Lower Ryan Creek Off-channel and Floodplain Restoration Project *(Project ID: 1736332) 2026*

Introduction:

Trout Unlimited, Inc. (Grantee) will expand off-channel habitat and floodplain connection across 8.16 acres along Lower Ryan Creek in the McKay track providing year-round low velocity rearing habitat for juvenile salmonids. Project activities include excavating 10,200 cubic yards to create four off-channel ponds with two connections to Ryan Creek, installing 451 LW pieces with rootwads, and over 18,000 native plants to increase riparian diversity and heath improving habitat for aquatic and terrestrial species.

Typical of Humboldt Bay watersheds, the Ryan Creek watershed has been negatively impacted by a history of pre-regulation timber production and ranching activities. Roads, dike and levee systems, and grading activities have simplified the channel and disconnected floodplains from the mainstem. These changes have reduced the quantity and quality of off-channel and floodplain habitats, known to be important for federally (ESA) and state (CESA) SONCC coho salmon listed as threatened in 1997 and 2004, respectively. At the project site, Ryan Creek annually overtops its banks multiple times. Historic grading conducted to support ranching activities increases fish stranding potential due to a lack of connectivity between the channel and the floodplain. Additionally, an overly dense planted Stika spruce stand is devoid of understory vegetation increasing fire risk and limiting establishment of a diverse native riparian floodplain forest, which are important habitats for terrestrial species and natural ecosystem functions.

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* (Parts IX. X. XI. and XII.).

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The project site is located approximately 5 miles upstream from Humboldt Bay on lower Ryan Creek, tributary to Freshwater Creek. This reach of Ryan Creek is located at the head of tide, and the channel and adjacent floodplain are part of the upper stream-estuarine ecotone. The project is located within Humboldt County's McKay Community Forest (established in 2014 with funding from WCB and SCC) with public trails surrounding the project. Two perennial streams flow onto the project site, referred to as Cutten Branch and Harris Branch. The site can be accessed via an entrance road (R-Line) off of Harris Street in Eureka.

Project central coordinates: 40.774062000000001, -124.130677

Project Description:

The project goal is to create and enhance off-channel aquatic habitat on the Ryan Creek floodplain to provide high flow refugia and off-channel rearing habitat for juvenile salmonids, and to improve overall riparian and wetland habitat condition. Project objectives includes: (1) excavating 10,200 cubic yards to create 2.2 acres of winter and 1.3 acres of summer off-channel habitat including four ponds; (2) thinning an overly dense 4.5 acre spruce forest by removing 674 trees; (3) utilizing removed trees to create aquatic and terrestrial wood structures; (4) installing over 18,000 native plants comprised of 38 species restoring 5.96 acres; and (5) replacing two undersized culverts on class I (crossing 545) and class II (crossing 546) streams.

The project will improve connectivity between the channel and floodplain to reduce stranding potential of salmonids, improve fish passage at a culvert (Culvert 545) on the Cutten Branch, and reduce sediment delivery potential by replacing an undersized culvert on a Class II tributary (Culvert 546). The project will also improve riparian forest health and diversity benefiting amphibians, avian species, and macroinvertebrates, improving overall ecosystem function, health and resilience across the 8.16-acre project area.

The project will improve both aquatic and terrestrial floodplain habitat. Additionally, the project will thin a dense forest and improve resilience to wildfire risk and enhance fisheries ability to adapt to sea level rise by increasing availability of freshwater habitat at the head of tide. Finally, the project will increase the landscapes' ability to accommodate storm events, decrease flood frequency and duration on public lands and improve access to critical gas and power lines for Humboldt County during the winter.

Materials:

- Large wood for aquatic and terrestrial wood structures

- Logs for grade control weirs
- Bankline Rock/Streambed material (30 CY) for culvert replacements
- Classs 2 ab gravel (30 cy)
- Structural backfill (90 cy)
- Coir mat (1220 sy)
- 6" rock (133 cy) for r-1 and r-line construction entrance
- Threaded steel rebar
- Washers and nuts
- Soil anchors and chain
- Fiber rolls
- Pip Arch Culvert - 117" span x 79" rise
- CMP - 36" diameter
- Construction signage - for informational board to have on site to inform the public about the project during construction
- Vegetation - 18,147 plants will be installed on the project site
- Hand tools - to conduct revegetation efforts
- Seed - for revegetation and erosion control
- Fencing - for temporary plant protection cages
- Temporary irrigation materials
- Flow meter, Robotic total station, RTK GNSS, and UAS (drone) will be used to survey during and post construction.
- Survey Markers will be used during project implementation
- Electro fisher and block nets will be used in fish relocation. Silt fence, sandbags, and rock will be used for coffer dams.
- Equipment will include but is not limited to excavators, bulldozer, haul/dump trucks, and water trucks.

Tasks, Deliverables, and Timelines:

All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window.

Task Name	Start Date	Activity Description	Deliverables
Task 1 - Project Management	4/1/2027	TU will provide technical and administrative services required to complete the work for the Project. Project management includes grant management, contracting oversight and administration, obtaining permits, landowner and agency communication, securing landowner access agreements, executing and administering subcontracts, scheduling and meeting coordination, tracking project costs and accomplishments, and preparing invoices and reports. All reporting and billing will be pursuant to grant requirements and regulatory guidelines. TU will track the project budget and develop and submit invoices to the grantor. This task will occur throughout the life of the project. Marisa Parish Hanson will manage this project, with oversight provided by Program Director Anna Halligan. In addition to the TU Project Manager(s), the TU Grants & Operations Manager and the NCCP Field Accountant will assist with processing invoices, financial tracking, and reporting, and the California Director will provide oversite.	Progress reports and invoices (no more than quarterly), annual reports, copies of executed subcontracts (06/01/2028), landowner access agreements (04/30/2027), data management plan (12/30/2028), project data (03/01/2031), Draft Final Report (02/01/2031), Final Report. (3/01/2031)
Task 2 - Pre-construction Coordination and Permitting	4/1/2027	This task will be completed in partnership with TU, MLA, Humboldt County, RCAA, and PWA. The project will secure CEQA and programmatic permit coverage through CDFW FRGP. TU will follow the CEQA, Regional General Permit 12, and 401 Water Quality Certification for the project and all its conditions. A wetland delineation and cultural resources survey were previously conducted at the site during the design phase. A botanical survey will be completed by RCAA in spring of 2027/28 prior to any ground disturbance. PWA will conduct a paleontological survey of the project	Copies of permit authorizations (07/15/2028), water quality monitoring plan (06/01/2028), water quality data (03/01/2031), botanical report (06/30/2028), paleontological report (06/30/2028). (03/01/2031)

		area and produce a report in 2027. TU and Humboldt County will be responsible for securing the CDFW 1600 agreement. RCAA will conduct nesting migratory bird surveys for both years if construction begins before August 1. Humboldt County will also conduct Northern Spotted Owl surveys in the spring of each year prior to construction following state protocols. CEQA reports and biotic survey results will be provided to the CDFW Grant Manager with the 1600 notification as required. No equipment work shall occur in advance of the final Notice to Proceed. TU will provide proof that any required threatened and endangered species surveys, biological resources (including native species and their habitat), and paleontological resources surveys have occurred. This will be accomplished through written memos that: 1. Identify and record significant cultural/biotic resources within the project area, 2. Offer a preliminary significance evaluation of the identified cultural/biotic resources, 3. Assess the potential impacts to cultural/biotic resources resulting from the implementation of proposed project activities, and 4. Offer recommendations designed to protect resource integrity, as warranted. TU will provide a draft plan for water quality monitoring. Parameters such as, but not limited to, dissolved oxygen, temperature, and turbidity shall be reported. TU will submit a monitoring report within one week of initiation of in-water	

		construction and every week thereafter when in-water work occurs.	
Task 3 - Construction Administration and Management	4/1/2027	With assistance from MLA and Humboldt County, TU will select a subcontractor (the Construction Contractor) to perform all earthwork construction services relating to this project. The qualification-based process will ensure that the selected company has the skills, personnel and understanding of specific project constraints necessary to successfully execute the required work within the available timeframe. All procurement transactions will be conducted in a manner that provides, to the maximum extent practical, open and free competition. The Project Team will advertise a Request for Proposals (RFP) where experience and approach will be considered in addition to price. The RFP will be advertised at www.northcoastcoho.org , and will include a project description, permit requirements, contract example, insurance requirements, bond requirements, funding requirements, bid schedule, and design plans; and, will include a mandatory site visit. MLA and Humboldt County will assist with preparing the RFP package including minor updates to the plans and specifications as needed and assist with review and scoring of submitted bid packages and providing recommendations to TU regarding selection of a preferred subcontractor. Responses to the RFP may include a Project Execution Plan, Project Schedule, Bid Schedule, Qualifications and Project Examples, Safety Records, DIR Registration number, Subcontractor List, etc. A Notice of Award will be provided to the highest scoring responsive bidder and is the most advantageous to the Project. A Subcontract will be awarded within 30 days of the Notice of Award and Notice to Proceed will be issued after the Contractor has provided TU, Humboldt County, and MLA with required documents	Subcontract (03/30/2028)

		(e.g., Certificate of Insurance, Payment/Performance Bonds, Water Management Plan and other required submittals). After TU subcontracts with the Construction Contractor, a kickoff meeting will be held to affirm the schedule and content of the approved project execution plan. Coordination with the CDFW Grant Manager will occur in advance of construction to establish common expectations for the implementation of the project and ensure that construction begins on time. TU will administer weekly construction meetings with MLA, Humboldt County and the Construction Contractor.	
Task 3.2 - Construction	5/1/2028	Construction of the project will be conducted by the selected Construction Contractor with oversight and coordination provided by TU, MLA, and Humboldt County. The Construction Contractor will be responsible for providing all the required heavy equipment, labor, and materials required for project implementation. Oversight: MLA, with assistance from TU, will lead construction management for construction contracts, except for the revegetation activities (task 3.4). Activities include: reviewing payment requests, maintaining project records and files, attending and document project meetings, reviewing and responding to contractor submittals, monitoring construction schedules, managing contract Request for Information (RFI) and Contract Change Orders (CCO), coordinating with fisheries biologists (Thomas Gast and Associates and TU), coordinating with tree marking team (County match), maintaining construction and photo logs, and monitoring and recording progress per project plans and specifications. Water Quality will be monitored by TU and MLA during construction. TU will	Weekly WQ Data, Daily fish relocation data, Project Performance Measures for HI Projects, As-built design mark ups, Engineer's Certificate of Completion. (11/31/2029)

		report WQ data to CDFW weekly. Construction: Construction is expected to occur in 2028 and 2029 to allow time for permit authorization and Construction Contractor selection after securing project funds. Construction will occur during low flow conditions. A final Notice to Proceed will be secured prior to construction. All habitat improvements will follow techniques described in the California Salmonids Stream Habitat Restoration Manual, Volume I and Volume II. The Construction Contractor will be responsible for stake out and flagging the site and providing all the required heavy equipment, labor, and materials required for project implementation. Prior to construction, MLA, TU, Humboldt County, Green Diamond Resource Company and the Construction Contractor will attend a project kick off meeting where outstanding questions and logistical planning will occur to ensure all aspects of the project are understood and establish clear lines of communication. TU will administer weekly construction meetings. All site control plans, including road signage plan, visitor communication plan, and temporary staging areas will be agreed on by TU, Humboldt County and MLA. Construction activities will include site preparation and mobilization, tree removal, dewatering, site excavation per plans, construction of large wood structures, crossing replacements (2), and erosion control and site stabilization. No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment	

		devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the streambed and floodplain areas at the end of each workday. New Zealand Mudsnail (NZM) have been documented in the Ryan Creek watershed. The site is presumed to have NZM and all heavy equipment on-site will be steam cleaned immediately after being taken off-site and prior to being brought to another construction site. All personnel on site will be informed of this risk and will decontaminate equipment and shoes for Aquatic Invasive Species (AIS) according to the standards detailed in the CDFW AIS Decontamination Protocol. During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas. As the project nears completion TU, MLA and Humboldt County will agree to a final punch list to provide to the Contractor. A final project walk through will occur with TU, MLA, Humboldt County and Contractor to determine if the Construction Contractor has completed all work.	
Task 3.3 - Aquatic Species Relocation and Exclusion	6/15/2028	Prior to any in-water and dewatering work, fish relocation will be performed by Thomas Gast and Associates (TGA) with assistance from TU, Blue Lake Rancheria, and under supervision of CDFW during both year 1 and year 2 of construction. TU will provide daily fish relocation reports to the CDFW Grant Manager. Fish relocation will be conducted in conjunction with channel dewatering activities which will follow the plans outlined in the design documents and will conform to all CDFW guidance and permit documents. Fish relocation and dewatering will occur at ditch 2, ditch 3 and crossing 545. Electrofishing field forms will be filled out and provided to the CDFW	Fish relocation data and dewatering information for year 1 and year 2 (10/31/2029)

		project manager as per State and Federal guidelines. At the instruction of TU and TGA, the Construction Contractor will install species exclusion fencing (e.g., silt fence) to isolate the construction areas from sensitive habitats or species. CDFW staff will oversee all fish relocation activities conducted by qualified biologists. Additionally, TU will survey and clear amphibians ahead of excavation.	
Task 3.4 - Revegetation	5/1/2027	Samara Restoration will lead the effort to replant the disturbed areas with native plant communities appropriate for the environmental setting as indicated in the design plans or as modified by a qualified biologist/botanist. The construction contractor will prep the soil for seed. Native seed will be distributed in the bare areas and rolled to get good soil contact as mulch will not be used on site due to the frequent flooding across the site. TU will work with Samara Restoration, Blue Lake Rancheria, and the Wiyot Tribe Natural Resources Department to procure all container stock needed in accordance with the project designs. Samara Restoration will be responsible for leading the field crews for planting activities. The CA Conservation Corps will support revegetation and invasive plant management on site in years 1 and 2. TU will provide all materials necessary for plant cages/guards needed to protect species at high risk of herbivory. Samara Restoration will install all plant cages. The Blue Lake Rancheria and Wiyot tribe are anticipated to also support revegetation efforts. Revegetation efforts will occur after December 1, or when sufficient rainfall has occurred to ensure the best chance of survival of the seedlings and be completed by April 1. Samara Restoration will conduct irrigation in the summer and late fall for two years following revegetation efforts to increase plant survival and success. The project will have a minimum of two volunteer events inviting the public to contribute to revegetation and invasive plant	Plant as-built report for each year, Performance metrics (03/01/2031)

		management efforts across the project site. This is anticipated to occur during year 2 of planting and likely in partnership with AmeriCorps WSP members (see task 5).	
Task 4.1 - Post-Construction Topographic Monitoring	9/1/2028	MLA will lead the topographic monitoring effort for the project, as described in the Project Monitoring Plan and in accordance with FRGP requirements. This will occur during spring/summer one year and two years after construction is completed to monitor scour and depositional patterns within the channels and pond. Additionally, all channel banks and large wood structures will be inspected during the survey and any issues with stability will be noted. The survey will include a longitudinal profile within the limits of the project grading through the rearing ponds and channels. Water surface elevations and thalwegs will be surveyed. The survey will include a minimum of three transects that will cross through the ponds and/or channel. The same transect and section locations will be resurveyed during the second year of topographic monitoring. Collected monitoring data will be processed. Surveyed profiles, transects, and sections will be compared to the as-built surface to document changes. Comparative plots will be prepared.	Annual topographic monitoring memorandums for 1 and 2 years post construction (03/01/2031)
Task 4.2 - Post-construction Biological and Water Quality Monitoring	9/1/2028	Thomas Gast and Associates will lead the biological and water quality monitoring with assistance from TU, Blue Lake Rancheria and Wiyot Tribe Natural Resources Department staff for two years post construction following FRGP guidelines. Water quality probes will be installed in the off-channel ponds and in the mainstem Ryan Creek. Probes will continuously measure dissolved oxygen, temperature, and water level (depth) on regular (15-minute) intervals	Aquatic species monitoring report for 1 and 2 years post construction; Water quality and level report for 1 and 2 years post construction. (03/01/2031)

		beginning in October immediately after construction completion through July of 2031 (two years post construction). If the monitoring sites go dry during the first summer the probes will be retrieved and redeployed in October prior to onset of winter rains. Water level probes and paired photo monitoring locations (task 4.4) will be used to evaluate when off-channel features become active and/or disconnected from Ryan Creek main channel. Water quality probes will be used to evaluate quality of habitat in relation to salmonid rearing thresholds. Biological monitoring will occur monthly from October - July to evaluate juvenile salmonid use, distribution and growth in the constructed habitats. Minnow traps and beach seines will be used at a minimum of five locations across the project site. Minnow traps will be baited with frozen, infertile, treated salmon roe or shrimp and left to soak for a minimum of 60 minutes. Beach seines will be used where there are gaps in wood structures and deployed by a minimum of two people. The soak time, seine area and haul number will be recorded to be able to calculate catch per unit effort. Instantaneous water quality will be measured at all sites prior to sampling using a YSI handheld multimeter. The weight, length and age class of all salmonids captured will be recorded. All salmonids will be scanned for the presence of a passive integrated transponder (PIT) tag. Those without a PIT tag and greater than 70mm will be marked with a 12mm PIT tag. All data collection and management will be coordinated with CDFW. Continuous water quality probes will be downloaded during each monthly biological monitoring event.	

Task 4.3 - Post-construction Vegetation Monitoring	9/1/2028	TU will monitor native plants installed in the freshwater wetland, mixed riparian, and pasture/wet meadow zones in spring/summer for 1 and 2 years post construction to determine overall numeric survival and qualitative health and vigor. Monitoring will include subsampling revegetation plantings to estimate success rate by vegetative type and to determine the species with the highest percent survival. The identified CDFW target success rate is 80% (CDFW 2024). Monitoring the plants installed in the freshwater wetland, mixed riparian, and pasture/wet meadow areas will consist of ocular determination of the percent cover of the planted species. In addition, RCAA will note the encroachment of non-native plant species. Notes will be taken during each vegetation survey to determine survivability. Reports will document recommendations for adaptive management actions, as necessary, to ensure the project goals are met. The surveyor will assess if excessive water and prolonged flooding has led to lower-than-expected survival, and if plant health has declined due to drought. The location and coverage of invasive plant species will be noted. Plant mortality will be noted by location and by species when observed.	Monitoring report for 1 and 2 years post construction (03/01/2031)
Task 4.4 - Photo Monitoring	9/1/2028	TU will lead pre and post project photo monitoring with sites established at a minimum of 10 locations across the project site. Prior to construction TU staff will establish photo monitoring sites at representative locations of the ponds, connection channels, wood structures and revegetation areas. Immediately post construction the photo points will be recaptured and established. Follow up photos will be collected during fish monitoring locations and/or during flow events of interest (i.e., high winter flows and low summer flow). Photos will also be collected during	Photo log from pre and post construction (03/01/2031)

		vegetation monitoring events noting plant health and vigor. Photo monitoring will occur a minimum of every three months for two years post construction.	
Task 5 - Community Outreach and Engagement	1/1/2028	TU will work with Humboldt County and AmeriCorps WSP members to coordinate a minimum of 2 volunteer workdays at the project site. Activities for the day will include installation of native plants, removal of native plants, and construction of browse excluding cages. The project will be advertised on TU's website and social media platforms, as a public service announcement on local radio, and fliers hung locally. The event will provide an opportunity to engage with and educate the public about the project goals.	Outreach materials and report of the number of volunteer hours and work (04/01/2030)

Additional Requirements:

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured, including cultural and biological surveys. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife (CDFW).

No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the streambed and flood plain areas at the end of each workday.

All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol.

During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual, 4th Edition (CA Restoration Manual)* or *other approved guidelines and manuals for salmon and steelhead habitat restoration*.

The Grantee shall notify CDFW at least five working days before the project site is de-watered and the stream flow diverted and submit a Water Quality Monitoring Plan and Dewatering Plan to CDFW for State Water Resources Control Board approval at least 30 days before the activity. The notification will provide a reasonable time for CDFW personnel to oversee the implementation of the water diversion plan and the safe removal and relocation of salmonids

and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:

a. Fish dewatering and relocation activities shall only occur between June 15 and October 31 of each year.
b. Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.
c. The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the USACE Regional General Permit and National Marine Fisheries Service (NMFS) Biological Opinion.
d. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
e. USFWS Approved fisheries biologists will provide fish relocation data via the Grantee to the CDFW personnel on a form provided by CDFW.

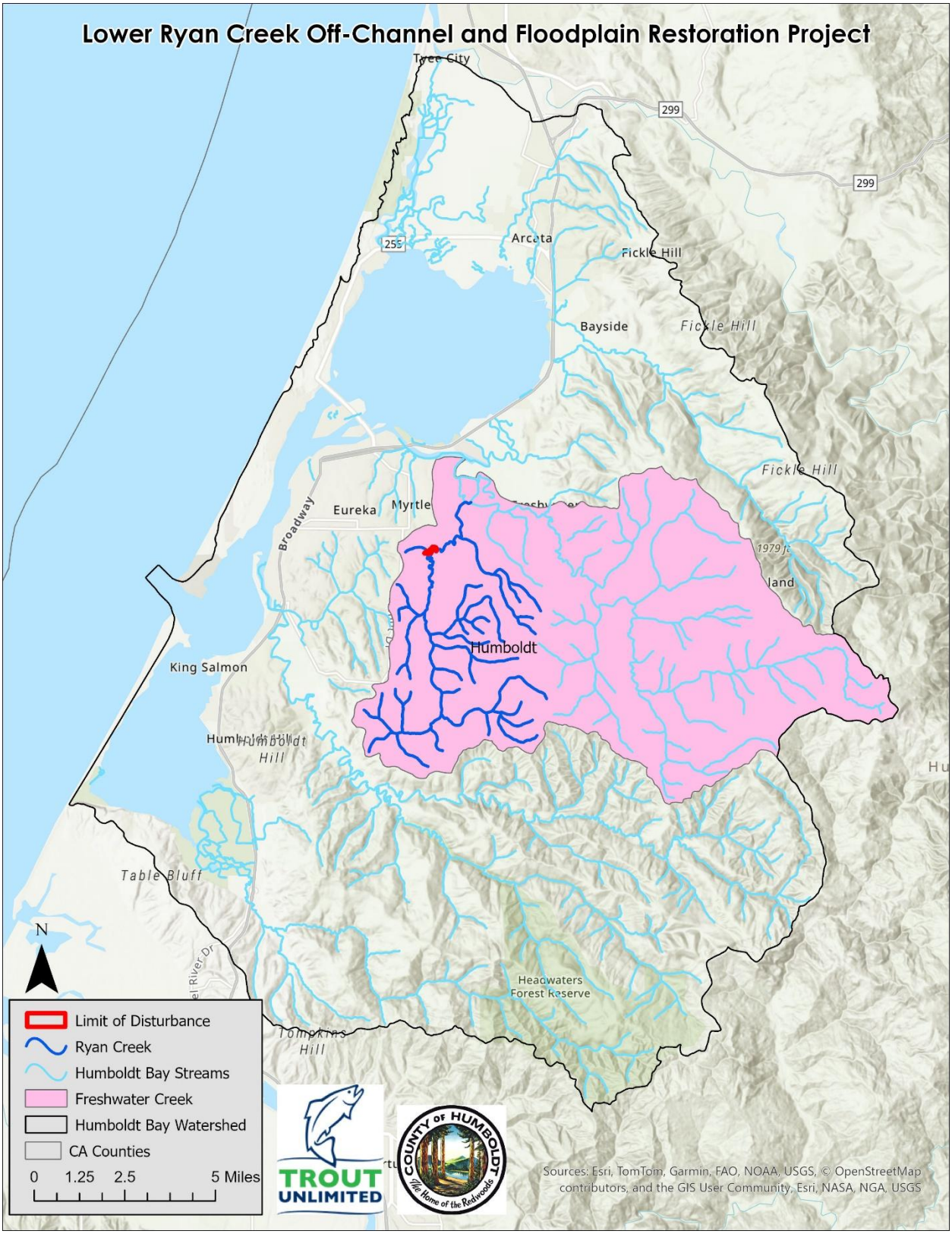
The bridge (culvert) design and installation will meet flow carrying capacity required for a 100-year flood event as identified by specifications determined by National Oceanic and Atmospheric Administration (NOAA) Fisheries and the CDFW, for adult and juvenile salmonid fish passage. The project will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and criteria for fish passage as described in Volume II, Part IX, of the *California Salmonid Stream Habitat Restoration Manual*. The engineered plans for the bridge (culvert) installation shall be visually reviewed and authorized by NOAA Fisheries or CDFW engineers prior to commencement of work.

