Tribal resources or Native American concerns about the project activity. Initial communication should be in writing and include details about the project area, project activities and the results of any cultural resource inventory efforts to date, as well as a map of the project area. Follow up communication via phone call and email should be conducted for all representatives that did not respond to the initial letter. All three method of investigation should be documented in a report and the final report submitted to the NWIC.

Two important factors should be considered when completing a Phase I cultural resource inventory study of the Project Area: (1) the study should be thorough; and (2) the study should be completed as early in the planning process as possible. The study should be robust and seek to identify resources throughout all periods of time, including archaeological resources – those with a surface manifestation and those without (i.e., buried), Tribal resources, and built environment resources over 50 years old.

Without a thorough and well-timed cultural resource inventory, the risk of specific issues and conflict points increase and include:

- Early Identification of Resources. Cultural resources are often inadequately identified during the first phases of environmental review. Initial Studies, for example, can sometimes do an inadequate job of identifying known resources or predicting the potential for resources. This may lead to inappropriate mitigation planning, late discovery of resources (e.g., during construction), and in the worst case, inadvertent destruction of resources. Resolution occurs

with in-depth Initial Studies or Cultural Resource Treatment Plans, thorough review of existing records, and regional and site-specific sensitivity modeling.

- Integration of Native American Concerns in the Review Process. The Native American community (Tribes and individual representatives) are active participants in environmental review, advocating for preservation of archaeological sites, places of traditional importance, and particularly, respectful treatment of ancestral remains. These interests are complex and often hard to integrate into a set of otherwise straightforward management recommendations. This can cause fundamental misunderstandings between divergent cultural perspectives, and often leads to seemingly insurmountable conflicts. Resolution occurs through early and active consultation with the Native American community. Consultation includes direct personal communication, on-site visits, and disclosure of records of known resources. Communication with the California Native American Heritage Commission to identify Tribal representatives and interests, and constituent agency-wide programs to comply with AB 52 (incorporation of Tribal Cultural Resources in the CEQA review process) and Section 106 of the NHPA are also important components of the consultation process and should take place as early as possible.

ASSESSING CULTURAL RESOURCE SENSITIVITY

Cultural resources, comprising precolonial and historical archaeological deposits, built environment resources, and places of traditional importance to Native Americans, all must be identified and considered during the environmental review process for all South County Oak Woodland Habitat Restoration Program Projects. Santa Cruz County and the surrounding area have been occupied for 10,000+ years by Indigenous populations, was the site of concentrated Spanish Colonial and Mexican occupations, and the location of some of the first American settlements in the state. Thus, Santa Cruz County sits atop and within layer upon layer of significant cultural resources.

A majority of precolonial archaeological sites are contained exclusively within soil matrices and are vulnerable to impacts from historic and modern land use practices such as construction/development and farming. Though these activities can destroy or displace cultural materials, they do not necessarily preclude these materials from still maintaining importance and significance to the scientific and Native American communities. Modern ground disturbance for development or restoration projects is often a catalyst in exposing previously unknown buried resources. Therefore, for each South County Oak Woodland Habitat Restoration Program project, an assessment of cultural resource sensitivity should be completed and based on the information gathered during the baseline cultural resource study conducted for a specific South County Oak Woodland Habitat Restoration Program project's activities and footprint. Relying on archaeological sensitivity models that are built for expansive areas, like all of Santa Cruz County, are less accurate and therefore less reliable than the data derived from investigating and assessing a specific project footprint. Also, these models likely do not take into account historical built environmental resources or Tribal resources. These models still provide valuable information for pre-planning purposes, as they can help RCD project managers to understand the potential cultural resource constraints likely to be encountered for a potential South County Oak Woodland Habitat Restoration Program project area (Figure 3).

The initial phase of cultural resource review is critical to the success of any planned project. A broad, inclusive resource identification effort at the beginning stages of project planning and

environmental review will minimize impacts to cultural resources and will also minimize project delays due to unforeseen discoveries. Another important aspect of this phase of work is meaningful consultation with groups who may have concerns about a project or might bring to bear important cultural resources information about a project area. Consultation with outside groups, particularly Native Americans, is another way to ensure project success.