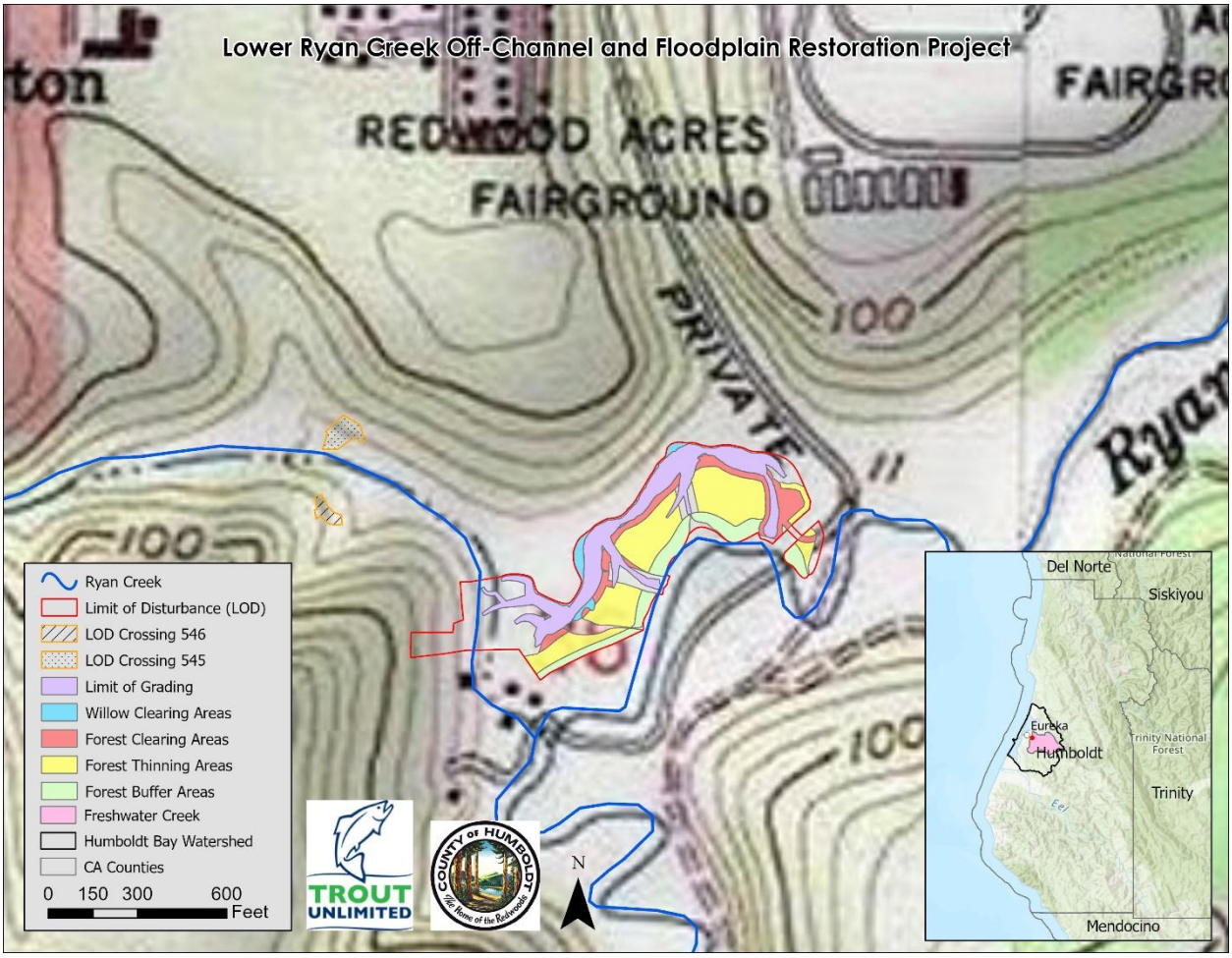
The Grantee/landowner will maintain the new crossing, inspect the crossing in a timely manner and remove debris as necessary during the storm season.

Final structure design and placement will be determined by field consultation

between the Grantee and the CDFW Personnel.

Planting of tree seedlings should take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings.


Lower Ryan Creek Off-Channel and Floodplain Restoration Project
Tree City
299
299
255
Arcata
Fickle Hill
Bayside
Fickle Hill
Fickle Hill
Eureka
Myrtle
Broadway
Humboldt
King Salmon
Humboldt Hill
Table Bluff
Headwaters Forest Reserve
Tompkins Hill
N
Limit of Disturbance
Ryan Creek
Humboldt Bay Streams
Freshwater Creek
Humboldt Bay Watershed
CA Counties
0 1.25 2.5 5 Miles
TROUT UNLIMITED
COUNTY OF HUMBOLDT
The Home of the Redwoods
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, NASA, NGA, USGS


Lower Ryan Creek Off-Channel and Floodplain Restoration Project
REDWOOD ACRES
FAIRGROUND
PRIVATE
100
Ryan Creek
Limit of Disturbance (LOD)
LOD Crossing 546
LOD Crossing 545
Limit of Grading
Willow Clearing Areas
Forest Clearing Areas
Forest Thinning Areas
Forest Buffer Areas
Freshwater Creek
Humboldt Bay Watershed
CA Counties
0 150 300 600
Feet
TROUT UNLIMITED
COUNTY of HUMBOLDT
N
Del Norte
Siskiyou
Eureka
Humboldt
Trinity National Forest
Trinity
Mendocino

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ascaphus truei	Pacific tailed frog	AAABA01010	None	None	SSC
Rana aurora	northern red-legged frog	AAABH01021	None	None	SSC
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	AAABH01051	None	None	SSC
Rhyacotriton variegatus	southern torrent salamander	AAAAJ01020	None	None	SSC
Accipiter striatus	sharp-shinned hawk	ABNKC12020	None	None	WL
Astur cooperii	Coopers hawk	ABNKC12040	None	None	WL
Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP
Chaetura vauxi	Vauxs swift	ABNUA03020	None	None	SSC
Ardea alba	great egret	ABNGA04040	None	None	-
Ardea herodias	great blue heron	ABNGA04010	None	None	-
Botaurus lentiginosus	American bittern	ABNGA01020	None	None	-
Egretta thula	snowy egret	ABNGA06030	None	None	-
Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-
Anarhynchus montanus	mountain plover	ABNNB03100	None	None	SSC
Falco columbarius	merlin	ABNKD06030	None	None	WL
Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	-
Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-
Thalasseus elegans	elegant tern	ABNNM08040	None	None	WL
Pandion haliaetus	osprey	ABNKC01010	None	None	WL

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Poecile atricapillus	black-capped chickadee	ABPAW01010	None	None	WL
Passerculus sandwichensis alaudinus	Bryants savannah sparrow	ABPBX99011	None	None	SSC
Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC
Rallus obsoletus obsoletus	California Ridgways rail	ABNME05011	Endangered	Endangered	FP
Numenius americanus	long-billed curlew	ABNNF07070	None	None	WL
Asio flammeus	short-eared owl	ABNSB13040	None	None	SSC
Athene cunicularia	burrowing owl	ABNSB10010	None	Candidate Endangered	SSC
Strix nebulosa	great gray owl	ABNSB12040	None	Endangered	-
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC
Empidonax traillii	willow flycatcher	ABPAE33040	None	Endangered	-
Entosphenus folletti	northern California brook lamprey	AFBAA02110	None	None	SSC
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Lampetra richardsoni	western brook lamprey	AFBAA02180	None	None	SSC
Oncorhynchus clarkii	coast cutthroat trout	AFCHA0208A	None	None	SSC
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	AFCHA0213Q	Threatened	None	SSC
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	SSC
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Cicindela hirticollis gravida	sandy beach tiger beetle	IICOL02101	None	None	-
Scaphinotus behrensi	Behrens snail-eating beetle	IICOL4L070	None	None	-
Aplodontia rufa humboldtiana	Humboldt mountain beaver	AMAFA01017	None	None	-
Arborimus albipes	white-footed vole	AMAFF23010	None	None	SSC
Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC
Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-
Martes caurina humboldtensis	Humboldt marten	AMAJF01017	Threatened	Endangered	SSC
Pekania pennanti	Fisher	AMAJF01020	None	None	SSC
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Bassariscus astutus raptor	northern California ringtail	AMAJE01014	None	None	FP
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Myotis evotis	long-eared myotis	AMACC01070	None	None	-
Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-
Littorina subrotundata	Newcombs littorine snail	IMGASR3010	None	None	-
Margaritifera falcata	western pearlshell	IMBIV27020	None	None	-
Anodonta californiensis	California floater	IMBIV04220	None	None	-
Actinemys marmorata	northwestern pond turtle	ARAAD02031	Proposed Threatened	None	SSC
Coastal Terrace Prairie	Coastal Terrace Prairie	CTT41100CA	None	None	-
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	CTT52110CA	None	None	-
Northern Foredune Grassland	Northern Foredune Grassland	CTT21211CA	None	None	-
Sitka Spruce Forest	Sitka Spruce Forest	CTT82110CA	None	None	-
Trichodon cylindricus	cylindrical trichodon	NBMUS7N020	None	None	-
Fissidens pauperculus	minute pocket moss	NBMUS2W0U0	None	None	-
Sulcaria spiralifera	twisted horsehair lichen	NLT0042560	None	None	-
Usnea longissima	Methuselahs beard lichen	NLLEC5P420	None	None	-
Angelica lucida	sea-watch	PDAPI070G0	None	None	-
Glehnia littoralis ssp. leiocarpa	American glehnia	PDAPI13011	None	None	-
Hesperevax sparsiflora var. brevifolia	short-leaved evax	PDASTE5011	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Lasthenia californica ssp. macrantha	perennial goldfields	PDAST5L0C5	None	None	-
Layia carnosa	beach layia	PDAST5N010	Threatened	Endangered	-
Cardamine angulata	seaside bittercress	PDBRA0K010	None	None	-
Erysimum menziesii	Menzies wallflower	PDBRA160R0	Endangered	Endangered	-
Silene scouleri ssp. scouleri	Scoulers catchfly	PDCAR0U1MC	None	None	-
Spergularia canadensis var. occidentalis	western sand-spurrey	PDCAR0W032	None	None	-
Carex arcta	northern clustered sedge	PMCYP030X0	None	None	-
Carex leptalea	bristle-stalked sedge	PMCYP037E0	None	None	-
Carex lyngbyei	Lyngbyes sedge	PMCYP037Y0	None	None	-
Carex praticola	northern meadow sedge	PMCYP03B20	None	None	-
Eleocharis parvula	small spikerush	PMCYP091G0	None	None	-
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	PDFAB0F7B2	None	None	-
Astragalus rattanii var. rattanii	Rattans milk-vetch	PDFAB0F7E2	None	None	-
Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-
Lathyrus glandulosus	sticky pea	PDFAB251A0	None	None	-
Lathyrus japonicus	seaside pea	PDFAB250C0	None	None	-
Lathyrus palustris	marsh pea	PDFAB250P0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ribes laxiflorum	trailing black currant	PDGRO020V0	None	None	-
Erythronium revolutum	coast fawn lily	PMLIL0U0F0	None	None	-
Lilium kelloggii	Kelloggs lily	PMLIL1A0A0	None	None	-
Lilium occidentale	western lily	PMLIL1A0G0	Endangered	Endangered	-
Lilium rubescens	redwood lily	PMLIL1A0N0	None	None	-
Lycopodium clavatum	running-pine	PPLYC01080	None	None	-
Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0	None	None	-
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	PDMAL110F9	None	None	-
Sidalcea oregana ssp. eximia	coast checkerbloom	PDMAL110K9	None	None	-
Monotropa uniflora	ghost-pipe	PDMON03030	None	None	-
Pityopus californicus	California pinefoot	PDMON05010	None	None	-
Lewisia kelloggii ssp. kelloggii	Kelloggs lewisia	PDPOR040M1	None	None	-
Montia howellii	Howells montia	PDPOR05070	None	None	-
Abronia umbellata var. breviflora	pink sand-verbena	PDNYC010N4	None	None	-
Oenothera wolfii	Wolfs evening-primrose	PDONA0C1K0	None	None	-
Neottia cordata	heart-leaved twayblade	PMORC1N060	None	None	-
Castilleja ambigua var. humboldtiensis	Humboldt Bay owls-clover	PDSCR0D402	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Castilleja litoralis	Oregon coast paintbrush	PDSCR0D012	None	None	-
Chloropyron maritimum ssp. palustre	Point Reyes salty birds-beak	PDSCR0J0C3	None	None	-
Collinsia corymbosa	round-headed collinsia	PDSCR0H060	None	None	-
Pleuropogon refractus	nodding semaphore grass	PMPOA4Y080	None	None	-
Puccinellia pumila	dwarf alkali grass	PMPOA531L0	None	None	-
Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-
Gilia millefoliata	dark-eyed gilia	PDPLM04130	None	None	-
Chrysosplenium glechomifolium	Pacific golden saxifrage	PDSAX07020	None	None	-
Mitellastra caulescens	leafy-stemmed mitrewort	PDSAX0N020	None	None	-
Viola palustris	alpine marsh violet	PDVIO041G0	None	None	-

Cox Creek Coho Habitat Improvement Project *(Project ID: 1736335) 2026*

Introduction:

The Eel River Watershed Improvement Group (ERWIG) (Grantee) will improve the hydrogeomorphic function and ecological complexity in Cox Creek. The goal of this project is to improve the hydrogeomorphic function and ecological complexity in Cox Creek for salmonid habitat through a process-based approach. Forty large wood (LW) structures containing 130 pieces of LW will be constructed along 1.0 mile of Cox Creek. The LW added to the stream for the project will increase pool area and depth, improve shelter, sort spawning substrate, increase the frequency of side channel and flood plain inundation, and provide high flow velocity refugia.

Need:

Beginning near the end of the nineteenth century, timber harvest along stream corridors and easily accessible areas reduced LW recruitment potential to streams (NMFS, 2014). Timber harvest in this region peaked in 1959, adversely affecting the natural hydrology, hillside stability, and riparian corridor function, which in turn greatly affected salmonids via habitat degradation. In addition to legacy logging practices, large storm flow events, especially those of 1955, 1964, and 1997, contributed to the further degradation of salmonid habitat

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual*. Applicant indicated using protocols from CDFW California Salmonid Stream Habitat Restoration Manual Volume I, Section VII and CDFW Fish Bulletin 184; if using CA Manual, applicant indicated using section(s) VII.).

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The project is located on Cox Creek, a first order stream, tributary to Sproul Creek, tributary to the South Fork Eel River, tributary to the Eel River. The project site is near the town of Garberville, CA and is located in Township 05 South, Range 03 East, Section 17 of the Garberville 7.5 Minute U.S. Geological Survey Quadrangle. The downstream extent of the project reach is 5.6 miles upstream from the confluence of Sproul Creek with the South Fork Eel River. The upstream end of the reach is 1.0 mile upstream from Cox Creek's confluence with Sproul Creek.

Project central coordinates: 40.027634999999997, -123.858448

Project Description:

The objective of this project is to add 40 structures containing 130 pieces of LW to Cox Creek. LW structures will be installed along a 1.0-mile reach of Cox Creek and will be composed of redwood and Douglas fir logs including whole trees. These logs will be anchored to live trees along the stream banks when they are less than twice the bankfull width of the stream. This project will provide habitat to coho salmon and steelhead, which have been documented in the project reach. Additionally, 200 redwoods and 50 native shrubs will be planted in the riparian zone along the project reach.

The goal of this project is to improve hydrogeomorphic function and ecological complexity throughout the project reach. The project will increase Coho and steelhead reproductive success and juvenile survival by increasing pool area and depth, increasing shelter complexity, sorting substrate for spawning habitat, increasing the frequency of side channel and flood plain inundation, capturing large and small wood, and providing velocity refugia during high flows. This project was designed to meet the SONCC "very good" target value for pieces of LW per mile. This target value was chosen as it is an indicator of Coho habitat value. Stream reaches that meet or exceed these target values will provide high quality habitat for salmonids. Adding 130 LW pieces will increase the LW volume in the stream reach from 37 pieces per mile (below the "good" threshold) to 167 pieces per mile (well above the "very good" threshold).

Materials:

All materials will be purchased by applicant.

Gripping and Anchoring Supplies:

*1" threaded bar, nuts, and plates (washers). These items are used to anchor logs to live trees and other logs.

*Portable band saws, wood drills, chain saws, band saw blades, and timber bits. The band saws and wood drills are used when anchoring the structures. Wood drills and timber bits are used to drill holes in live trees and logs for rebar attachment. Portable band saws are used to cut rebar to length. Batteries or portable generators (when needed) will be used to power the power tools. Chainsaws are used to remove hazard trees, and to trim logs to length.

*Cables, chokers, cable shorteners, pulleys, griphoist, and shackles will be used to grip logs into place.

Misc Project Supplies:

*Erosion Control Materials for preventing surface erosion

*Laser Distance Measurer for collecting metrics

*Shear Pins for repairing grip hoists

*Bio Bar Oil for chainsaws

*Markers/Pens/Pencils for collecting metrics

*Waders and Boots for collecting metrics

*Time-lapse Camera for documenting large wood structure performance under high flows.

*Wire rope lubricant for keeping grip hoist mainline and rigging cables clean and lubricated.

*Decontamination Supplies to keep gear free from invasive species.

LSAA permit: Needed for instream work.

ERWIG Mileage: Reimbursement for miles driven by ERWIG staff to and from project site in order to manage the project. Will follow California state reimbursement rate.

ERWIG Per Diem: Used to facilitate project oversight by having staff stay nearby to the project site. Per Diem reimbursement will follow California state reimbursement rate.

Conifer Logs: Will be used in the construction of the habitat structures in order to provide habitat and will be anchored together as appropriate. Logs will be redwood or Douglas fir and will be sourced from riparian trees. Donated by the landowner.

Conifer seedlings and native plants: Will be used to plant areas disturbed by project activities and areas within the project reach that are lacking canopy cover. Species will include coast redwood (Sequoia sempervirens), salal (Gaultheria shallon), evergreen huckleberry (Vaccinium ovatum), azalea (Rhododendron sp.), thimbleberry (Rubus parviflorus), and western sword fern (Polystichum munitum).

Tasks, Deliverables, and Timelines:

All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window.

Task Name	Start Date	Activity Description	Deliverables
Task 1: Project Management and Administration	4/1/2027	Grant oversight including invoicing and reporting will be conducted by Grantee Executive Director and Project Manager (Staff). Upon final execution of the Grant and prior to receiving a Notice to Proceed, Grantee shall deliver the following items to the CDFW Grant Manager: 1. Request to spend project funds in order to prepare for implementation (e.g., obtain permits, secure subcontracts, purchase supplies, apply for a Streambed Alteration Agreement, etc.). Requests shall be sent by email or telephone. 2. Access agreement that will be project specific and meet grant agreement requirements. 3. Executed subcontracts. A written copy of the sub agreement shall be submitted to the CDFW Grant Manager. The subcontract shall include specific language which establishes the rights of the auditors of the State to examine the records of the subcontractor relative to the services and materials provided under the grant. 4. CEQA survey interim reports for archaeological and botanical surveys. Interim reports shall be delivered prior to receiving notice to proceed, as part of the Notification of Lake or Streambed Alteration Application (LSAA) package. Final Archaeological, botanical, and paleontological surveys shall be delivered prior to the End Term date. 5. Send Grantor LSAA with a check for the most current permit fee. The Grantee shall notify the CDFW Grant Manager a minimum of 10 business days prior to the beginning of project implementation. Throughout the duration of the grant agreement, ERWIG Staff will write and deliver annual reports, a draft final report, and a final report.	1600 Permit - 7/1/2028, Executed Subcontracts - 7/1/2028, Access Agreements - 7/1/2028, Invoices - 7/1/2027, Progress Reports - With every invoice, Annual Report - Annually in November, Project Data - 2/28/2030, Final Report - 2/28/2030, Final Invoice - 2/28/2030

Task 2. CEQA Surveys	4/1/2027	Archaeological, botanical, and paleontological subcontractors will conduct research and surveys within the project reach to fulfill CEQA requirements for FRGP. Interim survey reports will be delivered to CDFW Grant Manager prior to receiving a Notice to Proceed. Botanist will note wetland habitat to avoid. Wailaki tribal representative will provide cultural information.	Interim Survey Report - 7/10/2028 Final Survey Report - 2/28/2030
Task 3. Site Preparation	5/3/2027	ERWIG, the CCC and the Wailaki tribal representative will finalize site-specific designs based on channel morphology, equipment access, and LW availability. They will submit designs for CDFW Project Manager approval. The ERWIG Project Manager will flag sites for wood selection, staging, and installation, clear brush as needed, and designate staging areas for wood along the project reach. Pre-project photos and metrics will be collected by ERWIG. Tools and materials will be purchased by ERWIG prior to the start of implementation and on an as-needed basis throughout the project.	Finalized design plans - 7/1/2028 Flagged equipment access routes - 7/1/2028 Pre-project photos and metrics - 7/1/2028
Task 4. Large Wood Structure Construction	7/1/2028	Upon approval from the CDFW Project Manager, construction will begin on 40 LW features under the direction of the ERWIG Project Manager. Some features may involve cutting down trees, which will be accomplished by the Licensed Timber Operator. The Registered Professional Forester will sign off on all trees chosen for use in the project. With approval from the grant manager, CCC Corpsmembers will move logs into position using a grip hoist come-along. Site construction, wood placement, and anchoring will be in accordance with the CDFW California Salmonid Stream Habitat Restoration Manual, Section VII (Flosi et al. 2010). The project will utilize living riparian trees as anchors by wedging the logs between them where feasible. CCC Corpsmembers will anchor the sites according to design and anchoring specifications. Corpsmembers will use one-inch threaded	40 LW structures made up of 130 logs - 10/31/2029 Water quality monitoring data sheets - 2/28/2030

		rod (rebar) to anchor logs to mature riparian trees and other logs. Holes will be drilled through the logs and their anchor trees using a wood drill, timber bit, and drill bit extensions when necessary. Rebar will be inserted through the log and anchor tree and secured with nuts and washers. Corpsmembers will be supervised by a trained Conservationist 1 (C1) and the ERWIG Project Manager. ERWIG and the Tribal representatives may assist with anchoring. Erosion control methods will be employed by ERWIG and the CCC as required at each structure and along equipment corridors to eliminate the possibility of sediment transport to the stream. To address concerns over invasive species this project will follow the ERWIG Aquatic Invasive Species Decontamination Protocol, which is in line with the CDFW Aquatic Invasive Species Decontamination Protocol. ERWIG. Tribal, and CCC staff will monitor water quality when necessary.	
Task 5. Riparian Planting	11/1/2028	ERWIG staff will return in the winter following project implementation to plant 200 redwood seedlings and 50 native plants, with a primary focus in areas lacking sufficient conifer cover or riparian vegetation.	Two-hundred redwoods and 50 native plants planted along the project reach - 2/28/2030
Task 6. Post Project Photo & Data Collection	11/1/2028	Following implementation ERWIG will take post-project photos and quantitative implementation metrics will be collected which satisfy the Project Annual Progress Reports and Final Report. ERWIG will also observe the project throughout the first winter after implementation and provide a summary of how the project is performing.	Post-project metrics and photos - 2/28/2030 First Winter Observations Summary - 2/28/2030

Additional Requirements:

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured, including cultural and biological surveys. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife (CDFW).

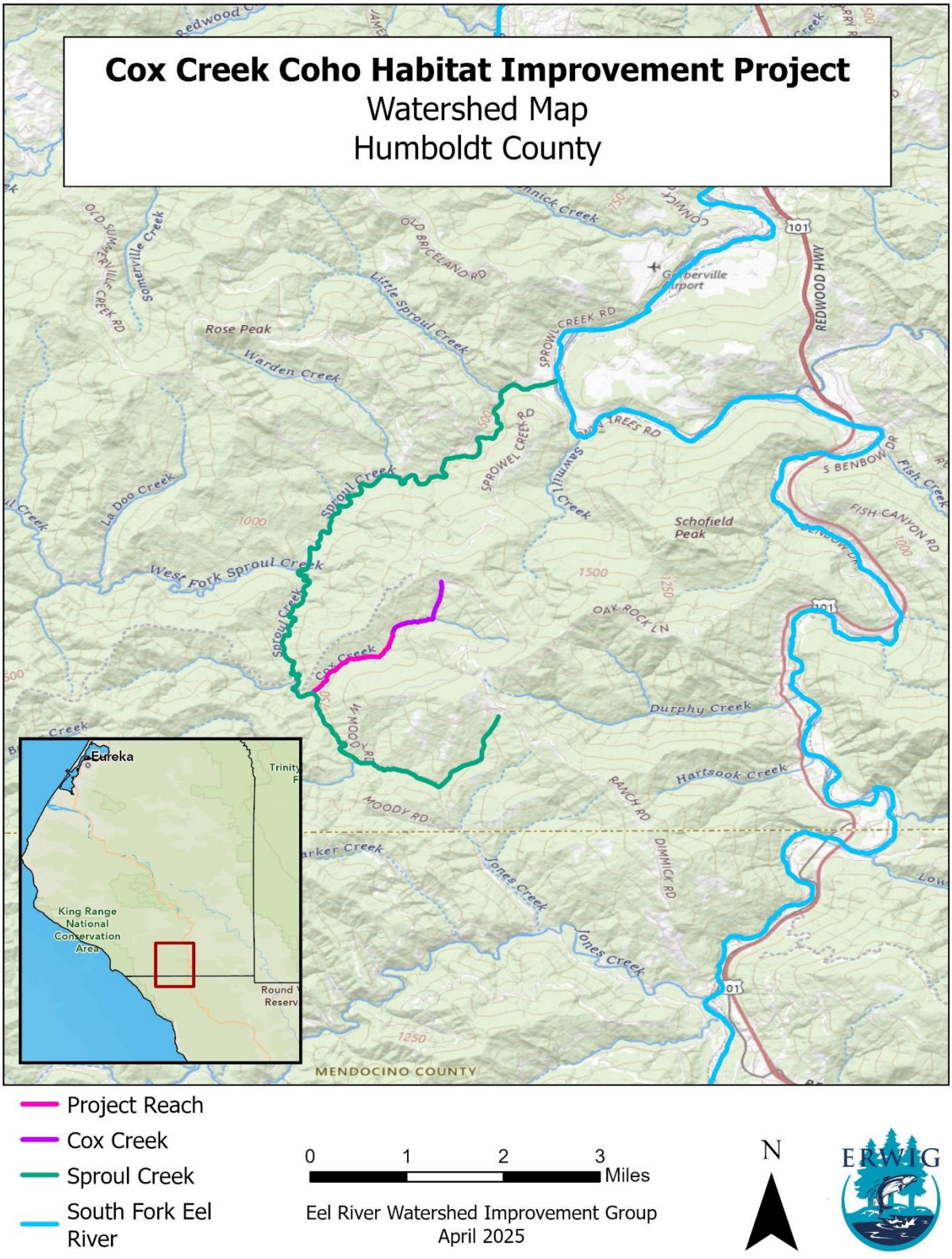
No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the streambed and flood plain areas at the end of each workday.

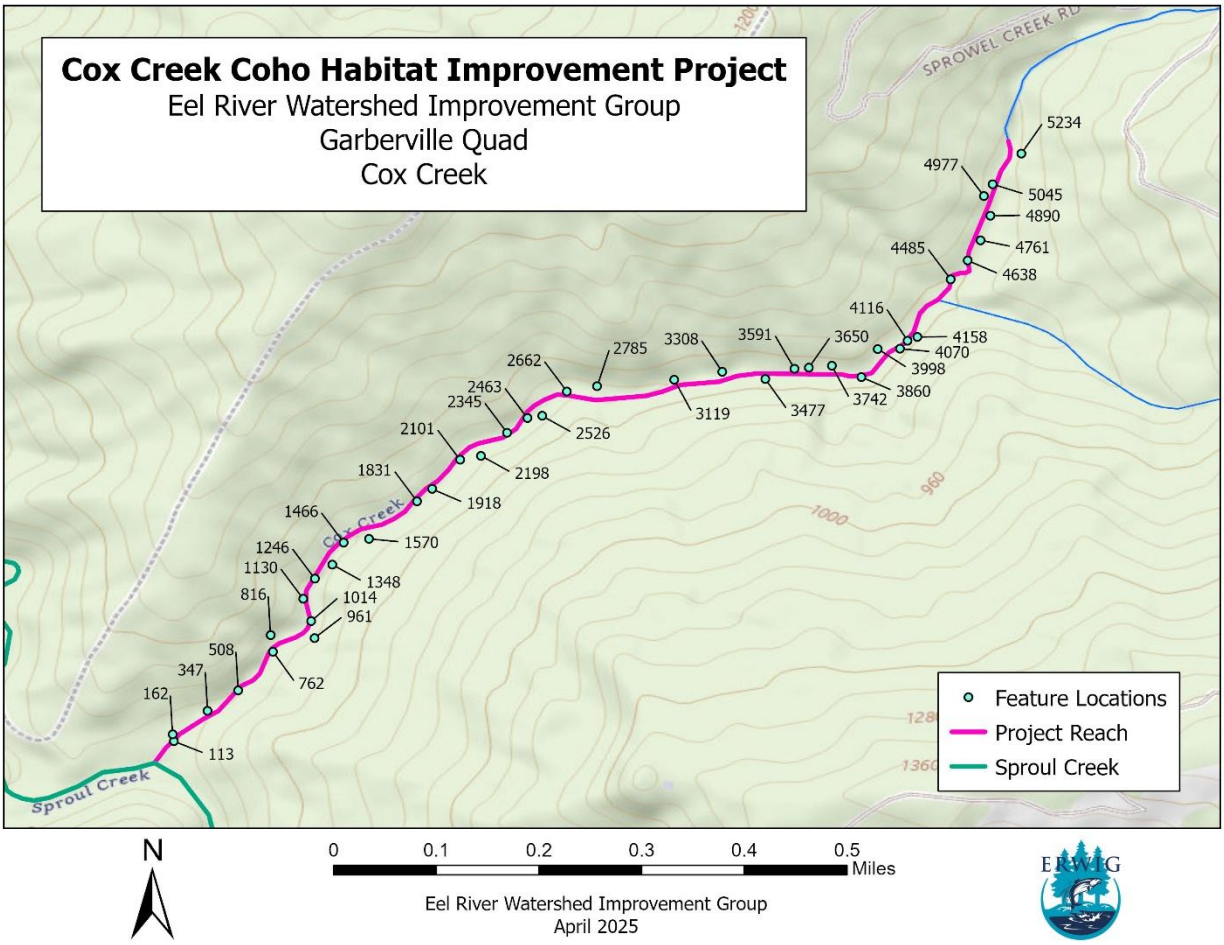
All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol.

During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual, 4th Edition (CA Restoration Manual)* or *other approved guidelines and manuals for salmon and steelhead habitat restoration*.

Planting of tree seedlings should take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings.


Cox Creek Coho Habitat Improvement Project
Watershed Map
Humboldt County
Redwood HWY
Somerville Creek
Little Sproul Creek
Rose Peak
Warden Creek
SPROWEL CREEK RD
Sproul Creek
La Doo Creek
West Fork Sproul Creek
Schofield Peak
FISH CANYON RD
OAK ROCK LN
Cox Creek
Durphy Creek
Hartsook Creek
MOODY RD
RANCH RD
DIMMICK RD
Jones Creek
MENDOCINO COUNTY
Eureka
King Range National Conservation Area
Project Reach
Cox Creek
Sproul Creek
South Fork Eel River
0 1 2 3 Miles
Eel River Watershed Improvement Group
April 2025
N
ERWIG


Cox Creek Coho Habitat Improvement Project
Eel River Watershed Improvement Group
Garberville Quad
Cox Creek
SPROWEL CREEK RD
Cox Creek
Sproul Creek
5234
4977
5045
4890
4485
4761
4638
4116
4158
4070
3998
3650
3591
3308
2785
2662
2463
2345
2526
3119
3477
3742
3860
2101
2198
1831
1918
1466
1570
1246
1348
1130
1014
816
961
508
762
347
162
113
Feature Locations
Project Reach
Sproul Creek
N
0
0.1
0.2
0.3
0.4
0.5
Miles
Eel River Watershed Improvement Group
April 2025
ERWIG

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ascaphus truei	Pacific tailed frog	AAABA01010	None	None	SSC
Rana aurora	northern red-legged frog	AAABH01021	None	None	SSC
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	AAABH01051	None	None	SSC
Rhyacotriton variegatus	southern torrent salamander	AAAAJ01020	None	None	SSC
Taricha rivularis	red-bellied newt	AAAAF02020	None	None	SSC
Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP | WL
Astur cooperii	Coopers hawk	ABNKC12040	None	None	WL
Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP
Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	-
Progne subis	purple martin	ABPAU01010	None	None	SSC
Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC
Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC
Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	-
Psiloscops flammeolus	flammulated owl	ABNSB01020	None	None	-
Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Empidonax traillii brewsteri	little willow flycatcher	ABPAE33041	None	Endangered	-
Pacifastacus leniusculus klamathensis	Klamath crayfish	ICMAL31042	None	None	-
Acipenser medirostris pop. 2	green sturgeon - northern DPS	AFCAA01032	None	None	SSC
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-
Oncorhynchus mykiss irideus pop. 48	steelhead - northern California DPS summer-run	AFCHA0213P	Threatened	Endangered	-
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	AFCHA0213Q	Threatened	None	SSC
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	SSC
Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-
Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC
Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-
Pekania pennanti	Fisher	AMAJF01020	None	None	SSC
Taxidea taxus	American badger	AMAJF04010	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Eumetopias jubatus	Steller sea lion	AMAJC03010	Delisted	None	-
Bassariscus astutus raptor	northern California ringtail	AMAJE01014	None	None	FP
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Myotis evotis	long-eared myotis	AMACC01070	None	None	-
Myotis thysanodes	fringed myotis	AMACC01090	None	None	-
Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-
Noyo intersessa	Ten Mile shoulderband	IMGASC5070	None	None	-
Anodonta californiensis	California floater	IMBIV04220	None	None	-
Anodonta oregonensis	Oregon floater	IMBIV04110	None	None	-
Actinemys marmorata	northwestern pond turtle	ARAAD02031	Proposed Threatened	None	SSC
Northern Interior Cypress Forest	Northern Interior Cypress Forest	CTT83220CA	None	None	-
Upland Douglas Fir Forest	Upland Douglas Fir Forest	CTT82420CA	None	None	-
Usnea longissima	Methuselahs beard lichen	NLLEC5P420	None	None	-
Lomatium engelmannii	Engelmanns lomatium	PDAPI1B0K0	None	None	-
Lomatium kogholiini	Wailaki lomatium	PDAPI1B310	None	None	-
Erigeron biolettii	streamside daisy	PDAST3M5H0	None	None	-
Erigeron robustior	robust daisy	PDAST3M134	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Hemizonia congesta ssp. tracyi	Tracys tarplant	PDAST4R067	None	None	-
Tracyina rostrata	beaked tracyina	PDAST9D010	None	None	-
Arabis mcdonaldiana	McDonalds rockcress	PDBRA06150	Endangered	Endangered	-
Howellia aquatilis	water howellia	PDCAM0A010	Delisted	None	-
Viburnum ellipticum	oval-leaved viburnum	PDCPR07080	None	None	-
Silene bolanderi	Bolanders catchfly	PDCAR0U2L0	None	None	-
Silene greenei ssp. angustifolia	Red Mountain catchfly	PDCAR0U0A2	None	Endangered	-
Sedum eastwoodiae	Red Mountain stonecrop	PDCRA0A0L1	None	None	-
Carex arcta	northern clustered sedge	PMCYP030X0	None	None	-
Arctostaphylos stanfordiana ssp. raichei	Raiches manzanita	PDERI041G2	None	None	-
Astragalus agnicidus	Humboldt County milk-vetch	PDFAB0F080	None	Endangered	-
Astragalus rattanii var. rattanii	Rattans milk-vetch	PDFAB0F7E2	None	None	-
Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-
Gentiana setigera	Mendocino gentian	PDGEN060S0	None	None	-
Ribes roezlii var. amictum	hoary gooseberry	PDGRO021B1	None	None	-
Lycopus uniflorus	northern bugleweed	PDLAM0X080	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Erythronium citrinum var. citrinum	lemon-colored fawn lily	PMLIL0U041	None	None	-
Erythronium oregonum	giant fawn lily	PMLIL0U0C0	None	None	-
Erythronium revolutum	coast fawn lily	PMLIL0U0F0	None	None	-
Lilium rubescens	redwood lily	PMLIL1A0N0	None	None	-
Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0	None	None	-
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	PDMAL110F9	None	None	-
Pityopus californicus	California pinefoot	PDMON05010	None	None	-
Montia howellii	Howells montia	PDPOR05070	None	None	-
Epilobium septentrionale	Humboldt County fuchsia	PDONA06110	None	None	-
Cypripedium californicum	California ladys-slipper	PMORC0Q040	None	None	-
Neottia cordata	heart-leaved twayblade	PMORC1N060	None	None	-
Platanthera ephemerantha	white-flowered rein orchid	PMORC1X050	None	None	-
Castilleja litoralis	Oregon coast paintbrush	PDSCR0D012	None	None	-
Castilleja mendocinensis	Mendocino Coast paintbrush	PDSCR0D3N0	None	None	-
Kopsiopsis hookeri	small groundcone	PDORO01010	None	None	-
Calamagrostis bolanderi	Bolanders reed grass	PMPOA17010	None	None	-
Calamagrostis foliosa	leafy reed grass	PMPOA170C0	None	Rare	-
Pleuropogon hooverianus	North Coast semaphore grass	PMPOA4Y070	None	Threatened	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-
Leptosiphon aureus	bristly leptosiphon	PDPLM09010	None	None	-
Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-
Leptosiphon rattanii	Rattans leptosiphon	PDPLM09110	None	None	-
Eriogonum kelloggii	Kelloggs buckwheat	PDPGN083A0	None	Endangered	-
Coptis laciniata	Oregon goldthread	PDRAN0A020	None	None	-
Ceanothus foliosus var. vineatus	Vine Hill ceanothus	PDRHA040D6	None	None	-
Ceanothus gloriosus var. exaltatus	glory brush	PDRHA040F4	None	None	-
Mitellastra caulescens	leafy-stemmed mitrewort	PDSAX0N020	None	None	-
Tiarella trifoliata var. trifoliata	trifoliate laceflower	PDSAX10031	None	None	-

Upper Durphy Crossing Barrier Removal
(Project ID: 1736340) 2026

Introduction:

The Eel River Watershed Improvement Group (ERWIG) (Grantee) will replace a culverted stream crossing on Durphy Creek with a channel-spanning bridge designed to provide year-round fish passage and restore natural channel processes. The project will reconnect more than 1.4 miles of upstream habitat while restoring sediment continuity, streamflow conveyance, and large wood transport through the project reach. The project is necessary because of the current culvert creates a temporal fish passage barrier to salmonid.

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual*, ***Volume I, Part IX and Volume II, Part XII.***

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The project is located on Durphy Creek approximately 850 feet from the confluence with the South Fork Eel River. The project is located on an unnamed road within Richardson Grove State Park.

Project central coordinates: 40.02082, -123.79387

Project Description:

This project will replace a culverted stream crossing on Durphy Creek that is a fish passage barrier. The culvert will be replaced by a free span bridge that will pass all salmonid life stages at all flows. There is approximately 1.4 miles of suitable habitat above this barrier that Coho Salmon, Chinook Salmon and Steelhead-

trout will have access to. This habitat is in Richardson Grove State Park and has year-round cold-water flow that is protected from development.

Materials:

Materials to be purchased by Applicant include tree protectors, native trees and plants.

Materials to be purchased by the Subcontractor are part of the construction of the bridge and include the bridge deck, rock, H-beams, bracing beams, railing, steel plates and bolts, electrical wire, water line, steel pipe, valves and other water infrastructure, mulch and seed.

Tasks, Deliverables, and Timelines:

All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window.

Task Name	Start Date	Activity Description	Deliverables
Task 1. Project Management and Administration	5/3/2027	Grantee will provide all contracting and administrative oversight pursuant to grant and regulatory guidelines. Grantee will track the project budget and develop and submit invoices to the grantor on a regular basis. In addition, the required annual report metrics will be generated and submitted to the CDFW Grant Manager each year.	1600 Permit - 5/1/2028, Executed Subcontracts - 6/1/2028, Access Agreements - 6/1/2028, Invoices - 7/1/2026, Progress Reports - With every invoice, Annual Report - Annually in November, Project Data - 3/01/2030, Draft Final Report - 3/11/2030, Final Report - 4/02/2030, Final Invoice - 5/17/2030
Task 2. CEQA Surveys and Reporting	5/3/2027	Pacific Watershed Associates will conduct a paleontological investigation of the project site. California State Parks (CSP) will conduct a botanical survey of the project site. Interim survey reports will be delivered to CDFW Grant Manager prior to receiving a Notice to Proceed.	Interim Survey Report for botany and paleontology - 6/1/2028, Final Survey Report for botany and paleontology - 2/28/2029
Task 3. Contractor Bidding	11/1/2027	Grantee will solicit bids for the construction contractor. A qualified contractor will be chosen based on their bid price and their qualifications.	Bid Notice: January 17, 2028 Bid Results: March 1, 2028
Task 4. Site Preparation	5/1/2028	GHD and Grantee will flag and stake sites for material delivery, bridge installation, and will designate staging areas for equipment and materials. Heavy equipment will be delivered by a lowboy to the staging area. Bridge will be delivered by truck. Rock will be delivered by a dump truck. Pre-project photos and metrics will be collected. Project materials will be procured. The California Conservation Corps (CCC) and CSP will remove invasive plants from the area to be excavated in order to prevent the spread of	Pre-project photos and metrics: 06/01/2028 Site flagging and staking: 07/01/2028

		invasives. To address concerns over invasive species, this project will follow the Grantee's Aquatic Invasive Species Decontamination Protocol which is in line with the CDFW Aquatic Invasive Species Decontamination Protocol.	
Task 5. Aquatic Species Relocation	6/15/2028	Block nets will be set up and fish will be removed from the section of stream that is to be de-watered using an e-fisher, operated by CSP/CDFW qualified staff. Relocated fish will be placed in suitable habitat upstream and/or downstream of the project site. Amphibians will be caught with a dip net and relocated upstream and/or downstream of the section of stream to be de-watered.	Aquatic species relocation data sheets: 7/14/2028
Task 6. Construction	7/10/2028	Construction Contractor (TBD) shall construct coffer dams upstream and downstream of the project work area and divert all flow from upstream of the upstream dam to downstream of the downstream dam. The coffer dams may be constructed with clean river gravel or sand bags, and may be sealed with sheet plastic. The suction end of the intake pipe shall be fitted with fish screens meeting CDFW and NOAA criteria to prevent entrainment or impingement of small fish. Any turbid water pumped from the work site itself to maintain it in a dewatered state shall be disposed of in an upland location where it will not drain directly into any stream channel. Sandbags and any sheet plastic shall be removed from the stream upon project completion. Clean river gravel may be left in the stream, but the coffer dams will be breached to return the stream flow to its natural channel. With guidance from GHD, CSP and Grantee, the Construction Contractor will begin bank and culvert excavation. Construction Contractor will disconnect utilities at the project site. The culvert will be removed and disposed by Construction Contractor. Construction contractor will purchase the bridge, install bridge supports and install the bridge according to engineered designs. Construction Contractor will be responsible for all concrete	Installed bridge: 10/31/2028 Water Quality Monitoring Report: 11/17/2028

		work, including the bridge deck, they will also be responsible for asphalt approaches, in channel rip-rap, railings, pile procurement and installation and all other aspects of bridge installation. Once the bridge is installed the construction contractor will reconnect the utilities, connect the road to the bridge with asphalt and install guard rails. GHD will hire a qualified Geotechnical subcontractor to conduct special inspections and to provide geotechnical consultation as necessary. Construction Contractor will employ erosion controls before significant rainfall and once work is complete. Grantee staff will monitor water quality as needed.	
Task 7. Planting	12/1/2029	Grantee and CSP will re-plant areas disturbed during construction activities. Approximately 400 native trees and plants will be planted and protected with anti-herbivory cages.	One hundred planted native trees and plants: March 30, 2029
Task 8. Monitoring	1/1/2029	Grantee will collect post project photos and metrics. GHD will conduct a survey to determine fish passage and draft as-builts.	Post project photos, metrics and a first winter observation memo. Fish passage memo, as-built designs. Due on 3/1/2030

Additional Requirements:

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured, including cultural and biological surveys. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife (CDFW).

No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the streambed and flood plain areas at the end of each workday.

All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol.

During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual, 4th Edition (CA Restoration Manual)* or *other approved guidelines and manuals for salmon and steelhead habitat restoration*.

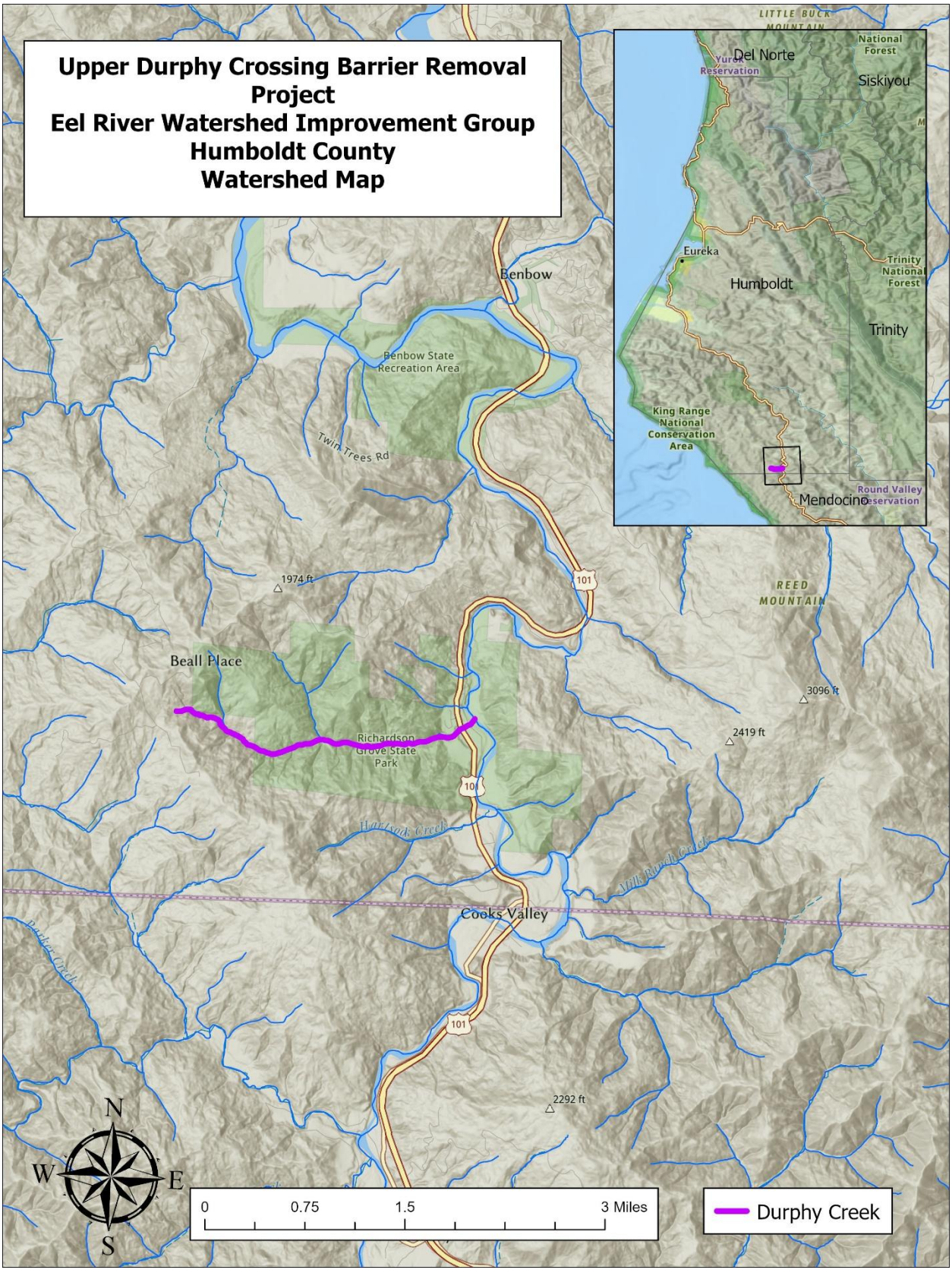
The Grantee shall notify CDFW at least five working days before the project site is de-watered and the stream flow diverted and submit a Water Quality Monitoring Plan and Dewatering Plan to CDFW for State Water Resources Control Board approval at least 30 days before the activity. The notification will provide a reasonable time for CDFW personnel to oversee the implementation of the water diversion plan and the safe removal and relocation of salmonids

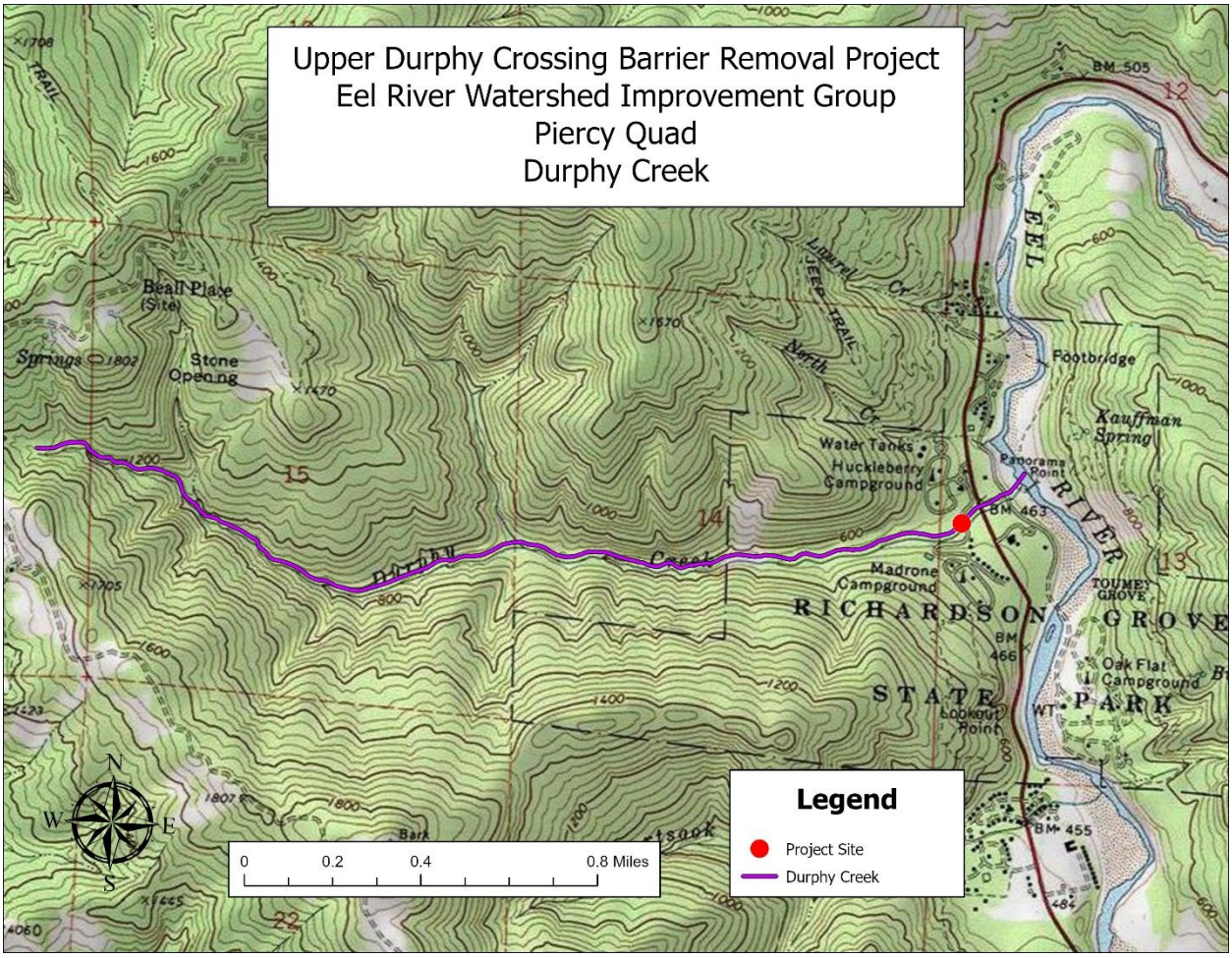
and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:

a. Fish dewatering and relocation activities shall only occur between June 15 and October 31 of each year.
b. Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.
c. The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the USACE Regional General Permit and National Marine Fisheries Service (NMFS) Biological Opinion.
d. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
e. USFWS Approved fisheries biologists will provide fish relocation data via the Grantee to the CDFW personnel on a form provided by CDFW.