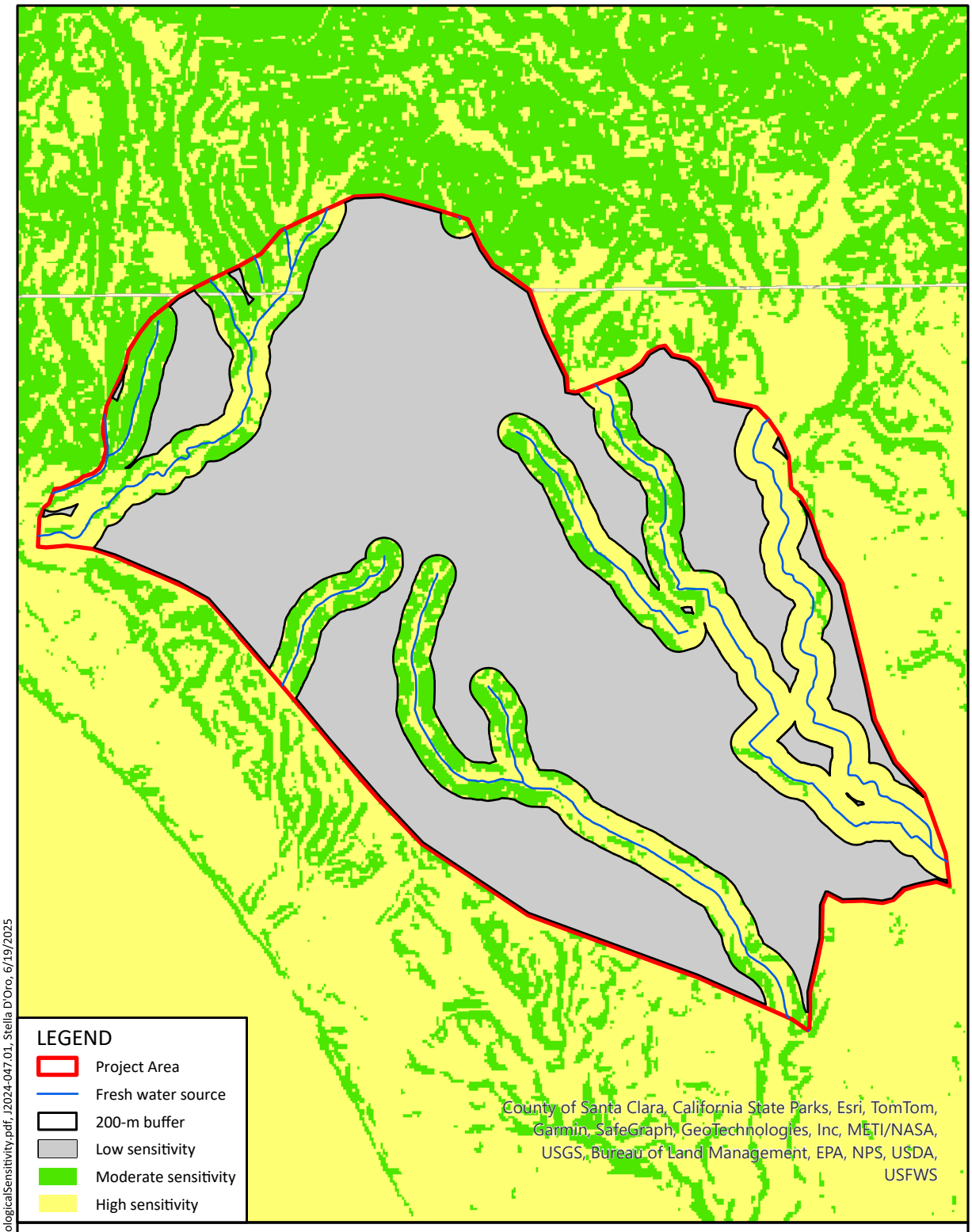


Figure 3. General archaeological sensitivity map for South County Oak Woodland Habitat Restoration Program Project Area.

File name: Figure_3_ArchaeologicalSensitivity.pdf; J2024-047.01, Stella D'Oro, 6/19/2025

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Attachment D

Restoration Program Guidelines

Restoration Program Overview

Native habitat restoration is a primary component of the Program and will be designed and implemented to promote long-term ecosystem recovery and the restoration of native habitat functions and values. Native habitats also reduce wildfire and high-wind (e.g. topping, limbing) risks to properties. This section provides a Programmatic-level framework to guide preparation of a Programmatic Restoration Plan, under which Project-specific restoration plan details will be developed during individual Project implementation efforts.