The bridge (culvert) design and installation will meet flow carrying capacity required for a 100-year flood event as identified by specifications determined by National Oceanic and Atmospheric Administration (NOAA) Fisheries and the CDFW, for adult and juvenile salmonid fish passage. The project will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and criteria for fish passage as described in Volume II, Part IX, of the *California Salmonid Stream Habitat Restoration Manual*. The engineered plans for the bridge (culvert) installation shall be visually reviewed and authorized by NOAA Fisheries or CDFW engineers prior to commencement of work.

The Grantee/landowner will maintain the new crossing, inspect the crossing in a timely manner and remove debris as necessary during the storm season.


Upper Durphy Crossing Barrier Removal Project
Eel River Watershed Improvement Group
Humboldt County
Watershed Map
Del Norte
Siskiyou
Eureka
Humboldt
Trinity
Mendocino
Benbow
Benbow State Recreation Area
Twin Trees Rd
King Range National Conservation Area
1974 ft
REED MOUNTAIN
Beall Place
3096 ft
2419 ft
Richardson Grove State Park
101
Cooks Valley
2292 ft
N
W
E
S
0
0.75
1.5
3 Miles
Durphy Creek


Upper Durphy Crossing Barrier Removal Project
Eel River Watershed Improvement Group
Piercy Quad
Durphy Creek
Beall Place (Site)
Springs
Stone Opening
Durphy Creek
Water Tanks
Huckleberry Campground
Madrone Campground
Footbridge
Kauffman Spring
Panorama Point
BM 463
BM 505
BM 466
BM 455
RICHARDSON GROVE STATE PARK
TOUMEY GROVE
Oak Flat Campground
Lookout Point
EEL RIVER
N
S
E
W
0
0.2
0.4
0.8 Miles
Legend
Project Site
Durphy Creek

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ascaphus truei	Pacific tailed frog	AAABA01010	None	None	SSC
Rana aurora	northern red-legged frog	AAABH01021	None	None	SSC
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	AAABH01051	None	None	SSC
Rhyacotriton variegatus	southern torrent salamander	AAAAJ01020	None	None	SSC
Taricha rivularis	red-bellied newt	AAAAF02020	None	None	SSC
Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP | WL
Astur cooperii	Coopers hawk	ABNKC12040	None	None	WL
Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP
Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	-
Progne subis	purple martin	ABPAU01010	None	None	SSC
Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC
Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC
Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	-
Psiloscops flammeolus	flammulated owl	ABNSB01020	None	None	-
Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Empidonax traillii brewsteri	little willow flycatcher	ABPAE33041	None	Endangered	-
Pacifastacus leniusculus klamathensis	Klamath crayfish	ICMAL31042	None	None	-
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	AFCHA0213Q	Threatened	None	SSC
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	SSC
Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC
Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-
Pekania pennanti	Fisher	AMAJF01020	None	None	SSC
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Bassariscus astutus raptor	northern California ringtail	AMAJE01014	None	None	FP
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Myotis evotis	long-eared myotis	AMACC01070	None	None	-
Myotis thysanodes	fringed myotis	AMACC01090	None	None	-
Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-
Noyo intersessa	Ten Mile shoulderband	IMGASC5070	None	None	-
Anodonta californiensis	California floater	IMBIV04220	None	None	-
Anodonta oregonensis	Oregon floater	IMBIV04110	None	None	-
Actinemys marmorata	northwestern pond turtle	ARAAD02031	Proposed Threatened	None	SSC
Northern Interior Cypress Forest	Northern Interior Cypress Forest	CTT83220CA	None	None	-
Upland Douglas Fir Forest	Upland Douglas Fir Forest	CTT82420CA	None	None	-
Usnea longissima	Methuselahs beard lichen	NLLEC5P420	None	None	-
Lomatium engelmannii	Engelmanns lomatium	PDAPI1B0K0	None	None	-
Lomatium kogholiini	Wailaki lomatium	PDAPI1B310	None	None	-
Erigeron biolettii	streamside daisy	PDAST3M5H0	None	None	-
Erigeron robustior	robust daisy	PDAST3M134	None	None	-
Hemizonia congesta ssp. tracyi	Tracys tarplant	PDAST4R067	None	None	-
Tracyina rostrata	beaked tracyina	PDAST9D010	None	None	-
Arabis mcdonaldiana	McDonalds rockcress	PDBRA06150	Endangered	Endangered	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Howellia aquatilis	water howellia	PDCAM0A010	Delisted	None	-
Viburnum ellipticum	oval-leaved viburnum	PDCPR07080	None	None	-
Silene bolanderi	Bolanders catchfly	PDCAR0U2L0	None	None	-
Silene greenei ssp. angustifolia	Red Mountain catchfly	PDCAR0U0A2	None	Endangered	-
Sedum eastwoodiae	Red Mountain stonecrop	PDCRA0A0L1	None	None	-
Carex arcta	northern clustered sedge	PMCYP030X0	None	None	-
Arctostaphylos stanfordiana ssp. raichei	Raiches manzanita	PDERI041G2	None	None	-
Astragalus agnicidus	Humboldt County milk-vetch	PDFAB0F080	None	Endangered	-
Astragalus rattanii var. rattanii	Rattans milk-vetch	PDFAB0F7E2	None	None	-
Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-
Gentiana setigera	Mendocino gentian	PDGEN060S0	None	None	-
Ribes roezlii var. amictum	hoary gooseberry	PDGRO021B1	None	None	-
Lycopus uniflorus	northern bugleweed	PDLAM0X080	None	None	-
Erythronium citrinum var. citrinum	lemon-colored fawn lily	PMLIL0U041	None	None	-
Erythronium oregonum	giant fawn lily	PMLIL0U0C0	None	None	-
Erythronium revolutum	coast fawn lily	PMLIL0U0F0	None	None	-
Lilium rubescens	redwood lily	PMLIL1A0N0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0	None	None	-
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	PDMAL110F9	None	None	-
Pityopus californicus	California pinefoot	PDMON05010	None	None	-
Montia howellii	Howells montia	PDPOR05070	None	None	-
Epilobium septentrionale	Humboldt County fuchsia	PDONA06110	None	None	-
Cypripedium californicum	California ladys-slipper	PMORC0Q040	None	None	-
Neottia cordata	heart-leaved twayblade	PMORC1N060	None	None	-
Platanthera ephemerantha	white-flowered rein orchid	PMORC1X050	None	None	-
Castilleja litoralis	Oregon coast paintbrush	PDSCR0D012	None	None	-
Castilleja mendocinensis	Mendocino Coast paintbrush	PDSCR0D3N0	None	None	-
Kopsiopsis hookeri	small groundcone	PDORO01010	None	None	-
Calamagrostis bolanderi	Bolanders reed grass	PMPOA17010	None	None	-
Calamagrostis foliosa	leafy reed grass	PMPOA170C0	None	Rare	-
Pleuropogon hooverianus	North Coast semaphore grass	PMPOA4Y070	None	Threatened	-
Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-
Leptosiphon aureus	bristly leptosiphon	PDPLM09010	None	None	-
Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-
Leptosiphon rattanii	Rattans leptosiphon	PDPLM09110	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Eriogonum kelloggii	Kelloggs buckwheat	PDPGN083A0	None	Endangered	-
Coptis laciniata	Oregon goldthread	PDRAN0A020	None	None	-
Ceanothus foliosus var. vineatus	Vine Hill ceanothus	PDRHA040D6	None	None	-
Ceanothus gloriosus var. exaltatus	glory brush	PDRHA040F4	None	None	-
Mitellastra caulescens	leafy-stemmed mitrewort	PDSAX0N020	None	None	-
Tiarella trifoliata var. trifoliata	trifoliate laceflower	PDSAX10031	None	None	-

Priority Steelhead Barrier Designs in the SLO Creek Watershed
(Project ID: 1736341) 2026

Introduction:

The Priority Steelhead Barrier Designs in the San Luis Obispo Creek Watershed Project (Project) will plan a project to restore steelhead access to approximately two miles of cool perennial headwater habitat in upper Stenner Creek, a tributary to San Luis Obispo (SLO) Creek. The Project will develop alternatives and 30%, 65%, 90%, and 100% engineering designs for volitional fish passage improvements at two high priority barriers: the Cheda Diversion and the concrete apron beneath the Stenner Creek Road bridge, restoring connectivity to critical rearing and spawning habitat and improving steelhead resilience to climate change.

Creek Lands Conservation (Grantee) shall not proceed with on-the-ground implementation of the geotechnical investigation until all necessary permits, consultations, and/or Notices to Proceed are secured. The Project will be designed in a manner which follows techniques in the *California Salmonid Stream Habitat Restoration Manual* protocol XII. Fish Passage Design and Implementation.

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

Both barriers are located on Stenner Creek, an upper tributary of SLO Creek. The Cheda Diversion is approximately 2.5 miles upstream from the confluence with mainstem SLO Creek, and the Stenner Creek Road

bridge concrete apron barrier is located less than a quarter mile upstream of the Cheda Diversion. Both sites are situated along Stenner Creek Road in rural SLO County, approximately one mile north of the City of SLO.

The Cheda diversion is centered at approximately 35.323612, -120.677981 and the Stenner Creek Road Bridge site is centered at approximately 35.324429, -120.674965.

Project Description:

The Cheda Reservoir Diversion Dam is a concrete dam approximately 8 feet wide, with a partial wall and relic 12? curb on its river-left abutment. It was historically used to supply water to Cal Poly for agricultural use. The downstream side of the dam has a 45 degree inclined, 6' - 8' wide ramp which adjoins a small pool at its base. The ramp creates high-velocity, low-depth, sheet flow conditions which is the primary passage impediment at this site. The Cheda Diversion was assessed by the Land Conservancy of SLO in 2002 and listed in the PAD as a partial barrier (PAD ID: ‎700073). According to CDFW and USFWS (1999), the structure poses a velocity barrier during high flows and a shallow-water barrier during low flows. Recent visual assessments conducted in 2026 by both CDFW and local fisheries experts indicate that the structure likely functions as a total barrier and is a top priority for modification or removal in the watershed. Downstream of the diversion structure is a man-made boulder field which remains from a failed effort to restore passage at the location in the late 1990's to improve fish passage. The boulder field has created several drop locations which may additionally contribute to passage impediments for juvenile life-stages of steelhead.

The Stenner Creek Road Bridge is a metal span with concrete abutments and is managed by the County of SLO. The abutments are additionally protected by stone-masonry and sac-crete wall on both the left and right bank of the Stenner Creek channel. The bridge provides access to SLO County water supply infrastructure as well as Cal Poly rangeland and educational spaces. Additionally, the bridge supports the City of SLO water line. Below the bridge is a 6-12-inch thick concrete apron which covers an abandoned pipeline (to be confirmed abandoned in feasibility phase). The concrete apron has created a hydraulic drop approximately 24 inches tall into a 30-inch-deep pool. Some relic masonry debris is present on river-right. The concrete apron (PAD ID: 712031) was assessed by the CA Conservation Corps (CCC) in 2005 and was originally identified as a partial barrier for adult steelhead and a total barrier for juveniles. Since that assessment, the structure has further eroded and deteriorated. A Region 4 Barrier Assessment conducted by CDFW staff in May 2024 reassessed the barrier and determined that it functions as a total barrier, as it failed to meet jump height criteria for both adult and juvenile

steelhead under low- and high-flow passage conditions, and also did not meet depth criteria under low-flow conditions.

The Project follows an iterative, phased design approach that incorporates topographic surveys, hydrology/hydraulics, geotechnical, geomorphic, biological, cultural, and structural input into 30%, 65%, 90%, and 100% design, with landowner outreach and technical advisory committee feedback incorporated throughout. A phased, design-level geotechnical investigation will inform appropriate foundation conditions and confirm that removal of existing structures does not destabilize adjacent infrastructure, reducing the likelihood of future intervention.

Materials:

The Project includes the following materials that will be purchased or rented by Grantee: waders, printing, handheld GPS navigator, and flow meter. All other materials will be provided by subcontractors.

Tasks, Deliverables, and Timelines:

Below tasks, deliverables, and timelines have been proposed by the Grantee. CDFW may make modifications or additions to the table below.

Task Name	Start Date	Activity Description	Deliverables
Project Management and Administration	6/1/2027	Grantee will perform all project management and administration work, including but not limited to, management of project scope and budget, progress reports, invoices, annual report, executed subcontracts, project data, final report, and final invoicing.	Quarterly progress reports and invoices Annual reports (Feb 2028, Feb 2029) Final progress report (June 2030)
TAC and Landowner Outreach	6/1/2027	CLC will convene a Technical Advisory Committee (TAC) which will provide technical input throughout Project development. Activities include identifying and inviting TAC participants; scheduling and facilitating up to six (6)	Meeting summaries and copies of any materials developed for TAC and landowner outreach

		meetings; preparing agendas, presentation materials, and meeting summaries; coordinating review comments between Project partners, engineers, and agencies; and tracking action items to support timely project advancement. TAC members are anticipated to include CDFW, County of SLO, City of SLO, ytt Tribe, Coastal San Luis RCD, Trout Unlimited and Cal Poly. TAC meetings are anticipated at key project milestones (kickoff and existing conditions review, alternatives analysis, 30%, 65%, 90%, 100% designs review). To ensure long-term support for the project, CLC will conduct outreach to land owners adjacent to Cal Poly and the County public easement and along the road that may be temporarily closed during a future construction phase.	(included with Annual and Final Reports).
Non-Engineering Assessments	6/1/2027	Stillwater Sciences will prepare a Biological Resource Evaluation to inform the CEQA and the permitting strategy for this Project. A qualified archaeologist (TBD) who meets the Secretary of the Interior's Standards and Guidelines will prepare a cultural resources report that includes cultural, archaeological, and paleontological surveys. The archaeologist will also consult with and seek collaboration from ytt Tribe, who are culturally and traditionally affiliated with the Project area. CLC and the City of San Luis Obispo staff biologist will collect supplemental hydrologic and biotic data to inform permitting (e.g., Waters of the US) and engineering (e.g. typical low flows) listed in various subsequent tasks.	Biological Resources Evaluation - Feb 2029 Cultural Resources Report - Feb 2029

Permitting	6/1/2027	CLC, with support from Stillwater Sciences staff, will prepare and submit all documents necessary for regulatory permitting or approval of the Project.	Anticipated permits will be prepared and submitted by June 2030
Topographic Survey and Local Survey Control	8/1/2027	Stillwater will conduct topographic surveys of the Project site to support the Project planning, hydraulic modeling, and design phases of the Project.	Survey data will be integrated into engineering designs.
Hydrology and Hydraulics	10/1/2027	CLC will coordinate closely with Stillwater Sciences throughout the process by reviewing design deliverables and integrating technical feedback from the TAC to help refine and advance the preferred alternative toward a final design. The hydrology study will evaluate flood flows, seasonal base flows, and fish passage design flows. Stillwater will synthesize results from USGS streamstats as well as locally available gage data from San Luis Obispo County's lower Brizzolara Creek stream gage to determine recurrence interval flows for the Project reach. Stillwater and Creek Lands will utilize data from the Nature Conservancy's natural flows database (CEFWG 2021), a recent CDFW barrier assessment on Stenner Creek (Gard, 2024), as well as established percentages of 1- and 2-year RI flows (from flood flow analysis) to determine seasonal base flows, and fish passage design flows for juvenile and adult steelhead, following CDFW (2002) and NMFS (2023). These flows will be used to evaluate depth, velocity, jump heights (if any), and pool depth for proposed fish passage alternatives and to fine tune hydraulics for the preferred alternatives at each site throughout the design phases. Stillwater will build a 2D hydraulic model for the entire Project reach. The first milestone of this task is an existing	Hydrology and hydraulic modeling analysis will be described within the 30% basis of design report

		conditions model that will be calibrated to observed site conditions. Existing conditions model runs will be conducted for baseflows, fish passage design flows, and flood flows to evaluate and support refinement of the selected alternative design. These will be conducted in the existing conditions model, and for the proposed conditions model.	
Geotechnical Investigation	10/1/2027	After the Project team has selected a preferred alternative and project layout, the geotechnical subcontractor will perform a subsurface exploration program to prepare a design-level Geotechnical Report.	Preliminary (Phase 1) Geotechnical Report: Feb 2029 Design Level Geotechnical Report (Phase 2): Feb 2030
Structural Engineering	10/1/2027	The structural engineering subcontractor will conduct a phase 1 qualitative structural review of the impacts at each barrier site. The structural subcontractor will provide high-level, Rough Order of Magnitude (ROM) structural cost input for structural option comparison purposes. These phase 1 findings will be included in Stillwater's draft 30% designs. The structural engineer will also consider designs (if they are proposed) that include significant structural remediation and design: soldier pile or soil nail retaining walls along one bank (roadway side) at the Cheda site, and major structural strengthening or a complete replacement of the Green Bridge abutments.	Phase 1 finding will be included in 30% draft BOD report
Geomorphology and Alternatives Analysis	10/1/2027	Stillwater will summarize site observations and data related to existing creek geomorphology including long profile, creek channel sinuosity, mapping of pools, riffles, and runs, substrate size approximations, areas with recent and or ongoing erosion, deposition areas and approximate depth of sediment behind barriers, nickpoints (including existing barriers), and vertical adjustment potential (VAP) of proposed alternative options.	Conceptual Alternatives Report with Evaluation Matrix of 3 alternatives at each site: Feb 2029

		Stillwater will develop conceptual designs of three alternatives for each barrier. Conceptual alternatives will be evaluated to determine rough order of magnitude (ROM) cost estimates, as well as qualitative assessments for fish passage performance, risk to adjacent infrastructure and utilities, biological impacts during construction, and overall feasibility. This information will be summarized in a scoring matrix to support selection of a preferred alternative for each site by the TAC.	
30% Designs (PE)	4/1/2028	Once a preferred alternative is selected at each site, Stillwater Sciences will create design drawings, basis of design (BOD) report, and cost estimates for the 30% design level.	30% design plans: Feb 2029 Draft BOD report: Feb 2029
65% Designs	10/1/2028	Stillwater Sciences will refine the 30% design and expand the level of detail shown in the design drawings and BOD, to take the design to a 65% level. The design team will incorporate California Department of Fish and Wildlife and/or NOAA Fisheries (agency), TAC feedback, and other Stakeholder inputs to refine designs, and re-run hydraulic model simulations as needed.	65% design plans: June 2029 Draft BOD report: June 2029 Revised Draft Specifications: June 2029
90% Designs	4/1/2029	Based on the feedback received by the TAC from the 65% design plans, Stillwater will develop the 90% design plans and BOD.	90% draft final design plans: Jan 2030 Draft final BOD report: Jan 2030 Draft Final Specifications: Jan 2030
3.9:	10/1/2029	Based on the comments received from the 90% design plans and specifications, Stillwater will finalize the 100% design plans, BOD report, and construction specifications. A bid package will be prepared to support.	100% final design: June 2030 Final BOD report: June 2030 Final Specifications: June 2030 Bid Package - June 2030

Additional Requirements:

Geotechnical investigation start and end dates are at the discretion of CDFW.

No equipment maintenance will be performed within or near the stream where pollutants (such as petroleum products) from the equipment may enter the stream via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the stream (including floodplain areas) at the end of each workday. All trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly.


San Luis Obispo Creek Watershed Map
N
San Luis Obispo County
Upper Stenner
Cheda Diversion Dam
Stenner Creek Rd. Bridge
Middle Stenner
Lower Stenner
San Luis Obispo Creek
0 10 20 40 Miles
San Luis Obispo County
Esri, NASA, NGA, USGS, Esri, CGIAR, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Priority Steelhead Barrier Designs in the San Luis Obispo Creek Watershed
Creek Lands Conservation
USGS Quad: San Luis Obispo



California Department of Fish and Wildlife
California Natural Diversity Database Species Lists for 1736341 Priority Steelhead Barrier Designs in the SLO Creek Watershed

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Anaxyrus californicus	arroyo toad	AAABB01230	Endangered	None	SSC
Batrachoseps incognitus	San Simeon slender salamander	AAAAD02180	None	None	-
Batrachoseps minor	lesser slender salamander	AAAAD02170	None	None	SSC
Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC
Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC
Hesperoleucus venustus subditus	southern coastal roach	AFCJB19032	None	None	SSC
Gasterosteus aculeatus williamsoni	unarmored threespine stickleback	AFCPA03011	Endangered	Endangered	FP
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Oncorhynchus mykiss irideus pop. 9	steelhead - south-central California coast DPS	AFCHA0209H	Threatened	None	SSC
Bombus crotchii	Crotchs bumble bee	IIHYM24480	None	Candidate Endangered	-
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasiurus frantzii	western red bat	AMACC05080	None	None	SSC
Anniella pulchra	northern legless lizard	ARACC01020	None	None	SSC
Actinemys pallida	southwestern pond turtle	ARAAD02032	Proposed Threatened	None	SSC
Centromadia parryi ssp. congdonii	Congdons tarplant	PDAST4R0P1	None	None	-
Calochortus obispoensis	San Luis mariposa-lily	PMLIL0D110	None	None	-
Senecio aphanactis	chaparral ragwort	PDAST8H060	None	None	-
Chlorogalum pomeridianum var. minus	dwarf soaproot	PMLIL0G042	None	None	-
Chorizanthe breweri	Brewers spineflower	PDPGN04050	None	None	
Dudleya abramsii ssp. murina	mouse-gray dudleya	PDCRA04012	None	None	-
Dudleya blochmaniae ssp. blochmaniae	Blochmans dudleya	PDCRA04051	None	None	-

El Jaro Creek Cross Creek Ranch Fish Passage and Habitat Enhancement Project
(Project ID: 1736350) 2026

Introduction:

The Cachuma Operation and Maintenance Board (Grantee) will install an at-grade rock weir in El Jaro Creek washed out due to a drop in the downstream tailwater control, causing a headcut to move upstream and wash out of the pre-existing weir that created a 2+ foot jump (impediment) at the upstream weir. The at-grade weir needs to be rebuilt, a new weir added and tailwater control enforced to regain the stream profile. Rock slope protection, deflection barbs and planting terrace are needed to stabilize the downstream bank, reduce mass wasting and fine sediment delivery to the creek. This project is critical to the mission of CDFW and the Fisheries Restoration Grant Program to address rapidly declining populations of steelhead trout and deteriorating fish habitat in California.

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* (Volume 2, Section XII - Fish Passage Design and Implementation) and CDFW Fish Bulletin 183 - The Use of Log and Boulder Weirs in Stream Habitat Restoration.

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

El Jaro Creek (33 square miles) is a tributary to Salsipuedes Creek (52.4 square miles), which is a tributary to the Lower Santa Ynez River. Cross Creek Ranch on El Jaro Creek is located 4.82 miles south of the City of Lompoc on Hwy 1, or 0.75 miles upstream of the confluence of El Jaro Creek and Salsipuedes Creek. To

reach the project site from Santa Barbara, take US-101 north and exit on CA Highway 1 (PCH) toward Lompoc. In approximately 12.6 miles, turn left into the Cross Creek Ranch entrance (sign is visible from road).

Project central coordinates: 34.584007, -120.399580

Project Description:

COMB successfully completed the Cross Creek Fish Passage Improvement Project on El Jaro Creek in November of 2009. That project backwatered a historic low flow concrete stream crossing of El Jaro Creek with six boulder weirs to allow for full juvenile and adult fish passage. The most downstream boulder weir was an at-grade weir, which added stability to the downstream end of the project. The original project had been highly successful between WY2010-WY2023, with many documented spawning sites (small resident and large anadromous redds) found above the project site.

High stormflows between WY2023-2026 scoured the downstream tailwater control (locally referred to as the Boulder Garden) that resulted in a drop in the stream profile and head-cut that moved up into the project area, washed out the at-grade boulder weir, and left a two+ foot jump at the next weir upstream. That jump height is now out of compliance with NMFS and CDFW for their fish passage criteria and needs to be addressed by 1) rebuilding the at-grade boulder weir configured, 2) adding a new boulder weir just downstream to accommodate the elevation differential, and 3) reinforce the tailwater control within the downstream Boulder Garden to once again stabilize the downstream project invert and the designed stream profile for fish passage with jump heights that meet NMFS and CDFW criteria.

Not included in the 2009 project was stabilization of the western bank approximately 75 yards downstream of the end of the original project that has now severely eroded into the agricultural field causing significant bank failure by mass wasting and large amounts of fine sediment delivery to El Jaro Creek. This process has greatly accelerated since high streamflow events in WY2023 and WY2024. The stream is now running directly underneath a vertical 30-foot-high wall of fine alluvial sediments. Since 2000, approximately 80 feet of the agricultural field has been lost due to the stream undercutting the bank and subsequent mass wasting. The second part of the proposed El Jaro Creek Fish Passage and Habitat Enhancement Project will be to install approximately 200 feet of rock slope protection (RSP) at least 20 feet in front of the toe of slope with three short rock barbes (two buried and one exposed) to deflect streamflow away from the bank. These rock barbes will be designed at an angle to the upstream alignment

between 50 and 80 degrees to redirect flow without creating additional scour and are meant to protect the bank without confining the channel. A willow planting terrace behind the RSP will be constructed to provide structural and bioengineering stability. Approximately 400 feet of channel realignment at the bottom half of the project will be needed to slightly move the channel to the southeast and away from the eroding bank. Excavated materials from the new channel will be used to fill the existing channel and area behind the RSP within the willow planting terrace. Any additional fill material will be obtained from the agricultural field where the landowner has stockpiled clean local dirt (no concrete, asphalt or weed seed).

Materials:

- Large Excavator
- Mini Excavator
- Front Loader
- Dump Truck
- Large Rock (made up of material with a D 50 of 3.5 feet from the landowner) for rock slope protection
- Dewatering System (described in in the project designs and Dewatering Plan that are included in the Supplementary Documentation)
- Native Dirt (currently staged upslope on the western bank by the landowner)
- Willow stakes
- No materials will be removed from the site, only repositioned

Tasks, Deliverables, and Timelines:

All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window.

Task Name	Start Date	Activity Description	Deliverables
Task #1: Project Management and Administration	5/3/2027	The COMB Project Manager and Administration Manager will work together to manage all aspects of the project for both the grant and construction contracts. These tasks will include administrating the grant contract, construction subcontractor contract, legal fees to review all contracts and permits, accounting of all funds for the project both received and payments to subcontractors and COMB cost share, COMB staff salaries plus benefits, project audits as needed for both State and Federal, general liability and property insurance, vehicle usage, miscellaneous project expenses, and overhead.	Quarterly Invoices and Progress Reports; Annual Reports; Final Project Report; Final Invoice; Copies of Permits and Landowner Use Access Documentation; Executed Subcontractor Contracts; Submit Data Management Plan; Submit Project Data.
Task #2: Permitting	5/3/2027	COMB Project Manager will author, submit, pay permit fees and administer all project permits (if not provided by FRGP). This will include a CDFW 1600 Permit, RWQCB 401 Permit, USACE 404 Permit, Section 106 consultation, tribal consultation, ESA compliance, CESA compliance, NEPA and CEQA compliance and informal consultation with USFWS. COMB will coordinate with permit administrators prior, during and after the project has been completed.	All applicable permits for the project
Task #3: Environmental Compliance	06/01/2027	COMB staff will prepare the Water Quality Monitoring Plan and Dewatering Plan along with documenting water quality throughout the duration of the project.	Water Quality Monitoring Plan and Dewatering Plan; Water Quality

		The biological monitors from COMB will provide resource survey documentation and provide a biological monitoring report.	Documentation; Resource Survey Documentation; Biological Monitoring Report
Task #4: Final Engineering Designs	06/01/2027	The Project Engineers from HDR will provide the 100% Final Designs of the Project for CDFW engineers to review prior to implementation.	100% Construction Ready Plans
Task #5: Construction Management	06/01/2027	COMB staff with their project engineers will prepare the bid documents for a competitive bid process, advertise for the construction project, and award a contract to a qualified California licensed subcontractor with extensive experience in creek restoration and fish passage work in Santa Barbara County that has worked in NOAA designated critical habitat streams for the recovery of the endangered Southern California steelhead. COMB Project Manager will conduct a Pre-Bid Meeting on site to describe the project and answer any questions about the requested effort and bid packet materials for all bidding construction subcontractors. This is a requirement to submit a bid. COMB Project Manager will compile all Construction Meeting Notes and Documentation.	Bid Package Documents; Pre-Bid Meeting Notes; Pre-Construction Meeting Notes; Construction Documentation
Task #6: Implementation and Construction	09/01/2027	The Project Engineers from HDR will respond to all construction contractor requests for information (RFIs). At least one HDR Project Engineer will also review and respond to any Change Order requests that will be reviewed and approved by the COMB Project Manager. Finally, they will produce Record (As-Built)	As-Built Survey Drawings; Engineering Approval Reports & Submittals; Revegetation Plan; Monitoring Report; Before and After Project

		Drawings for project documentation and reporting. COMB Project Manager will provide a Revegetation Plan and Monitoring Report and include before and after project implementation photo documentation at the completion of the project. As part of this, the following construction activities will be undertaken: Biological surveys and species relocation as needed, Cultural Monitoring during earth work activities, Mobilization, Erosion control, Rebuild the At-Grade Boulder Weir and Construct One New Boulder Weir, Construct Two Pools Downstream of Each Boulder Weir, Reinforce the Boulder Garden to Better Establish the Tailwater Control, Construct 200 Feet of Rock Slope Protection at the Toe of Slope of Western Bank, Install Three Rock Barbs,	Implementation Photo Documentation

		Construct the Willow Planting Terrace, Vegetate the Willow Planting Terrace, Realign the Stream Channel Downstream of the Boulder Garden, Revegetation of the Stream Banks and Top of Failing Bank (as needed), Site Clean-up and Demobilization	

Additional Requirements:

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured, including cultural and biological surveys. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife (CDFW).

No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the streambed and flood plain areas at the end of each workday.

All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol.

During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual, 4th Edition (CA Restoration Manual)* or *other approved guidelines and manuals for salmon and steelhead habitat restoration*.

The Grantee shall notify CDFW at least five working days before the project site is de-watered and the stream flow diverted and submit a Water Quality Monitoring Plan and Dewatering Plan to CDFW for State Water Resources Control Board approval at least 30 days before the activity. The notification will provide a reasonable time for CDFW personnel to oversee the implementation of the water diversion plan and the safe removal and relocation of salmonids

and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:

a. Fish dewatering and relocation activities shall only occur between June 15 and October 31 of each year.

b. Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.

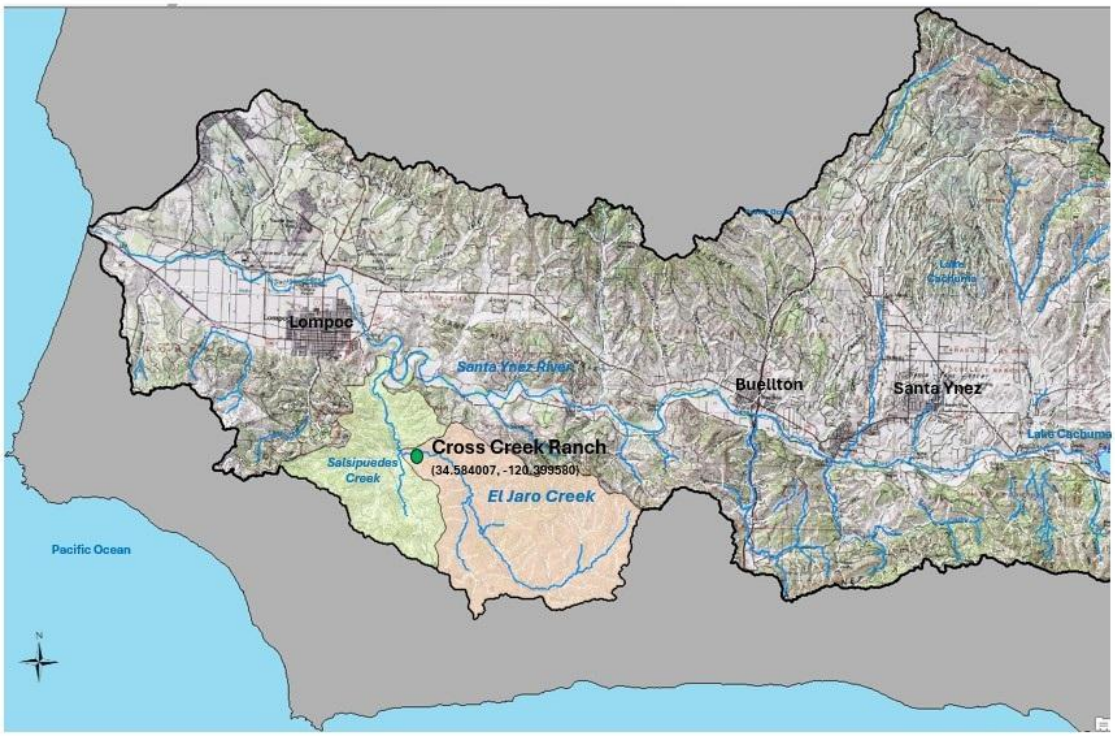
c. The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the USACE Regional General Permit and National Marine Fisheries Service (NMFS) Biological Opinion.

d. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.

e. USFWS Approved fisheries biologists will provide fish relocation data via the Grantee to the CDFW personnel on a form provided by CDFW.

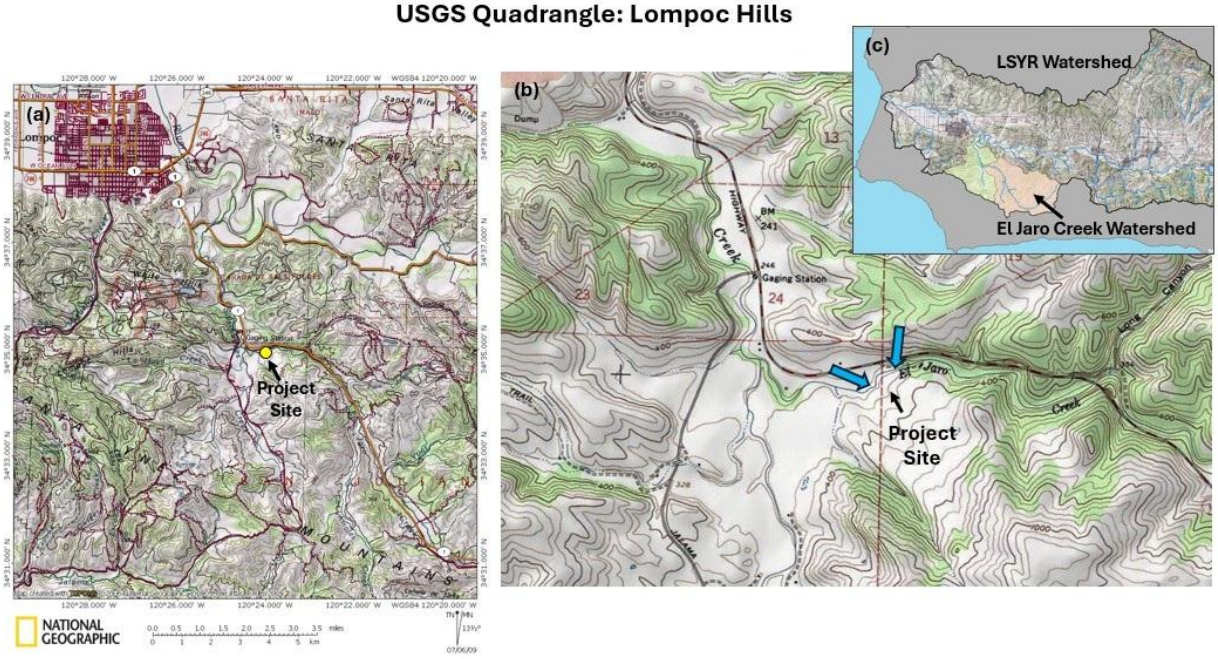
Final structure design and placement will be determined by field consultation between the Grantee and the CDFW Personnel.

El Jaro Creek Cross Creek Ranch Fish Passage and Habitat Enhancement Project (COMB) - Location within the LSYR Watershed



Project location (34.584007, -120.399580) within the LSYR Watershed.

El Jaro Creek Cross Creek Ranch Fish Passage and Habitat Enhancement Project (COMB) USGS Quadrangle: Lompoc Hills



USGS topographic maps of the project(a) site and project (b) extent marked with blue arrows with an (c) insert of the LSYR, El Jaro Creek and Salsipuedes Creek watersheds.

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ambystoma californiense pop. 2	California tiger salamander - Santa Barbara County DPS	AAAAA01182	Endangered	Threatened	WL
Batrachoseps wakei	Arguello slender salamander	AAAAD02230	None	None	-
Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC
Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC
Spea hammondii	western spadefoot	AAABF02020	Proposed Threatened	None	SSC
Accipiter striatus	sharp-shinned hawk	ABNKC12020	None	None	WL
Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP | WL
Astur cooperii	Coopers hawk	ABNKC12040	None	None	WL
Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL
Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP
Eremophila alpestris actia	California horned lark	ABPAT02011	None	None	WL
Cerorhinca monocerata	rhinoceros auklet	ABNNN11010	None	None	WL
Ptychoramphus aleuticus	Cassins auklet	ABNNN08010	None	None	SSC
Branta bernicla	brant	ABNJB05010	None	None	SSC
Ardea alba	great egret	ABNGA04040	None	None	-
Ardea herodias	great blue heron	ABNGA04010	None	None	-
Anarhynchus montanus	mountain plover	ABNNB03100	None	None	SSC
Anarhynchus nivosus nivosus	western snowy plover	ABNNB03031	Threatened	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	-
Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	-
Gavia immer	common loon	ABNBA01030	None	None	SSC
Hydrobates homochroa	ashy storm-petrel	ABNDC04030	None	None	SSC
Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC
Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC
Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC
Hydroprogne caspia	Caspian tern	ABNNM08020	None	None	-
Larus californicus	California gull	ABNNM03110	None	None	WL
Sternula antillarum browni	California least tern	ABNNM08103	Endangered	Endangered	FP
Thalasseus elegans	elegant tern	ABNNM08040	None	None	WL
Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	ABPBX91091	None	None	WL
Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC
Artemisiospiza belli belli	Bells sparrow	ABPBX97021	None	None	WL
Passerculus sandwichensis beldingi	Beldings savannah sparrow	ABPBX99015	None	Endangered	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	-
Nannopterum auritum	double-crested cormorant	ABNFD01020	None	None	WL
Athene cunicularia	burrowing owl	ABNSB10010	None	Candidate Endangered	SSC
Plegadis chihi	white-faced ibis	ABNGE02020	None	None	WL
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC
Empidonax traillii brewsteri	little willow flycatcher	ABPAE33041	None	Endangered	-
Empidonax traillii extimus	southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	-
Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-
Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-
Gila orcuttii	arroyo chub	AFCJB13120	None	None	SSC
Gasterosteus aculeatus williamsoni	unarmored threespine stickleback	AFCPA03011	Endangered	Endangered	FP
Eucyclogobius newberryi	tidewater goby	AFCQN04010	Endangered	None	SSC
Oncorhynchus mykiss irideus pop. 10	steelhead - southern California DPS	AFCHA0209J	Endangered	Endangered	-
Trimerotropis occulens	Lompoc grasshopper	IIORT36310	None	None	-
Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-
Bombus crotchii	Crotchs bumble bee	IIHYM24480	None	Candidate Endangered	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Lichnanthe albipilosa	white sand bear scarab beetle	IICOL67010	None	None	-
Euphilotes allyni	El Segundo blue butterfly	IILEPG201B	Endangered	None	-
Icaricia icarioides moroensis	Morro Bay blue butterfly	IILEPG801B	None	None	-
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	Proposed Threatened	None	-
Ammopelmatus muwu	Point Conception jerusalem cricket	IIORT25020	None	None	-
Puma concolor pop. 2	mountain lion - central coast & southern California DPS	AMAJH04016	None	Threatened	-
Neotoma lepida intermedia	San Diego desert woodrat	AMAFF08041	None	None	-
Dipodomys heermanni arenae	Lompoc kangaroo rat	AMAFD03064	None	None	-
Eumops perotis californicus	western mastiff bat	AMACD02011	None	None	SSC
Enhydra lutris nereis	southern sea otter	AMAJF09012	Threatened	None	FP
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Lasiurus frantzii	western red bat	AMACC05080	None	None	SSC
Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-
Anniella pulchra	northern legless lizard	ARACC01020	None	None	SSC
Salvadora hexalepis virgultea	coast patch-nosed snake	ARADB30033	None	None	SSC
Actinemys pallida	southwestern pond turtle	ARAAD02032	Proposed Threatened	None	SSC
Thamnophis hammondii	two-striped gartersnake	ARADB36160	None	None	SSC
Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC
Southern California Coastal Lagoon	Southern California Coastal Lagoon	CALE1220CA	None	None	-
Southern California Steelhead Stream	Southern California Steelhead Stream	CARE2310CA	None	None	-
Central Coast Arroyo Willow Riparian Forest	Central Coast Arroyo Willow Riparian Forest	CTT61230CA	None	None	-
Central Dune Scrub	Central Dune Scrub	CTT21320CA	None	None	-
Central Foredunes	Central Foredunes	CTT21220CA	None	None	-
Central Maritime Chaparral	Central Maritime Chaparral	CTT37C20CA	None	None	-
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	-
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	CTT52110CA	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	-
Southern Vernal Pool	Southern Vernal Pool	CTT44300CA	None	None	-
Southern Willow Scrub	Southern Willow Scrub	CTT63320CA	None	None	-
Texosporium sancti-jacobi	woven-spored lichen	NLTEST7980	None	None	-
Sanicula hoffmannii	Hoffmanns sanicle	PDAPI1Z090	None	None	-
Ancistrocarphus keilii	Santa Ynez groundstar	PDASTD5020	None	None	-
Cirsium rhothophilum	surf thistle	PDAST2E2J0	None	Threatened	-
Cirsium scariosum var. loncholepis	La Graciosa thistle	PDAST2E1N0	Endangered	Threatened	-
Deinandra increscens ssp. villosa	Gaviota tarplant	PDAST4R0U3	Endangered	Endangered	-
Deinandra paniculata	paniculate tarplant	PDAST4R0Y0	None	None	-
Erigeron blochmaniae	Blochmans leafy daisy	PDAST3M5J0	None	None	-
Erigeron sanctarum	saints daisy	PDAST3M3R0	None	None	-
Lasthenia glabrata ssp. coulteri	Coulters goldfields	PDAST5L0A1	None	None	-
Layia carnosa	beach layia	PDAST5N010	Threatened	Endangered	-
Layia erubescens	blushing layia	PDAST5N0H0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Layia heterotricha	pale-yellow layia	PDAST5N070	None	None	-
Lessingia tenuis	spring lessingia	PDAST5S0B0	None	None	-
Malacothrix incana	dunedelion	PDAST66070	None	None	-
Malacothrix saxatilis var. saxatilis	cliff malacothrix	PDAST660C5	None	None	-
Senecio aphanactis	chaparral ragwort	PDAST8H060	None	None	-
Senecio blochmaniae	Blochmans ragwort	PDAST8H0G0	None	None	-
Dithyrea maritima	beach spectaclepod	PDBRA10020	None	Threatened	-
Erysimum capitatum var. lompocense	San Luis Obispo wallflower	PDBRA16057	None	None	-
Erysimum suffrutescens	suffrutescent wallflower	PDBRA160D2	None	None	-
Lepidium virginicum var. robinsonii	Robinsons pepper-grass	PDBRA1M114	None	None	-
Lonicera subspicata var. subspicata	Santa Barbara honeysuckle	PDCPR030R3	None	None	-
Atriplex coulteri	Coulters saltbush	PDCHE040E0	None	None	-
Atriplex pacifica	south coast saltscale	PDCHE041C0	None	None	-
Chenopodium littoreum	coastal goosefoot	PDCHE091Z0	None	None	-
Suaeda taxifolia	woolly seablite	PDCHE0P0L0	None	None	-
Cuscuta pacifica var. papillata	Mendocino dodder	PDCUS011A2	None	None	-
Dichondra occidentalis	western dichondra	PDCON08060	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Dudleya blochmaniae ssp. blochmaniae	Blochmans dudleya	PDCRA04051	None	None	-
Cladium californicum	California saw-grass	PMCYP04010	None	None	-
Arctostaphylos crustacea ssp. eastwoodiana	Eastwoods brittle-leaf manzanita	PDERI041H4	None	None	-
Arctostaphylos crustacea ssp. subcordata	Santa Cruz Island manzanita	PDERI041H7	None	None	-
Arctostaphylos purissima	La Purisima manzanita	PDERI041A0	None	None	-
Arctostaphylos refugioensis	Refugio manzanita	PDERI041B0	None	None	-
Arctostaphylos rudis	sand mesa manzanita	PDERI043E0	None	None	-
Astragalus didymocarpus var. milesianus	Miles milk-vetch	PDFAB0F2X3	None	None	-
Astragalus nuttallii var. nuttallii	ocean bluff milk-vetch	PDFAB0F641	None	None	-
Ribes amarum var. hoffmannii	Hoffmanns bitter gooseberry	PDGRO02012	None	None	-
Phacelia hubbyi	Hubbys phacelia	PDHYD0C0R4	None	None	-
Juglans californica	southern California black walnut	PDJUG02020	None	None	-
Juncus acutus ssp. leopoldii	southwestern spiny rush	PMJUN01051	None	None	-
Monardella hypoleuca ssp. hypoleuca	white-veined monardella	PDLAM180A5	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Monardella sinuata ssp. sinuata	southern curly-leaved monardella	PDLAM18161	None	None	-
Monardella undulata ssp. arguelloensis	Point Arguello monardella	PDLAM18151	None	None	-
Monardella undulata ssp. crispa	crisp monardella	PDLAM18070	None	None	-
Monardella undulata ssp. undulata	San Luis Obispo monardella	PDLAM180X0	None	None	-
Calochortus fimbriatus	late-flowered mariposa-lily	PMLIL0D1J2	None	None	-
Lilium humboldtii ssp. humboldtii	Humboldt lily	PMLIL1A071	None	None	-
Lilium humboldtii ssp. ocellatum	ocellated humboldt lily	PMLIL1A072	None	None	-
Malacothamnus eastwoodiae	Alices lovely bushmallow	PDMAL0Q0Q0	None	None	-
Calandrinia breweri	Brewers calandrinia	PDPOR01020	None	None	-
Eriodictyon capitatum	Lompoc yerba santa	PDHYD04040	Endangered	Rare	-
Abronia maritima	red sand-verbena	PDNYC010E0	None	None	-
Ophioglossum californicum	California adders-tongue	PPOPH020G0	None	None	-
Cordylanthus rigidus ssp. littoralis	seaside birds-beak	PDSCR0J0P2	None	Endangered	-
Diplacus aridus	low bush monkeyflower	PDSCR22040	None	None	-
Diplacus vandenbergensis	Vandenberg monkeyflower	PDSCR1B381	Endangered	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Agrostis hooveri	Hoovers bent grass	PMPOA040M0	None	None	-
Muhlenbergia utilis	aparejo grass	PMPOA481X0	None	None	-
Rhinotropis cornuta var. fishiae	Fishs milkwort	PDPGL020B2	None	None	-
Chorizanthe palmeri	Palmers spineflower	PDPGN040H0	None	None	-
Eriogonum elegans	elegant wild buckwheat	PDPGN081Y0	None	None	-
Mucronea californica	California spineflower	PDPGN0F010	None	None	-
Delphinium parryi ssp. blochmaniae	dune larkspur	PDRAN0B1B1	None	None	-
Delphinium umbraculorum	umbrella larkspur	PDRAN0B1W0	None	None	-
Ceanothus cuneatus var. fascicularis	Lompoc ceanothus	PDRHA04066	None	None	-
Ceanothus impressus var. impressus	Santa Barbara ceanothus	PDRHA040L1	None	None	-
Cercocarpus betuloides var. blancheae	island mountain-mahogany	PDROS08022	None	None	-
Horkelia cuneata var. puberula	mesa horkelia	PDROS0W045	None	None	-
Horkelia cuneata var. sericea	Kelloggs horkelia	PDROS0W043	None	None	-
Prunus fasciculata var. punctata	sand almond	PDROS1C0E2	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Galium cliftonsmithii	Santa Barbara bedstraw	PDRUB0N0J0	None	None	-
Scrophularia atrata	black-flowered figwort	PDSCR1S010	None	None	-
Pelazoneuron puberulum var. sonorense	Sonoran maiden fern	PPTHE05192	None	None	-

Maria Ygnacio Creek Fish Passage Implementation-Hollister Ave Bike Path

(Project ID: 1736351) 2026

Introduction:

The Earth Island Institute (Grantee) will finalize the existing 100% Administrative Engineering Designs to the 100% Final Engineering Designs, and obtain all environmental review/permits and implement the physical instream restoration of the barrier at the Hollister Bridge Bike Path. The project is located between 2 other fish passage barriers funded by FRGP for implementation in 2025 and 2026. Project provides total connectivity for fish in lower Maria Ygnacio creek and access to 0.45 miles of habitat. This project is critical to the mission of CDFW and the Fisheries Restoration Grant Program to address rapidly declining populations of steelhead trout and deteriorating fish habitat in California.