Restoration Goals

The restoration goals of the Program include the establishment, restoration, or enhancement of oak woodland habitat and other native habitats to promote the recovery of the SCLTS. In contrast with eucalyptus groves, which provide only marginal upland habitat, and may deter, restrict or limit movement through the groves, native habitats, especially oak woodland, coastal scrub, chaparral, and riparian habitats provide essential upland habitats in which SCLTS spend much of their lives. Other native habitat types (native grassland, mixed evergreen forest, redwood forest) local to the area, together with those listed above, comprise the native landscape of the Program Area, and support a suite of native plants and wildlife species as well the connectivity necessary to movement, dispersal, and genetic exchange.

In addition, the Program will reduce risks to landowners from fire and high wind events and improve public safety overall.

Project-Level Restoration Plans

To ensure that native habitat restoration is successful, in conjunction with the RCD, the County, and CDFW, all participating landowners would prepare Project-Level Restoration Plans. These plans will outline strategies and techniques specific to the Project Area, in compliance with the protective measures identified above, and will guide post-removal activities and ensure that treated areas transition to ecologically appropriate native habitat types. The RCD and/or its qualified agents will conduct monitoring of restoration areas to ensure that restoration and enhancement actions are successful, meet the predetermined success criteria, and/or, if restoration areas are not meeting designated targets, will recommend adaptive management actions to modify restoration efforts to better achieve restoration goals. The level of effort required will vary depending on baseline site conditions, adjacent habitat context, and the density and composition of invasive species.

Project-level Restoration Plans will apply the Restoration Potential Framework described below to determine the appropriate level of effort needed from passive natural recruitment in high-potential areas to intensive planting and on-going invasive weed management in low-potential sites. Many Project Areas may include a range of potential types of restoration in different zones and restoration plans would reflect this variability.

While specific methods may vary, all plans will be aligned with Program objectives and developed to ensure consistency with the Programmatic approach and applicable regulatory requirements.

RESTORATION POTENTIAL RANKING SYSTEM

Proposed Project Areas will be evaluated using a three-tiered classification system and assigned a restoration potential ranking using the methods described above in Section 3.3. The assigned strata are defined as High, Moderate, or Low Potential, based on site-specific ecological conditions. Factors that determine the site-specific restoration potential include the density of eucalyptus within the stand, presence and cover of native trees (in openings in or under the eucalyptus canopy), abundance native understory species, extent and composition of invasive plant cover, and connectivity to adjacent intact native habitats.

This ranking system, summarized in **Table 5**, serves as a guide for the streamlined restoration mechanism that is proportionate to individual site conditions and effective on a Programmatic scale while still allowing for individual Project restoration actions to be tailored based on the ecological condition of each site.

Table 1 Strata of Restoration Potential for Programmatic Evaluation of Individual Project Areas, South County Habitat Restoration Program Area, Santa Cruz County, California.

Restoration Potential	Site Characteristics	Recommended Actions
High (3)	• Minimal invasives (except eucalyptus) present; • Native trees (e.g. oaks) present in openings in or under the eucalyptus canopy; • Native understory (e.g. coffeeberry, blackberry, poison oak) present, especially in openings in eucalyptus canopy and adjacent to eucalyptus; • Intact native habitat adjacent (on two or more sides) (natural recruitment anticipated)	• Remove eucalyptus; avoid native trees and understory wherever feasible; • Implement targeted invasive management as needed (i.e. if invasive plants colonize bare areas); • Allow natural recruitment from existing and adjacent habitats; limited need for active replanting; • Planting or seeding bare areas located greater than 200 feet from native habitat may be required (i.e. natural recruitment may not be effective due to distance from propagules), depending on topography (e.g. ridgelines upslope from native habitat); • Utilize adaptive management approach to ensure restoration occurs.
Moderate (2)	• Moderate level of invasives (e.g. broom) present in understory or adjacent to eucalyptus; • Native trees limited or absent within eucalyptus; • Some native understory (e.g. coffeeberry, blackberry, poison oak) present; • Intact or partially intact native habitat adjacent (on one or more sides) (natural recruitment possible)	• Remove eucalyptus; • Implement targeted invasive management as needed; • Allow natural recruitment from adjacent habitats, where present; • Planting or seeding required in some or most areas to assist restoration; • Utilize adaptive management approach to ensure restoration occurs.
Low (1)	• Dense almost monospecific eucalyptus with minimal openings for native plants; • Invasive species present or abundant; • Native trees absent; • Native understory minimal or absent; • Non-native or degraded native habitat adjacent (natural recruitment not anticipated).	• Remove eucalyptus; • On-going invasive management required; • Planting and seeding required; • Utilize adaptive management approach to ensure restoration occurs.