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* (Volume 2, Section XII- Fish Passage Design and Implementation).

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The Hollister Avenue Bridge Bike Path crossing is located on Maria Ygnacio Creek approximately 2.1 miles upstream of the Pacific Ocean. The creek flows under Hollister Ave bridge, an urban avenue in the County of Santa Barbara and the City of Goleta, California. The bridge was constructed in 1963 by the Santa Barbara County Department of Public Works. A heavily used bike path crosses Maria Ygnacio creek below the bridge. Stream flows beneath the bike path are confined to a small concrete box culvert (4 feet wide by 3.5 feet tall). The channel

immediately upstream and downstream of the box culvert is lined with grouted concrete rubble and boulders until the channel exits the overhead bridge deck and transitions to a natural streambed. Project is located 0.75 miles upstream of the former Patterson Ave fish passage barrier, and 0.5 miles downstream of the UPRR barrier (proposed for implementation summer 2026).

Project central coordinates: 34.43494, -119.80691

Project Description:

The goal of the proposed project aims to restore fish passage at the Hollister Avenue Bridge Bike Path barrier on Maria Ygnacio Creek by implementing a hydrologically engineered solution that maintains structural integrity of the existing bridge and improves bike path safety while enabling fish migration at all life stages. Specifically, the project will advance the current 100% administrative engineering designs to finalized, stamped construction-ready plans and obtain all necessary environmental and construction permits. Additionally, SCHR will hire a qualified general excavating contractor to perform the physical restoration work which will include widening the concrete channel and installing 12 subsurface concrete sediment retention baffles to mimic a natural streambed, reduce flow velocity, and increase streamflow depth to promote fish passage. This effort is strategically located between two other FRGP-funded fish passage projects, creating critical connectivity within the lower watershed while advancing upstream passage to higher quality habitat.

The project as proposed will complete three measurable objectives: (1) finalizing engineering plans in collaboration with NOAA and CDFW engineering staff, targeted for completion by May 2027, (2) obtain environmental review and permits (including local permits - i.e. land use, encroachment, grading, building), CDFW clearance through the HREA permitting pathway, and utilizing the regulatory clearances under FRGP programmatic pathways for all other permits, and (3) the physical instream construction of the fish passage project. Once constructed, this project will reconnect 0.45 miles of upstream habitat to the next total migration barriers, contributing to a broader regional effort led by SCHR and partners to restore fish passage throughout Maria Ygnacio Creek. To date, four barriers have been removed in the upper watershed, and the lowest most barrier below the project proposed was remediated in summer 2025. Because the proposed project is the second lowest most barrier in the watershed, providing fish passage here is critical for actualizing the project successes of those barriers already removed and the third lowest barrier proposed for removal summer 2026.

Materials:

All construction materials will be purchased by the hired qualified general excavating contractor. Materials to be purchased by contractor include:

Concrete and rebar - for the new widened hydrologically engineered creek

Precast voided slab girders - for the newly aligned bike path

Concrete Rock Slope Protection - for connecting the new hydrologically engineered creek into the bridge abutments

Rock/dirt mixture - for the engineered streambed material in the new channel

Tasks, Deliverables, and Timelines:

All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window.

Task Name	Start Date	Activity Description	Deliverables
Task #1: Project Management and Administration	3/1/2027	SCHR will manage the designs, bidding, construction, contractors, budgets, timelines as well as community outreach with this project. The Director and Grants Administrator will oversee contractor procurement, payments, invoicing, and grant reporting for project. The Director and Senior Project Manager will be involved with the day-to-day project management, partner and landowner communication, contractor oversight, all necessary monitoring/reporting and data collection/submission.	Quarterly Invoices and Progress Reports; Annual Reports; Draft Final Report, Final Project Report, and Final Invoice; Copies of Permits and Landowner Use Access Documentation; Executed Sub-contractor Contracts; Submit Data Management Plan; Submit Project Data to proper repositories
Task #2: Finalizing Engineering Designs	3/1/2027	Waterways Consulting, Inc will finalize the existing 100% Administrative Fish Passage Designs to the stamped 100% Final Construction Ready Design Level. This will entail a final review of plans from CDFW and NOAA for approval as well as local jurisdiction review. Waterways will address any comments and finalize the plans. Plans will be stamped and shared with contractor during bid processes and construction. Waterways Consulting Inc will also produce a comprehensive bid package to be shared with prospective contractors invited to bid on the implementation portion of the project.	100% Construction Ready Engineering Plans; Project Bid Package
Task #3: Permitting	3/1/2027	SCHR will work with the applicable agencies to obtain environmental clearances and secure all necessary permits. It is anticipated the project will require local jurisdiction permits (i.e. grading, building, land use and encroachment	All Applicable Local Jurisdiction Permits; All Applicable agency permits

		permit). The project will also require permits from CDFW, and it is anticipated the project will use the HREA permitting pathway to secure coverage. This task will be implemented as soon as the grant agreement is signed so that construction can begin the summer immediately after a grant agreement is in place, ideally summer 2027. SCHR does not anticipate delays in securing permits for this project. SCHR will utilize CDFW's FRGP programmatic permits for all other permits and clearances including the programmatic Water Board 401, Army Corp 404, NFMS Biological Opinion, USFWS Biological Opinion, and CEQA MND.	
Task #4: Implementation and Construction	8/1/2027	Project is being planned to begin construction during the 2027 construction season (between the months of August and December). Work will take place during the dry season in order to minimize any impacts to stream resources. Prior to construction, SCHR will work with CDFW to perform sensitive species surveys and relocation as needed. Additionally, SCHR will work with the Santa Ynez Band of Chumash Indians to hire a cultural monitor for the project to observe construction during earth moving activities. After pre-project surveys are completed, a hired qualified general excavation contractor will construct the project as designed under supervision of the principal engineer. As part of this, the following construction activities will be undertaken: Biological surveys and species relocation as needed, Cultural Monitoring during earth work activities,	As-Built Survey Drawings; Appropriate Engineering Approval Reports and Submittals; Before and After Project Implementation Photo Documentation

		Demolition, Dewatering (if needed), Excavation, Soil haul off and Disposal, Construction of Concrete Headwalls, Widening of Concrete Channel, Construction of Sediment Retention Baffles, Construction of Engineered Stream Bed Material on top of Sediment Retention Baffles, Installation of new Bike Crossing, Concrete Paving of newly aligned Bike Path, Grouting RSP, Installation of Wooden Railings on Bike Crossing, Silt Fence Installation, Installation of Fiber Rolls. After construction is complete, Waterways Consulting Inc, will perform as-built surveys.	

Additional Requirements:

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured, including cultural and biological surveys. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife (CDFW).

No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the streambed and flood plain areas at the end of each workday.

All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol.

During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual, 4th Edition (CA Restoration Manual)* or *other approved guidelines and manuals for salmon and steelhead habitat restoration*.

The Grantee shall notify CDFW at least five working days before the project site is de-watered and the stream flow diverted and submit a Water Quality Monitoring Plan and Dewatering Plan to CDFW for State Water Resources Control Board approval at least 30 days before the activity. The notification will provide a reasonable time for CDFW personnel to oversee the implementation of the water diversion plan and the safe removal and relocation of salmonids

and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:

a. Fish dewatering and relocation activities shall only occur between June 15 and October 31 of each year.

b. Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.

c. The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the USACE Regional General Permit and National Marine Fisheries Service (NMFS) Biological Opinion.

d. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.

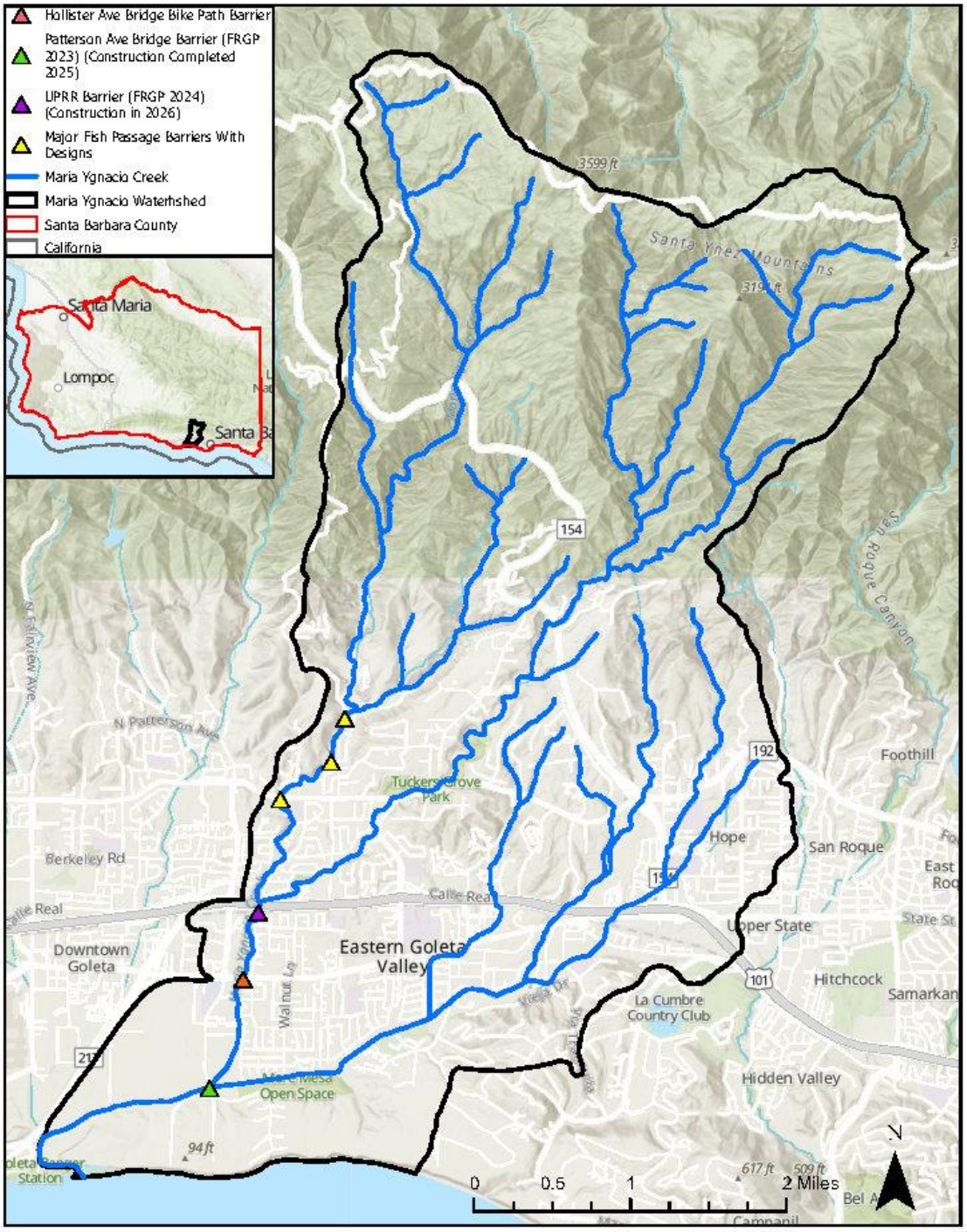
e. USFWS Approved fisheries biologists will provide fish relocation data via the Grantee to the CDFW personnel on a form provided by CDFW.

The bridge (culvert) design and installation will meet flow carrying capacity required for a 100-year flood event as identified by specifications determined by National Oceanic and Atmospheric Administration (NOAA) Fisheries and the CDFW, for adult and juvenile salmonid fish passage. The project will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and criteria for fish passage as described in Volume II, Part IX, of the *California Salmonid Stream Habitat Restoration Manual*. The engineered plans for the bridge (culvert) installation shall be visually reviewed and authorized by NOAA Fisheries or CDFW engineers prior to commencement of work.

The Grantee/landowner will maintain the new crossing, inspect the crossing in a timely manner and remove debris as necessary during the storm season.

Atascadero & Maria Ygnacio Creek Watershed

Hollister Ave Bridge Bike Path Fish Passage Project Regional Map



Atascadero & Maria Ygnacio Creek Watershed

Hollister Ave Bridge Bike Path Fish Passage Project USGS Topo



Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Anaxyrus californicus	arroyo toad	AAABB01230	Endangered	None	SSC
Rana boylii pop. 6	foothill yellow-legged frog - south coast DPS	AAABH01056	Endangered	Endangered	-
Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC
Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC
Spea hammondii	western spadefoot	AAABF02020	Proposed Threatened	None	SSC
Accipiter striatus	sharp-shinned hawk	ABNKC12020	None	None	WL
Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP | WL
Astur cooperii	Coopers hawk	ABNKC12040	None	None	WL
Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP
Eremophila alpestris actia	California horned lark	ABPAT02011	None	None	WL
Cerorhinca monocerata	rhinoceros auklet	ABNNN11010	None	None	WL
Chaetura vauxi	Vauxs swift	ABNUA03020	None	None	SSC
Ardea alba	great egret	ABNGA04040	None	None	-
Ardea herodias	great blue heron	ABNGA04010	None	None	-
Egretta thula	snowy egret	ABNGA06030	None	None	-
Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-
Gymnogyps californianus	California condor	ABNKA03010	Endangered	Endangered	FP
Anarhynchus montanus	mountain plover	ABNNB03100	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Anarhynchus nivosus nivosus	western snowy plover	ABNNB03031	Threatened	None	SSC
Falco columbarius	merlin	ABNKD06030	None	None	WL
Falco mexicanus	prairie falcon	ABNKD06090	None	None	WL
Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	-
Gavia immer	common loon	ABNBA01030	None	None	SSC
Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-
Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC
Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC
Hydroprogne caspia	Caspian tern	ABNNM08020	None	None	-
Larus californicus	California gull	ABNNM03110	None	None	WL
Sternula antillarum browni	California least tern	ABNNM08103	Endangered	Endangered	FP
Thalasseus elegans	elegant tern	ABNNM08040	None	None	WL
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	ABPBX91091	None	None	WL
Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC
Artemisiospiza belli belli	Bells sparrow	ABPBX97021	None	None	WL
Passerculus sandwichensis beldingi	Beldings savannah sparrow	ABPBX99015	None	Endangered	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	-
Nannopterum auritum	double-crested cormorant	ABNFD01020	None	None	WL
Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC
Laterallus jamaicensis coturniculus	California black rail	ABNME03041	None	Threatened	FP
Rallus obsoletus levipes	light-footed Ridgways rail	ABNME05014	Endangered	Endangered	FP
Athene cunicularia	burrowing owl	ABNSB10010	None	Candidate Endangered	SSC
Strix occidentalis occidentalis	California Spotted Owl	ABNSB12013	Proposed Endangered; Proposed Threatened	None	SSC
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC
Empidonax traillii	willow flycatcher	ABPAE33040	None	Endangered	-
Empidonax traillii extimus	southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	-
Vireo bellii pusillus	least Bells vireo	ABPBW01114	Endangered	Endangered	-
Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-
Eucyclogobius newberryi	tidewater goby	AFCQN04010	Endangered	None	SSC
Oncorhynchus mykiss irideus pop. 10	steelhead - southern California DPS	AFCHA0209J	Endangered	Endangered	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-
Bombus crotchii	Crotchs bumble bee	IIHYM24480	None	Candidate Endangered	-
Bombus pensylvanicus	American bumble bee	IIHYM24260	None	None	-
Cicindela hirticollis gravida	sandy beach tiger beetle	IICOL02101	None	None	-
Eugnosta busckana	Buscks gallmoth	IILEM2X090	None	None	-
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	Proposed Threatened	None	-
Coelus globosus	globose dune beetle	IICOL4A010	None	None	-
Neotoma lepida intermedia	San Diego desert woodrat	AMAFF08041	None	None	-
Eumops perotis californicus	western mastiff bat	AMACD02011	None	None	SSC
Nyctinomops macrotis	big free-tailed bat	AMACD04020	None	None	SSC
Enhydra lutris nereis	southern sea otter	AMAJF09012	Threatened	None	FP
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Bassariscus astutus octavus	southern California ringtail	AMAJE01011	None	None	FP
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Lasiurus frantzii	western red bat	AMACC05080	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Lasiurus xanthinus	western yellow bat	AMACC05070	None	None	SSC
Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-
Anodonta californiensis	California floater	IMBIV04220	None	None	-
Anniella pulchra	northern legless lizard	ARACC01020	None	None	SSC
Anniella spp.	California legless lizard	ARACC01070	None	None	SSC
Anniella stebbinsi	San Diegan legless lizard	ARACC01060	None	None	SSC
Salvadora hexalepis virgultea	coast patch-nosed snake	ARADB30033	None	None	SSC
Actinemys marmorata	northwestern pond turtle	ARAAD02031	Proposed Threatened	None	SSC
Actinemys pallida	southwestern pond turtle	ARAAD02032	Proposed Threatened	None	SSC
Thamnophis hammondii	two-striped gartersnake	ARADB36160	None	None	SSC
Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC
Aspidoscelis tigris stejnegeri	coastal whiptail	ARACJ02143	None	None	SSC
Southern California Steelhead Stream	Southern California Steelhead Stream	CARE2310CA	None	None	-
Southern Coastal Salt Marsh	Southern Coastal Salt Marsh	CTT52120CA	None	None	-
Southern Vernal Pool	Southern Vernal Pool	CTT44300CA	None	None	-
Anomobryum julaceum	slender silver moss	NBMUS80010	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Pleuridium mexicanum	Mexican earthmoss	NBMUS5M080	None	None	-
Sanicula hoffmannii	Hoffmanns sanicle	PDAPI1Z090	None	None	-
Baccharis plummerae ssp. plummerae	Plummers baccharis	PDAST0W0D2	None	None	-
Centromadia parryi ssp. australis	southern tarplant	PDAST4R0P4	None	None	-
Deinandra paniculata	paniculate tarplant	PDAST4R0Y0	None	None	-
Erigeron sanctarum	saints daisy	PDAST3M3R0	None	None	-
Lasthenia conjugens	Contra Costa goldfields	PDAST5L040	Endangered	None	-
Lasthenia glabrata ssp. coulteri	Coulters goldfields	PDAST5L0A1	None	None	-
Layia heterotricha	pale-yellow layia	PDAST5N070	None	None	-
Malacothrix saxatilis var. arachnoidea	Carmel Valley malacothrix	PDAST660C2	None	None	-
Malacothrix saxatilis var. saxatilis	cliff malacothrix	PDAST660C5	None	None	-
Senecio astephanus	San Gabriel ragwort	PDAST8H090	None	None	-
Amsinckia douglasiana	Douglas fiddleneck	PDBOR01010	None	None	-
Nasturtium gambelii	Gambels water cress	PDBRA270V0	Endangered	Threatened	-
Lonicera subspicata var. subspicata	Santa Barbara honeysuckle	PDCPR030R3	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Atriplex coulteri	Coulters saltbush	PDCHE040E0	None	None	-
Atriplex serenana var. davidsonii	Davidsons saltscale	PDCHE041T1	None	None	-
Suaeda esteroa	estuary seablite	PDCHE0P0D0	None	None	-
Calystegia sepium ssp. binghamiae	Santa Barbara morning-glory	PDCON040E6	None	None	-
Convolvulus simulans	small-flowered morning-glory	PDCON05060	None	None	-
Arctostaphylos refugioensis	Refugio manzanita	PDERI041B0	None	None	-
Astragalus didymocarpus var. milesianus	Miles milk-vetch	PDFAB0F2X3	None	None	-
Thermopsis macrophylla	Santa Ynez false lupine	PDFAB3Z0E0	None	Rare	-
Quercus dumosa	Nuttalls scrub oak	PDFAG050D0	None	None	-
Ribes amarum var. hoffmannii	Hoffmanns bitter gooseberry	PDGRO02012	None	None	-
Phacelia hubbyi	Hubbys phacelia	PDHYD0C0R4	None	None	-
Juglans californica	southern California black walnut	PDJUG02020	None	None	-
Juncus acutus ssp. leopoldii	southwestern spiny rush	PMJUN01051	None	None	-
Juncus luciensis	Santa Lucia dwarf rush	PMJUN013J0	None	None	-
Lepechinia fragrans	fragrant pitcher sage	PDLAM0V030	None	None	-
Monardella hypoleuca ssp. hypoleuca	white-veined monardella	PDLAM180A5	None	None	-
Calochortus fimbriatus	late-flowered mariposa-lily	PMLIL0D1J2	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Fritillaria ojaiensis	Ojai fritillary	PMLIL0V0N0	None	None	-
Lilium humboldtii ssp. ocellatum	ocellated humboldt lily	PMLIL1A072	None	None	-
Calandrinia breweri	Brewers calandrinia	PDPOR01020	None	None	-
Abronia maritima	red sand-verbena	PDNYC010E0	None	None	-
Hordeum intercedens	vernal barley	PMPOA380E0	None	None	-
Gilia ochroleuca ssp. lanosa	Sisquoc gilia	PDPLM04185	None	None	-
Chorizanthe palmeri	Palmers spineflower	PDPGN040H0	None	None	-
Eriogonum elegans	elegant wild buckwheat	PDPGN081Y0	None	None	-
Delphinium umbraculorum	umbrella larkspur	PDRAN0B1W0	None	None	-
Cercocarpus betuloides var. blancheae	island mountain-mahogany	PDROS08022	None	None	-
Horkelia cuneata var. puberula	mesa horkelia	PDROS0W045	None	None	-
Galium cliftonsmithii	Santa Barbara bedstraw	PDRUB0N0J0	None	None	-
Scrophularia atrata	black-flowered figwort	PDSCR1S010	None	None	-
Pelazoneuron puberulum var. sonorense	Sonoran maiden fern	PPTHE05192	None	None	-

Rail Dump Gulch Fish Passage and Habitat Improvement Project *(Project ID: 1736366) 2026*

Introduction:

The Trout Unlimited, Inc. (Grantee)(TU) will improve salmonid fish passage and increase off-channel rearing habitat in Rail Dump Gulch and Big River by removing a culvert crossing and associated fill prism and replacing the culvert upstream, realigning the road, restoring intertidal marsh habitat, remediating an instream geomorphic barrier, installing large wood structures, and revegetating the site. The project will restore 0.68 acres of intertidal marsh habitat and improve access to 0.23 miles of salmonid habitat.

The Big River watershed was heavily logged during the early 20th century. These early practices were intensive and produced a considerable amount of sediment and logging debris accumulations. Splash dams were used to trigger large flood events that moved sediment and logs into the lower reaches of Big River (Jackson 1991). Logging debris often consisted of logs, chunks, slabs, limbs, and bark accumulations that were believed to hinder fish passage. Rail Dump Gulch (RDG) was operated as a railroad log dump from 1901 to 1936. "Pilings were placed almost continuously between the piers and the millpond to assist in the transport of the logs to the mill and to prevent them from being swept out to sea" (Downie et al 2006).