General Guidelines for Project-Level Restoration Plans

Restoration plans will be initiated by identifying adjacent native habitat types that would be suitable as reference habitats for restoration activities. Habitat types and associated plant species will be determined during Project-level planning and should consider soil conditions, hydrology, topography, slope, aspect, and surrounding habitat types.

Project Restoration Plans would include the following:

- Description of the pre-treatment conditions, including adjacent habitat types, sensitive plants, and wildlife present within or adjacent to the removal area.
- Physical characteristics of the Project Area, including soils, hydrology, topography, slope, and aspect.
- Restoration goals and approach, including:
  - Eucalyptus removal techniques (to avoid native species, if present).
  - Localized target habitat types to use a reference for restoration including assemblages of native plant species suitable to site specific conditions.
  - Areas (acres or square feet) of habitat to be created, restored, and/or enhanced.
  - Method of restoration (natural recruitment, seeding, planting, dispersal of salvaged topsoil)
  - Proposed planting palettes with species appropriate to the native habitat to be restored (see reference plant palettes below).
  - Restoration approach: invasive species removal, soil preparation.
  - Restoration timeline, including proposed schedule for removal, planting, and maintenance activities.
  - Performance Criteria, including success metrics (e.g., percent native cover, survivorship of plantings, reduction in invasives).
  - Monitoring, Reporting, and Adaptive Management.

The components listed are intended to ensure that each individual project supports long-term ecological recovery and contributes to the functions and values of diverse regional habitats.

Reference Planting Palettes

To support consistent and ecologically appropriate restoration, a set of Reference Planting Palettes is provided below. These are organized by the anticipated target habitat types most likely to result from eucalyptus removal across the Program Area. Each palette includes native species appropriate for the structural and functional attributes of the habitat type, such as canopy trees, shrubs, graminoids, and herbaceous species.

Habitat types with associated planting palettes include:

- Oak woodland
- Mixed evergreen forest
- Redwood forest
- Native Grassland (Prairie)
- Coastal scrub
- Chaparral
- Riparian
- Wetland

These palettes are provided for guidance only. Final species selections should reflect local site conditions, soil and hydrologic factors, and restoration goals. All species must be locally appropriate and free of invasive or non-native species.

Table 2. Oak Woodland Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Oak Woodland Plants	
Species	**Common Name**
Aesculus californica	California buckeye
Artemisia douglasiana	Mugwort
Baccharis pilularis	coyote brush
Bromus sitchensis var. carinatus	California brome
Ceanothus cuneatus	Buck brush
Clarkia purpurea	Purple clarkia
Clarkia rubicunda	Farewell to spring
Clarkia unguiculata	Woodland clarkia
Diplacus aurantiacus	sticky monkey flower
Elymus glaucus	Blue wildrye
Frangula californica	coffeeberry
Lupins nanus	Sky lupine
Melica californica	California melic grass
Pteridium aquilinum	Bracken fern
Quercus agrifolia	Coast live oak
Quercus parvula var. *shrevei*	Shreve oak
Quercus wislizeni	Interior live oak
Rubus ursinus	California blackberry
Stipa pulchra	Purple needle grass
Symophoricarpos mollis	Creeping snowberry
Toxicodendron diversilobum	poison oak
Umbellularia californica	California bay laurel

Table 3 Mixed Evergreen Forest Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Mixed Evergreen Plants	
Species	**Common Name**
Acer macrophyllum	Bigleaf maple
Acer negundo	Box elder
Arbutus menziesii	madrone
Bromus sitchensis var. carinatus	California brome
Clinopodium douglasii	Yerba Buena
Corylus cornuta var. *californica*	California hazelnut
Dryopteris arguta	Woodfern
Fragaria vesca	Wood strawberry
Lonicera hispidula	Pink honeysuckle
Notholithocarpus densiflorus	tanoak
Pseudotsuga menziesii	Douglas fir
Pteridium aquilinum	Bracken fern
Quercus agrifolia	Coast live oak
Rubinus ursinus	California blackberry
Sanicula crassicaulis	Pacific sanicle
Stachys bullata	California hedge nettle
Symophoricarpos mollis	Creeping snowberry
Toxicodendron diversilobum	Poison oak

Table 4 Redwood Forest Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Redwood Forest Plants	
Species	**Common Name**
Asarum caudatum	Wild ginger
Corylus cornuta var. californica	California hazelnut
Corylus cornuta var. *californica*	California hazelnut
Lonicera hispidula	Pink honeysuckle
Maianthemum racemosum	False Solomon's seal
Notholithocarpus densiflorus	tanoak
Oxalis oregana	Redwood sorrel
Polystichum munitum	Sword fern
Pseudotsuga menziesii	Douglas fir
Sequoia sempervirens	Coast redwood
Trillium ovatum ssp. *ovatum*	Western wakerobin
Vaccinium ovatum	Evergreen huckleberry

Table 5Native Grassland (Prairie) Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Native Grassland (Prairie) Plants	
Species	**Common Name**
Achillea millefolium	Yarrow
Brodiaea elegans	Harvest brodiaea
Bromus sitchensis var. *carinatus*	California brome
Castilleja exserta	Purple owl's clover
Danthonia californica	California oatgrass
Eschscholzia californica	California poppy
Lasthenia californica	goldfields
Lupinus bicolor	Miniature lupine
Lupinus nanus	Sky lupine
Poa secunda var. secunda	Pine bluegrass
Sisyrinchium bellum	Blue-eyed grass
Stipa pulchra	Purple needlegrass
Triteleia ixioides	Golden brodiaea
Triteleia laxa	Ithuriel's spear

Table 6 Coastal Scrub Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Coastal Scrub Plants	
Species	**Common Name**
Acmispon glaber	deerweed
Aster chilensis	California aster
Baccharis pilularis	Coyote brush
Carex globosa	Round fruited sedge
Diplacus aurantiacus	Sticky monkeyflower
Eschscholzia californica	California poppy
Frangula californica	Coffeeberry
Gaultheria shallon	Salal
Horkelia cuneata	Wedge leaved horkelia
Marah fabacea	California man-root
Pteridium aquilinum	Bracken fern
Rubus urisinus	California blackberry
Sambucus mexicana	Blue elderberry
Scrophularia californica	California bee-plant
Toxicodendron diversilobum	Poison oak

Table 7 Chaparral Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Chaparral Plants (including San Andreas Oak Woodland)	
Species	**Common Name**
Acmispon glaber	Deerweed
Arctostaphylos crustacea var. *crinita*	Crinite manzanita
Arctostaphylos hookerii ssp. hookerii	Hooker's manzanita
Arctostaphylos pajaroensis	Pajaro manzanita
Carex globosa	Round fruit sedge
Ceanothus cuneatus var. *cuneatus*	Buckbrush ceanothus
Ceanothus dentatus	Dwarf ceanothus
Ceanothus thyrsiflorus var. *thrysiflorus*	Blue blossom
Crocantheum scoparium	Peak rush rose
Diplacus aurantiacus	Sticky monkey flower
Eriodictyon californicum	Yerba santa
Frangula californica	coffeeberry
Garrya eliptica	Silk tassels
Heteromeles arbutifolia	Toyon
Lupinus chamissonis	Dune bush lupine
Poa secunda var. *secunda*	Pine bluegrass
Quercus agrifolia	Coast live oak

Table 8 Riparian Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Riparian Plants	
Species	**Common Name**
Acer negundo	Box elder
Alnus rubra	Red alder
Cornus sericea	American dogwood
Dryopteris arguta	California woodfern
Frangula californica	coffeeberry
Lonicera involucrata	Twinberry
Lonicera hispidula	Pink honeysuckle
Morella californica	Pacific wax myrtle
Platanus racemosa	Western sycamore
Populus trichocarpa	Black cottonwood
Ribes divaricatum var. *pubiflorum*	Straggly gooseberry
Rubus ursinus	California blackberry
Salix laevigata	Red willow
Salix lasiandra var. *lasiandra*	Shining willow
Salix lasiolepis	Arroyo willow
Sambucus mexicana	Blue elderberry
Toxicodendron diversilobum	Poison oak

Table 9 Wetland Planting Palette, South County Habitat Restoration Program Area, Santa Cruz County, California.

Wetland Plants	
Species	**Common Name**
Baccharis glutinosa	Marsh baccharis
Carex barbarae	Valley sedge
Carex densa	Dense sedge
Carex obnupta	Slough sedge
Eleocharis macrostachya	Spike rush
Elymus triticoides	Beardless wild rye
Erythranthe guttata	Seep monkeyflower
Euthamia occidentalis	Western goldenrod
Juncus effusus ssp. *pacificus*	Pacific rush
Juncus occidentalis	Slender rush
Juncus patens	Common rush
Juncus phaeocephalus	Brown-headed rush
Nasturtium offininale	Watercress
Oenanthe sarmentosa	Water parsley
Potentilla anserina	Silverweed cinquefoil
Schoenoplectus californicus	California bulrush
Scirpus microcarpus	Small fruited bulrush

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