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* Volume I, Section VII and VIII. Applicant indicated using protocols from CDFW California Salmonid Stream Habitat Restoration Manual Volume I, Sections VII and VIII.

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☒ or No ☐

Project Description:

Location:

The project is located approximately 11 miles southeast of the City of Fort Bragg in Mendocino County, CA. Rail Dump Gulch (RDG) is a tributary to the Big River, which drains into the Pacific Ocean 4.3 miles downstream. The project begins approximately 350 feet upstream from the confluence of Big River and Rail Dump Gulch and extends upstream 0.23 miles. The center point for the project reach is 39.2951755° north latitude and -123.7426716° west longitude, Township 17 North, Range 17 West, Section 34 on the Mathison Peak 7.5 Minute U.S. Geological Survey (USGS) Quadrangle map.

Driving Directions: From Fort Bragg, drive south on Highway 1 for 10.3 miles until you reach the turn for Big River Beach (N Big River Road). Turn east onto N Big River Road for 0.5 miles until you reach the traffic bollards. Proceed through the traffic bollards for 3.75 miles until you reach the project site.

Project central coordinates: 39.2951755, -123.7426716

Project Description:

The project goal is to improve salmonid fish passage and increase off-channel rearing habitat in Rail Dump Gulch and the Big River by improving infrastructure-imposed limitations to natural processes within the watershed. The project objectives are to remove the brackish culvert crossing and associated M-1 fill prism, realign the road without harming large trees, install an appropriately sized freshwater culvert over the single-thread channel, remediate an upstream geomorpohic barrier using grade control features and by laying back streambanks, convert the anthropogenic wetland to low-energy intertidal marsh habitat, connect the newly created intertidal marsh habitat to the upstream single-thread channel by removing the sediment wedge that currently contributes to Rail Dump Gulch going subsurface, install large wood structures throughout the restored channel, and rehabilitate and revegetate the project area. The project will reconnect adult salmon to historic freshwater spawning habitat and will restore and enhace tidally influenced off channel habitat for non-natal and natal juvenile salmonids in the lower Big River estuary ecotone.

Prior to implementation, Samara Restoration will collect native seeds from the site and grow seeds into container plants per California Department of Parks and Recreation (CDPR) requirements. CDPR and TU will coordinate with Sherwood Valley Band of Pomo Indians during seed collection. TU will advertise a Request for Proposals and subcontract with a qualified Construction Contractor to complete all construction tasks. Contractor will install fish screens and Pacific Watershed Associates (PWA) will lead aquatic species relocation efforts with assistance from TU and CDPR and with oversight from CDFW. Contractor will install

coffer dams and dewatering system and begin to dewater the construction area. After fish relocation and dewatering is complete, instream construction will begin. CDPR will delineate fern patches and redwood trees greater than 10 inches to be salvaged and replanted after construction. Contractor will stockpile salvaged plants in staging areas with shade and a nearby water source. The M-1 crossing will be plugged and the existing M-1 fill prism will be removed and repurposed to realign the new road. A portion of the M-1 fill prism will remain intact (temporarily) to act as a berm and prevent tidal water from entering the project area. The road will be aligned from west to east and will follow an existing skid road. The roadway will be elevated above the floodplain to match the existing roadway elevation until reconnecting to the existing M-1 road. Rolling dips and two ditch relief culverts (12" and 24") will be installed to address road drainage. A 30-foot-long pipe-arch CMP culvert (73" span & 55" rise) with coupler will be installed at the new single-thread channel freshwater stream crossing. The existing channel will be straightened to reduce bends at the inlet and outlet. The upstream geomorphic barrier (headcut) will be graded to simulate pre-aggradation conditions. Materials will be excavated and reworked on-site to grade a defined channel with consistent slope. Banks will be graded to emulate natural banks/floodplain. The remaining sediments will be stabilized by installing eight log steps as hydraulic grade. The anthropogenic wetland will be converted to low-energy intertidal marsh habitat by excavating the ground into three terraces (marsh ecotones) based on water surface elevation targets. The terraces will be irregular with variable cut slopes but will generally slope towards the main channel. The existing channel will be realigned to flow through the new intertidal marsh area.

Large woody material (LWM) will be installed above the existing culvert to create log steps for stabilization and will be embedded into marsh soils to create habitat complexity. The Construction Contractor will procure Douglas fir and redwood trees from the surrounding upland area adjacent to the project site. Project pieces will include logs with and without rootwads. Trees will be felled and/or an excavator will be used to exhume the rootwads of whole trees which will then be placed in the channel. Fourteen logs with rootwads and 24 logs without rootwads will be used in project structures. The remainder of the M-1 fill prism, and old crossing will be removed. The restoration area will be stabilized by decompacting and recontouring slopes and slash-packing the surface to protect bare soil areas. Acceptable spoils shall be disposed of in the quarry located 0.6 miles after the entrance gate to the M-1 road on the north side, and shall be placed along the back of the quarry at the highest location, must be compacted in 6in lifts, and graded to provide drainage. Any vegetation to be disposed of here shall be buried. After the first significant rain, Samara Restoration will revegetate the project area with approximately 4,420 native container plants grown from native seed collected onsite. CDPR will replant salvaged ferns and redwood trees.

Materials:

Trout Unlimited (TU) will purchase office supplies like pens, paper, envelopes, and postage (Task 1); permit fee for LSAA (Task 2); field and office supplies which include flagging/stakes, Rite in the Rain paper/notebooks, professional printing for reports, permits, temporary signage full-size designs for the field, and monitoring supplies (e.g., thermometer, 100m tape, etc.) (Task 3 & 6); and travel from office to project site (Tasks 2-8).

Pacific Watershed Associates (PWA) will purchase waders, wading boots, electrofisher rental, seine nets rental, and sampling equipment rental. PWA will require reimbursement for costs associated with travel (e.g. mileage)(Task 3-8).

Elias J Steinbuck will require reimbursement for costs associated with travel (e.g. mileage)(Task 5 & 7).

The Construction Contractor (TBD) will purchase or provide materials for construction that are listed in detail in the 100% Final Design Plans and technical specifications. Construction materials include, but are not limited to heavy equipment, chainsaws, water management supplies (i.e. pumps, pipes, generators, containment) and erosion control materials (i.e. straw wattles). The Construction Contractor will require reimbursement for costs associated with travel (e.g. mileage)(Tasks 4, 6, & 7).

Samara Restoration (Samara) will purchase seed collection materials (i.e. bags and containers), materials for growing plants from seeds (i.e. pots and soil), and plant installation materials (i.e. shovels and mulch). Samara will require reimbursement for costs associated with travel (e.g. mileage) (Task 7).

California Department of Parks and Recreation (CDPR) will purchase or provide as cost-share construction materials including culverts, rock, geotextile fabric, biological survey equipment, revegetation equipment, and an interpretive panel. In addition, CDPR will provide as cost-share redwood and Douglas fir trees (Task 7).

Tasks, Deliverables, and Timelines:

All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window.

Task Name	Start Date	Activity Description	Deliverables
Task 1 - Project Management and Administration	4/1/2027	TU North Coast Coho Project (NCCP) Project Manager will provide technical and administrative services associated with performing and completing the work for this Project, including managing this Agreement, assuring all permits are finalized, administering subcontracts, invoicing and payments, completing the Build America, Buy America Act certification, finalizing progress and annual reports, and drafting and finalizing the final report. NCCP Project Director will provide oversight of the Project and assist NCCP Project Manager with technical and administrative services including reviewing deliverables and checking that project schedule is on track. TU California Operations and Grants Manager and NCCP Field Accountant will help process invoices, track financial information, ensure grant and procurement compliance, and develop reports. TU California Communications Manager will be available to support outreach efforts associated with this Project. Outreach efforts will be focused on developing at least one web or print based article that summarizes the Project details, including the Project partners and funders, but may include other outreach efforts, like social media posts. NCCP Project Manager will deliver the final landowner access agreements and executed subcontractor agreements prior to receiving a Notice to Proceed. The landowner access agreement will state that the landowner cannot limit the distribution of data collected on private	Final Landowner Access Agreement - Prior to receiving Notice to Proceed Executed Subcontractor Agreements - Prior to receiving Notice to Proceed Invoices & Progress Reports - Due with each submitted invoice or at least quarterly Annual Reports - Due no later than November 15 of each year Draft Final Report - January 28, 2031 Final Report - February 28, 2031 Final Invoice - February 28, 2031 Build America, Buy America Act Certification Form - February 28, 2031

		land unless the law specifically exempts such data from disclosure.	Copies of Outreach Media - February 28, 2031
Task 2 - Environmental Compliance	4/1/2027	TU will follow California Environmental Quality Act (CEQA), the appropriate Regional General Permit, and the 401 Water Quality Certification for the Project and all their conditions. TU will provide proof all required threatened and endangered species surveys, biological monitoring, and required reasonable measures to cultural, archaeological, paleontological, and biological resources, including native species and their habitat have been completed. TU will rely on the FRGP programmatic permits (401 and 404), the FRGP Coastal Development Permit Consistency Determination, and will secure the Lake and Streambed Alteration Agreement (1602). TU will be responsible for ensuring all permit conditions are followed throughout the life of the project. The California Department of Parks and Recreation (CDPR) will conduct northern spotted owl, cultural resources, and botanical surveys for this project. CDFW granted CDPR a 10-year survey reprieve from marbled murrelet (MAMU) surveys and monitoring due to MAMU being absent from the area. CDPR will conduct a Northwest Information Center Records Search, conduct site surveys, coordinate with Native American Tribes, and provide a report detailing site pre-history and history, survey results, and avoidance and minimization measures, if required. CDPR will provide botanical resources support for this project through a California Natural Diversity Database query, botanical field surveys, and associated mapping and reporting to support environmental compliance. CDPR will conduct nesting migratory bird surveys if construction begins before August 1, 2027.	Resource Survey Documentation - May 31, 2027, or prior to construction activities Final LSAA 1602 - May 31, 2027, or prior to receiving Notice to Proceed Final Water Quality Monitoring Plan - April 1, 2027, or prior to construction activities Water Quality Monitoring Documentation - Weekly during construction when applicable

		TU will provide a Final Water Quality Monitoring Plan to CDFW for review and approval. Elias J. Steinbuck (EJS) will monitor water quality during construction activities. Parameters including but not limited to dissolved oxygen, temperature, pH, conductivity, and turbidity will be measured. EJS will record water quality data and report to TU weekly when water is present in the project site. TU will submit Water Quality monitoring data sheets weekly throughout construction, as required.	
Task 3 - Construction Contractor Selection	4/1/2027	TU will advertise and award a subcontract to a qualified Construction Contractor who conforms to all material terms of the bid documents and has competitive prices. A competitive proposal procurement process will be followed to ensure the contractor's technical capacity. Qualifications will be based on the contractor's personnel, specialized skills, successful past performance on similar projects, and evidence that the contractor understands the specific constraints of the Project necessary to successfully execute the required work within the available timeframe. To support TU, PWA will assist in preparing the "bid sheet" and description of pay items for the contractor selection and will be available to review any contract documents provided by TU. The evaluation team (TU, PWA, EJS, and CDPR) will be available to attend an on-site meeting organized by TU to describe the project to prospective contractors and will assist with preparing responses to questions from prospective contractors. The evaluation team will assist TU in the evaluation of contractor's qualifications and experience and will assist in selecting a contractor.	Deliverables: Construction Contractor Selection Results - May 1, 2027

		TU will contract with a qualified Construction Contractor and coordinate construction of the project. PWA will prepare a final conformance set of the project construction documents updated to reflect any project changes, including addendums, conformance to permit conditions, location of any sensitive areas, or necessary clarifications. Contracts shall be made only with responsible contractors who possess the ability to perform successfully under the terms and conditions of the proposed procurement. Consideration shall be given to such matters as contractor integrity, record of past performance, financial and technical resources, or accessibility to other necessary resources. No contract shall be made with parties listed on the General Services Administration's List of Parties Excluded from Federal Procurement or Non-procurement Programs in accordance with E.O.s 12549 and 12689, "Debarment and Suspension."	
Task 4 - Pre-Implementation Tasks and Pre-Construction Layout	5/1/2027	CDPR will post signage and distribute outreach materials to the public prior to construction. Any changes to project designs or locations will be discussed with the CDFW Grant Manager. Any avoidance areas that may have resulted from CEQA surveys will be clearly designated with flagging. The Construction Contractor will review trees to be used for the project with CDPR. Trees will be marked and flagged in preparation of felling operations. TU will take pre-implementation photos of the project site. PWA will establish elevation and control for the project. PWA will provide information suitable for Construction Contractor to conduct project stakeout and will confirm project layout in the field. Construction Contractor will flag project footprint and limits on clearing and grubbing.	Pre-Implementation Photos, Copies of layout and grading information submitted to contractor - June 14, 2027, or prior to construction activities
Task 5 - Construction	6/15/2027	EJS will provide daily construction oversight to ensure timeliness, completion and conformance with the project design plans and specifications and compliance with the	Construction Memorandum - December 31, 2027

Management and Oversight		project permits. Construction oversight will serve to resolve contract issues and provide guidance to the Construction Contractor. During excavation and earthwork activities EJS and PWA will observe subsurface conditions and provide technical support for grading operations, including slope stability and conformance to the design plans. EJS will keep a daily log of activities and any direction provided to Construction Contractor. EJS will record on a set of the plans red-line mark-ups of deviations from the design and record these deviations in the daily log. EJS and PWA will note Construction Contractors' progress on the various pay items and assist TU with determining the "percent complete" in support of partial payments. PWA will perform part time construction observation and inspection in coordination with EJS and participate in weekly construction coordination meetings. PWA will review submittals, monitor construction schedule, provide responses to Requests for Information (RFI's), review progress invoices, and review contract change order requests. PWA will be available to make recommendations to address unforeseen conditions that arise and for making field changes, as necessary. PWA will relocate and/or reestablish survey benchmarks for use by the Construction Contractor. Also, PWA will assist EJS with preparing the final punch list for Construction Contractor and providing final inspections prior to demobilization. TU will conduct at least one on-site environmental compliance training to all field staff and EJS will be onsite to relocate amphibians and other species daily. CDFW species relocation forms will be used and provided to TU when relocation activities occur.	
Task 6 - Aquatic Species	6/15/2027	Aquatic species relocation activities will only occur between June 15 and November 1 of each year. A qualified biologist from PWA will conduct the aquatic	Fish relocation report, data forms, all species relocation data - 10/31/2027

Relocation and Dewatering		species relocation efforts with assistance from TU and CDPR, and with oversight by the CDFW Grant Manager. TU will notify CDFW a minimum of 10 working days before the project site is de-watered and stream flow is diverted. The Construction Contractor will coordinate with PWA for removal and relocation of aquatic species during the dewatering process. The Construction Contractor will install fish screens under the direction of PWA prior to aquatic species relocation activities. Additional measures to minimize injury and mortality to salmonids during fish relocation and dewatering activities shall be implemented as described in Volume II, Part IX, pages 52 and 53 of the California Salmonid Stream Habitat Restoration Manual. Fish relocation will be conducted in conjunction with channel dewatering activities which will follow the plans outlined in the design documents and will conform to all CDFW guidance and permit documents. Electrofishing field forms will be completed and provided to the CDFW grant manager as per State and Federal guidelines. A streamflow bypass system consisting of coffer dams at the upstream and downstream ends of the project and a pipeline that gravity feeds or pumps streamflow around the entire isolated work area will be installed. Nuisance water seeping into the isolated work area will need to be pumped to upland areas and allowed to infiltrate with no return flows to Rail Dump Gulch or Big River. TU will ensure the amount of wetted stream channel dewatered at each individual Project site is minimized to the fullest extent possible.	
Task 7 - Construction	6/15/2027	The project team consisting of TU, CDPR, PWA, EJS, and the Construction Contractor will have a pre-construction field meeting to review and discuss permit conditions, species relocation plans, the water management plan, design plans, and other logistics. Construction will occur during the	Actual performance measures, as specified in the 2026 PSN - December 31, 2027

		low flow seasonal work period (June 15 - October 31) and will follow best management practices as outlined by the permits. It is expected that construction will occur for 10-12 weeks. A final Notice to Proceed will be secured prior to construction. All habitat improvements will follow techniques described in the California Salmonids Stream Habitat Restoration Manual, Volumes I and Volume II and Fish Bulletin 184. CDPR will provide daily biological monitoring prior to construction. Construction activities include mobilization/demobilization, clearing and grubbing, construction stakeout and survey, material procurement and staging, water management, temporary erosion and sediment control, M-1 road demolition, M-1 road construction, pipe-arch culvert installation, upstream headcut stabilization, march/channel excavation, site stabilization, and revegetation. Samara Restoration will plant containerized native herbaceous plants in the restoration area in the fall/winter following construction with assistance from CDPR.	
Task 8 - Post-Implementation Tasks and Monitoring	11/1/2027	An as-built survey and redline markups of the design plans will be created at the completion of the Project and provided to Grantee for their records and to be used as a baseline for post construction monitoring. In coordination with TU, CDPR will contract with a graphic designer and install an interpretive sign at the project site for the public to learn about the project. PWA will conduct post-construction monitoring and all data collected will conform to the requirements for each project type within the 2026 FRGP Guidelines. The monitoring will	As-built drawings - January 31, 2028 First Winter Observations Summary - May 1, 2028 Annual Physical Monitoring Memorandum (two seasons), Post-Implementation Longitudinal Profile, Post-Implementation Site Photos - May 1, 2029

		occur 1 year and 2 years after construction to note channel adjustments and identify any issues that should be addressed. The monitoring will consist of a longitudinal profile of the restored channel bed along with select channel cross sections. Locations of LW grade control features will be documented in the survey and can be used to determine stability. First and second winter observations will be made by TU and PWA and will be summarized. Observations will include photographs, visual observations of changes in the channel, stability of LW grade control and mapped areas of scour or deposition. TU will lead the photo-point monitoring and will collect comparative photographs of significant project features at established locations before and after implementation. After each of the two monitoring surveys, PWA will prepare a brief memorandum summarizing the methods and results of the post-construction monitoring and provide recommendations. The first monitoring survey will serve as the First Winter Observation Summary. These reports will be compiled by TU and delivered with the subsequent annual report. Upon completion of the construction work PWA will perform a longitudinal survey of the channel and stream bed. This survey will establish a baseline for future monitoring and evaluation of the grade control structures and channel bed.	

Additional Requirements:

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured, including cultural and biological surveys. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife (CDFW).

No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the streambed and flood plain areas at the end of each workday.

All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol.

During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual, 4th Edition (CA Restoration Manual)* or *other approved guidelines and manuals for salmon and steelhead habitat restoration*.

Relocation:

The Grantee shall notify CDFW at least five working days before the project site is de-watered and the stream flow diverted and submit a Water Quality Monitoring Plan and Dewatering Plan to CDFW for State Water Resources Control Board approval at least 30 days before the activity. The notification will

provide a reasonable time for CDFW personnel to oversee the implementation of the water diversion plan and the safe removal and relocation of salmonids and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:

a. Fish dewatering and relocation activities shall only occur between June 15 and October 31 of each year.

b. Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.

c. The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the USACE Regional General Permit and National Marine Fisheries Service (NMFS) Biological Opinion.

d. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.

e. USFWS Approved fisheries biologists will provide fish relocation data via the Grantee to the CDFW personnel on a form provided by CDFW.

The culvert design and installation will meet flow carrying capacity required for a 100-year flood event as identified by specifications determined by National Oceanic and Atmospheric Administration (NOAA) Fisheries and the CDFW, for adult and juvenile salmonid fish passage. The project will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and criteria for fish passage as described in Volume II, Part IX, of the *California Salmonid Stream Habitat Restoration Manual*. The engineered plans for the culvert installation shall be visually reviewed and authorized by NOAA Fisheries or CDFW engineers prior to commencement of work.

The Grantee/landowner will maintain the new crossing, inspect the crossing in a timely manner and remove debris as necessary during the storm season.

Final structure design and placement will be determined by field consultation between the Grantee and the CDFW Personnel.

All road decommissioning will be done in accordance with techniques described in the Handbook for Forest and Ranch Roads, (PWA, 1994c.) and the *California Salmonid Stream Habitat Restoration Manual*, Volume II, Part X. All road upgrade and decommissioning sites and techniques shall be approved by the CDFW personnel before any equipment work takes place.

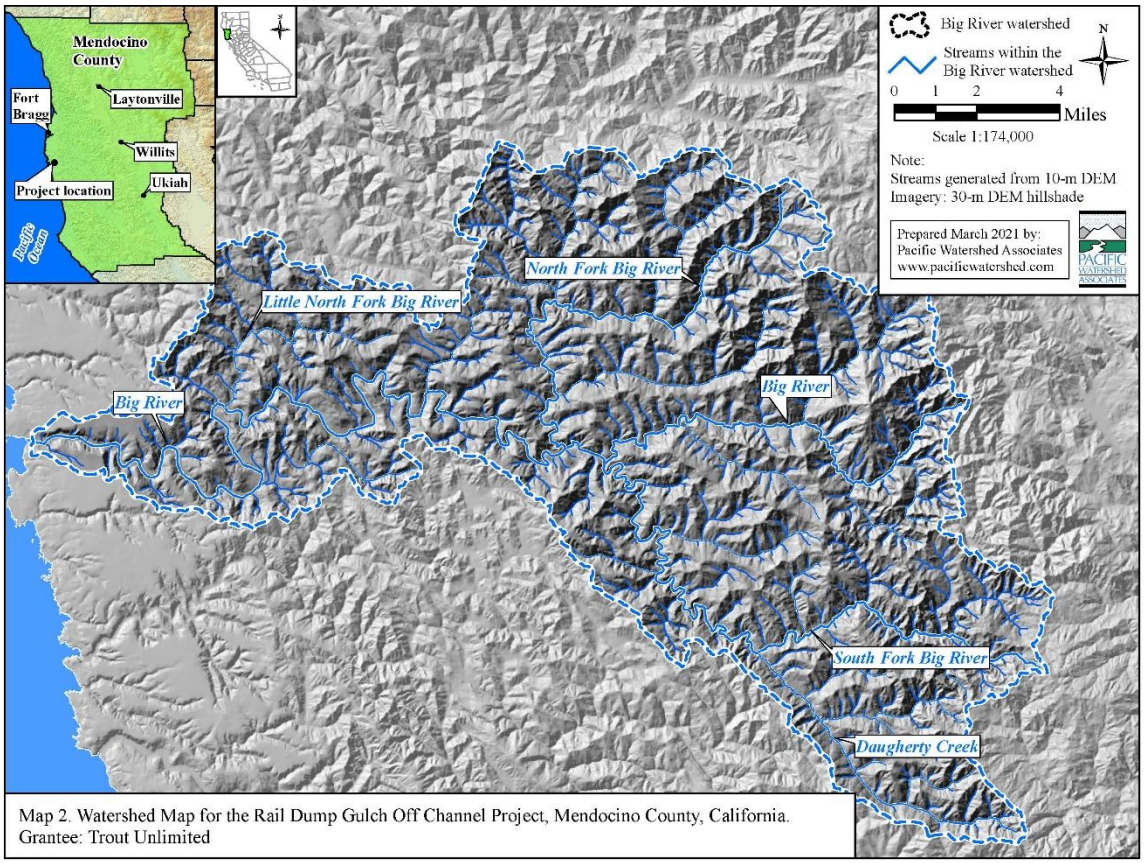
All crossings treated in fish bearing reaches of streams will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and the criteria for adult and juvenile salmonid fish passage as described in Volume II, Part IX of the *California Salmonid Stream Habitat Restoration Manual*.

Seeding and mulching of all exposed soils shall be done for all slopes which may deliver sediment to a stream. Woody debris will be concentrated on finished slopes adjacent to stream crossings. The standard for success is 80% ground cover for broadcast planting of seed, after a period of three years. Mulching and seeding will take place as sites are completed to avoid unforeseen erosion. Planting of tree seedlings should take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings.

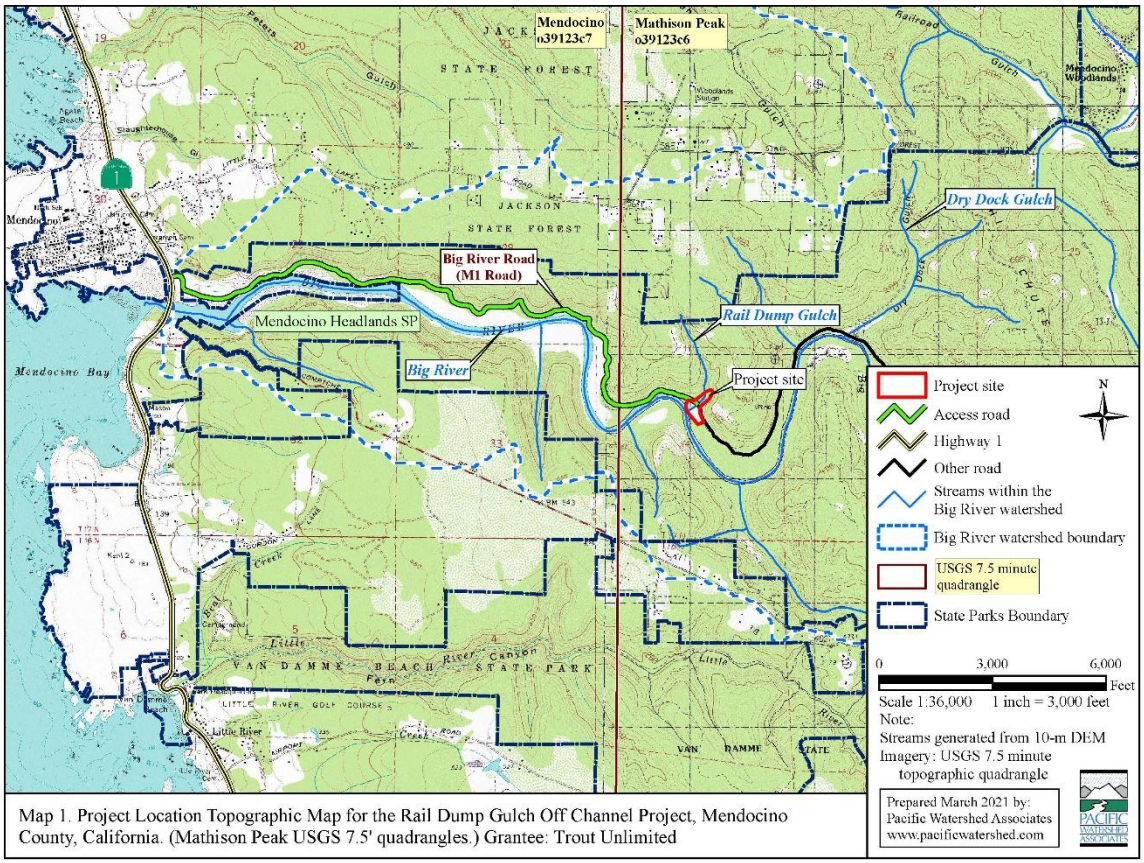
Sites that are expected to erode and deliver sediment to the stream are the only locations where work will be authorized for reimbursement under the terms of this agreement. Reimbursement will not be authorized for work done to improve aesthetics only.

The landowner or responsible party must sign an access agreement stating they agree to maintain the erosion control project for a period of not less than 10 years. Maintenance will consist of repair to the road or stream crossing to a level that will effectively reduce sediment from entering the stream. In the event of an act of nature which results in partial or complete failure of the project, the landowner or applicant will not be held responsible for costs incurred after the act of nature. Acts of nature include, but are not limited to floods, earthquakes, volcanic eruptions, and windstorms.

Planting of tree seedlings should take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings.



Map 2. Watershed Map for the Rail Dump Gulch Off Channel Project, Mendocino County, California.
Grantee: Trout Unlimited



Map 1. Project Location Topographic Map for the Rail Dump Gulch Off Channel Project, Mendocino County, California. (Mathison Peak USGS 7.5' quadrangles.) Grantee: Trout Unlimited

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ascaphus truei	Pacific tailed frog	AAABA01010	None	None	SSC
Rana aurora	northern red-legged frog	AAABH01021	None	None	SSC
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	AAABH01051	None	None	SSC
Rhyacotriton variegatus	southern torrent salamander	AAAAJ01020	None	None	SSC
Taricha rivularis	red-bellied newt	AAAAF02020	None	None	SSC
Calileptoneta wapiti	Mendocino leptonetid spider	ILARAU6040	None	None	-
Astur atricapillus	American goshawk	ABNKC12061	None	None	SSC
Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Brachyramphus marmoratus	marbled murrelet	ABNNN06010	Threatened	Endangered	-
Fratercula cirrhata	tufted puffin	ABNNN12010	None	None	SSC
Chaetura vauxi	Vauxs swift	ABNUA03020	None	None	SSC
Ardea herodias	great blue heron	ABNGA04010	None	None	-
Anarhynchus montanus	mountain plover	ABNNB03100	None	None	SSC
Anarhynchus nivosus nivosus	western snowy plover	ABNNB03031	Threatened	None	SSC
Progne subis	purple martin	ABPAU01010	None	None	SSC
Hydrobates homochroa	ashy storm-petrel	ABNDC04030	None	None	SSC
Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Nannopterum auritum	double-crested cormorant	ABNFD01020	None	None	WL
Athene cunicularia	burrowing owl	ABNSB10010	None	Candidate Endangered	SSC
Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC
Hesperoleucus venustus navarroensis	northern coastal roach	AFCJB19031	None	None	SSC
Eucyclogobius newberryi	tidewater goby	AFCQN04010	Endangered	None	SSC
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Oncorhynchus gorbuscha	pink salmon	AFCHA02010	None	None	-
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	-
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	AFCHA0213Q	Threatened	None	SSC
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	SSC
Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-
Atractelmis wawona	Wawona riffle beetle	IICOL58010	None	None	-
Plebejus anna lotis	lotis blue butterfly	IILEPG5013	Endangered	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	Proposed Threatened	None	-
Speyeria zerene behrensii	Behrens silverspot butterfly	IILEPJ6088	Endangered	None	-
Coelus globosus	globose dune beetle	IICOL4A010	None	None	-
Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC
Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-
Enhydra lutris nereis	southern sea otter	AMAJF09012	Threatened	None	FP
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Eumetopias jubatus	Steller sea lion	AMAJC03010	Delisted	None	-
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Myotis thysanodes	fringed myotis	AMACC01090	None	None	-
Myotis volans	long-legged myotis	AMACC01110	None	None	-
Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-
Haliotis kamtschatkana	pinto abalone	IMGASV2040	None	None	-
Helminthoglypta arrosa pomoensis	Pomo bronze shoulderband	IMGASC2033	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Noyo intersessa	Ten Mile shoulderband	IMGASC5070	None	None	-
Margaritifera falcata	western pearlshell	IMBIV27020	None	None	-
Actinemys marmorata	northwestern pond turtle	ARAAD02031	Proposed Threatened	None	SSC
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	-
Coastal Brackish Marsh	Coastal Brackish Marsh	CTT52200CA	None	None	-
Grand Fir Forest	Grand Fir Forest	CTT82120CA	None	None	-
Mendocino Pygmy Cypress Forest	Mendocino Pygmy Cypress Forest	CTT83161CA	None	None	-
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	CTT52110CA	None	None	-
Sphagnum Bog	Sphagnum Bog	CTT51110CA	None	None	-
Buxbaumia viridis	green shield-moss	NBMUS1B040	None	None	-
Triquetrella californica	coastal triquetrella	NBMUS7S010	None	None	-
Usnea longissima	Methuselahs beard lichen	NLLEC5P420	None	None	-
Ramalina thrausta	angels hair lichen	NLLEC3S340	None	None	-
Angelica lucida	sea-watch	PDAPI070G0	None	None	-
Glehnia littoralis ssp. leiocarpa	American glehnia	PDAPI13011	None	None	-
Blennosperma nanum var. robustum	Point Reyes blennosperma	PDAST1A022	None	Rare	-
Erigeron supplex	supple daisy	PDAST3M3Z0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	PDAST4R0W1	None	None	-
Hemizonia congesta ssp. tracyi	Tracys tarplant	PDAST4R067	None	None	-
Hesperevax sparsiflora var. brevifolia	short-leaved evax	PDASTE5011	None	None	-
Lasthenia californica ssp. bakeri	Bakers goldfields	PDAST5L0C4	None	None	-
Lasthenia californica ssp. macrantha	perennial goldfields	PDAST5L0C5	None	None	-
Microseris borealis	northern microseris	PDAST6E030	None	None	-
Packera bolanderi var. bolanderi	seacoast ragwort	PDAST8H0H1	None	None	-
Erysimum concinnum	bluff wallflower	PDBRA160E3	None	None	-
Erysimum menziesii	Menzies wallflower	PDBRA160R0	Endangered	Endangered	-
Eastwoodiella californica	swamp harebell	PDCAM02060	None	None	-
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	PDCON040D2	None	None	-
Cuscuta pacifica var. papillata	Mendocino dodder	PDCUS011A2	None	None	-
Cornus unalaschkensis	bunchberry	PDCOR010F0	None	None	-
Hesperocyparis pygmaea	pygmy cypress	PGCUP04032	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Carex californica	California sedge	PMCYP032D0	None	None	-
Carex lenticularis var. limnophila	lagoon sedge	PMCYP037A7	None	None	-
Carex livida	livid sedge	PMCYP03N60	None	None	-
Carex lyngbyei	Lyngbyes sedge	PMCYP037Y0	None	None	-
Carex saliniformis	deceiving sedge	PMCYP03BY0	None	None	-
Rhynchospora alba	white beaked-rush	PMCYP0N010	None	None	-
Arctostaphylos nummularia ssp. mendocinoensis	pygmy manzanita	PDERI04280	None	None	-
Astragalus agnicidus	Humboldt County milk-vetch	PDFAB0F080	None	Endangered	-
Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-
Lathyrus japonicus	seaside pea	PDFAB250C0	None	None	-
Lathyrus palustris	marsh pea	PDFAB250P0	None	None	-
Trifolium buckwestiorum	Santa Cruz clover	PDFAB402W0	None	None	-
Trifolium trichocalyx	Monterey clover	PDFAB402J0	Endangered	Endangered	-
Phacelia insularis var. continentis	North Coast phacelia	PDHYD0C2B1	None	None	-
Juncus supiniformis	hair-leaved rush	PMJUN012R0	None	None	-
Erythronium revolutum	coast fawn lily	PMLIL0U0F0	None	None	-
Lilium maritimum	coast lily	PMLIL1A0C0	None	None	-
Lilium rubescens	redwood lily	PMLIL1A0N0	None	None	-
Lycopodium clavatum	running-pine	PPLYC01080	None	None	-
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	PDMAL11012	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0	None	None	-
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	PDMAL110F9	None	None	-
Sidalcea malviflora ssp. purpurea	purple-stemmed checkerbloom	PDMAL110FL	None	None	-
Veratrum fimbriatum	fringed false-hellebore	PMLIL25030	None	None	-
Pityopus californicus	California pinefoot	PDMON05010	None	None	-
Abronia umbellata var. breviflora	pink sand-verbena	PDNYC010N4	None	None	-
Clarkia amoena ssp. whitneyi	Whitneys farewell-to-spring	PDONA05025	None	None	-
Cypripedium montanum	mountain ladys-slipper	PMORC0Q080	None	None	-
Neottia cordata	heart-leaved twayblade	PMORC1N060	None	None	-
Platanthera ephemerantha	white-flowered rein orchid	PMORC1X050	None	None	-
Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-
Castilleja ambigua var. humboldtiensis	Humboldt Bay owls-clover	PDSCR0D402	None	None	-
Castilleja litoralis	Oregon coast paintbrush	PDSCR0D012	None	None	-
Castilleja mendocinensis	Mendocino Coast paintbrush	PDSCR0D3N0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Cordylanthus tenuis ssp. brunneus	serpentine birds-beak	PDSCR0J0S1	None	None	-
Kopsiopsis hookeri	small groundcone	PDORO01010	None	None	-
Pinus contorta ssp. bolanderi	Bolanders beach pine	PGPIN04081	None	None	-
Collinsia corymbosa	round-headed collinsia	PDSCR0H060	None	None	-
Agrostis blasdalei	Blasdales bent grass	PMPOA04060	None	None	-
Calamagrostis bolanderi	Bolanders reed grass	PMPOA17010	None	None	-
Calamagrostis crassiglumis	Thurbers reed grass	PMPOA17070	None	None	-
Pleuropogon hooverianus	North Coast semaphore grass	PMPOA4Y070	None	Threatened	-
Pleuropogon refractus	nodding semaphore grass	PMPOA4Y080	None	None	-
Puccinellia pumila	dwarf alkali grass	PMPOA531L0	None	None	-
Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-
Gilia capitata ssp. tomentosa	woolly-headed gilia	PDPLM040B9	None	None	-
Gilia millefoliata	dark-eyed gilia	PDPLM04130	None	None	-
Leptosiphon aureus	bristly leptosiphon	PDPLM09010	None	None	-
Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-
Chorizanthe howellii	Howells spineflower	PDPGN040C0	Endangered	Threatened	-
Coptis laciniata	Oregon goldthread	PDRAN0A020	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ceanothus gloriosus var. exaltatus	glory brush	PDRHA040F4	None	None	-
Ceanothus gloriosus var. gloriosus	Point Reyes ceanothus	PDRHA040F5	None	None	-
Horkelia marinensis	Point Reyes horkelia	PDROS0W0B0	None	None	-
Sanguisorba officinalis	great burnet	PDROS1L060	None	None	-
Darlingtonia californica	California pitcherplant	PDSAR01010	None	None	-
Chrysosplenium glechomifolium	Pacific golden saxifrage	PDSAX07020	None	None	-
Mitellastra caulescens	leafy-stemmed mitrewort	PDSAX0N020	None	None	-
Tiarella trifoliata var. trifoliata	trifoliate laceflower	PDSAX10031	None	None	-
Viola palustris	alpine marsh violet	PDVIO041G0	None	None	-

Little Van Duzen Summer Steelhead Habitat Project

(Project ID: 1736373) 2026

Introduction:

The Eel River Watershed Improvement Group (ERWIG) (Grantee) will improve instream and off-channel habitat for summer and winter steelhead in the Little Van Duzen River. The project will include the installation of 33 habitat structures made up of 141 logs and 59 logs with rootwads. These structures will provide velocity refugia, pool scour, and cover both instream and off-channel. Some structures are designed to split flow and push more water into floodplains and side channels. The project will address limiting factors in Little Van Duzen River by increasing pool depths, providing velocity refugia habitat and improving off-channel habitat. By addressing these limiting factors, we will increase steelhead reproductive success and juvenile survival within the project reach.

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual, Volume I, Part VII.*

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The Project is located on the Little Van Duzen River, a tributary to the Van Duzen River, between Bridgeville and Dinsmore, in Humboldt County, California. The Project reach starts approximately 1.5 miles upstream of the confluence with the Van Duzen River and extends upstream for approximately 1 mile.

Project central coordinates: 40.45597, -123.66078

Project Description:

The goal of this project is to restore summer steelhead habitat through the construction of 33 large wood and boulder structures along 1 mile of the Little Van Duzen River. These structures will be made up of 141 logs, 59 logs with rootwads and approximately 287 boulders. Habitat structures include large engineered log jams, apex bar jams and pool-cover-scour structures. Some of the habitat structures will have willow planted within them in order to increase creek shade and create lasting habitat features.

Materials:

All materials will be purchased by the applicant and include the .folowing:

- Anchoring Materials: Threaded bar, steel nuts, steel washers (plates), ¾" chain, glue
- Field supplies (timber bits, bit extensions, band saw blades, wood drill, rock drill, rock drill bits, hammers, gloves, and batteries for power tools
- Erosion Control and Revegetation: rice straw, native grass seed, native plants and trees
- Conifer Logs, and boulders

Tasks, Deliverables, and Timelines:

All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window

Task Name	Start Date	Activity Description	Deliverables
Task 1. Project Management and Administration	5/3/2027	Grantee will provide all contracting and administrative oversight pursuant to grant and regulatory guidelines. Grantee will track the project budget and develop and submit invoices to the grantor on a regular basis. In addition, the required annual report metrics will be generated and submitted to the CDFW Grant Manager each year.	1600 Permit - 7/1/2028, Executed Subcontracts - 7/1/2028, Access Agreements - 7/1/2028, Invoices - 7/1/2027, Progress Reports - With every invoice, Annual Report - Annually in November, Project Data - 2/28/2029, Draft Final Report - 2/28/29, Final Report - 3/30/2029, Final Invoice - 5/15/2029
Task 2. CEQA Surveys and Research	5/1/2027	Botanist subcontractor will complete a botanical survey to meet CEQA compliance. A Tribal representative may help inform cultural resource locations. Interim survey reports will be delivered to CDFW Grant Manager prior to receiving a Notice to Proceed. Wildlife surveyor (TBD) will conduct a Spotted Owl survey and a bumblebee survey prior to implementation. Wildlife surveyor will provide a memo summarizing their findings.	Interim Survey Report for botany, bumblebees and Spotted Owls - 7/1/2027, Final Survey Report for botany, bumblebees and Spotted Owls - 2/28/2029
Task 3. Site Preparation	6/1/2027	Grantee and Stillwater will finalize site specific designs based on channel morphology, equipment access, survey results, and large wood availability. A Tribal member may provide input on project designs and implementation approach. Grantee and Stillwater will submit any changes to designs for CDFW Grant Manager approval. Grantee staff will flag sites for wood selection, staging, and installation, clear brush as needed, and designate staging	Finalized design plans, flagged equipment access routes, pre-project photos, and metrics. Deliverables will be delivered before work begins, no later than June 15, 2028.

		areas for wood along the project reach. RKNDL Forestry Consultation will work with Grantee and Construction Contractor (TBD) to choose trees for project use. Construction contractor will install up to four culverted "Spittler" stream crossings that will be used to access features. One will be on Butte Creek and the other three will be on the Little Van Duzen River. These crossings will be used by the excavator and for boulder delivery. Vehicles will access construction areas via existing roads. ERWIG staff will set up fish exclusion fencing at the stream crossings. Grantee staff will assist CDFW in fish and amphibian removal at the stream crossings. The crossings will be used for the shortest time frame possible, at which time Grantee will remove the fencing and rehab the banks. Fish relocation data will be delivered to grant manager. Construction Contractor will deliver boulders to staging areas.	
Task 4. Large Wood Structure Construction	6/15/2028	Upon approval from the CDFW Grant Manager, construction will begin on 33 LW features under the direction of the Grantee and Stillwater Sciences. A qualified Construction Contractor (TBD) who is a licensed timber operator will cut down trees and saw them into logs for the project, and will uproot trees. The Construction Contractor will place boulders, logs and excavated logs with root-wads, into the stream in accordance with design plans. When necessary, California Conservation Corps (CCC) will move logs into position using a grip hoist come-along. The project will utilize living riparian trees as anchors by wedging the logs between them where feasible. CCC will anchor the sites according to design and anchoring specifications. CCC will use one-inch threaded rebar to anchor logs to mature riparian trees and other logs. Holes will be drilled through the logs and their anchor trees using a wood drill, timber bit, and drill bit extensions when necessary. One-inch rebar will be inserted through the log and secured with nuts	Thirty-three large wood features made of 200 logs, including at least 51 logs with root wads. Water quality monitoring reports and data. Completed by 10/31/2028.

		and washers. Rock anchors will include drilling holes into rock and glueing 7/8" threaded bar into the rock. The 7/8" threaded bar will then be attached to a threaded bar in a log via 3/4" chain. Construction Contractor, Tribal representative and Grantee staff may assist the CCC with anchoring. Site construction, wood placement, and anchoring will be in accordance with the CDFW California Salmonid Stream Habitat Restoration Manual, Section VII (Flosi et al. 2010) and will follow engineered design plans. Erosion control methods will be employed by the CCC and Grantee as required at each structure and along equipment corridors to eliminate the possibility of sediment transport to the stream. Any tools that break down will be taken to a repair shop by the CCC. Grantee will monitor water quality as needed. To address concerns over invasive species this project will follow the Grantee Aquatic Invasive Species Decontamination Protocol, which is in line with the CDFW Aquatic Invasive Species Decontamination Protocol.	
Task 5. Riparian Planting	12/1/2028	Grantee will return in the winter following project implementation to plant 400 native tree seedlings (Douglas fir, black oak, white oak, madrone), with a primary focus in areas disturbed by project activities and lacking sufficient tree cover or riparian vegetation.	Four hundred native trees planted along the project reach. Due by 3/30/2029.
Task 6. Post Project Monitoring	11/1/2028	Following implementation Grantee will take post-project photos and quantitative implementation metrics will be collected. Grantee will complete a first winter observation report/memo. Stillwater Sciences and Grantee will create as-built designs.	Post project photos and metrics, first winter observation portion of final report and as-built designs. Provided by March 30, 2029

Additional Requirements:

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured, including cultural and biological surveys. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. The actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife (CDFW).

No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the stream bed and flood plain areas at the end of each workday.

All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol.

During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual, 4th Edition (CA Restoration Manual)* or *other approved guidelines and manuals for salmon and steelhead habitat restoration*.

The Grantee shall notify CDFW at least five working days before the project site is de-watered and the stream flow diverted and submit a Water Quality Monitoring Plan and Dewatering Plan to CDFW for State Water Resources Control Board approval at least 30 days before the activity. The notification will provide a reasonable time for CDFW personnel to oversee the implementation of the water diversion plan and the safe removal and relocation of salmonids

and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:

a. Fish dewatering and relocation activities shall only occur between June 15 and October 31 of each year.

b. Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.

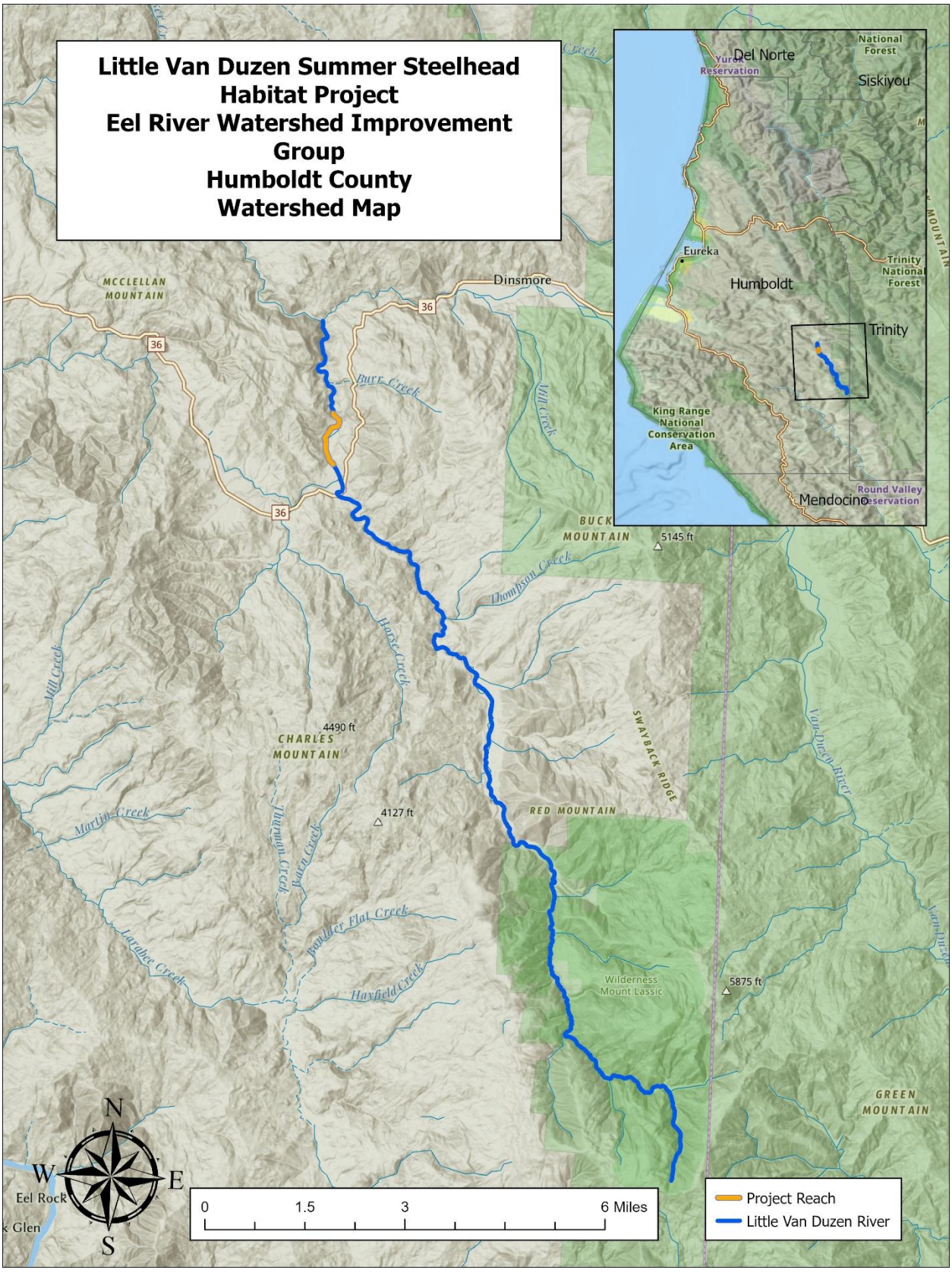
c. The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the USACE Regional General Permit and National Marine Fisheries Service (NMFS) Biological Opinion.

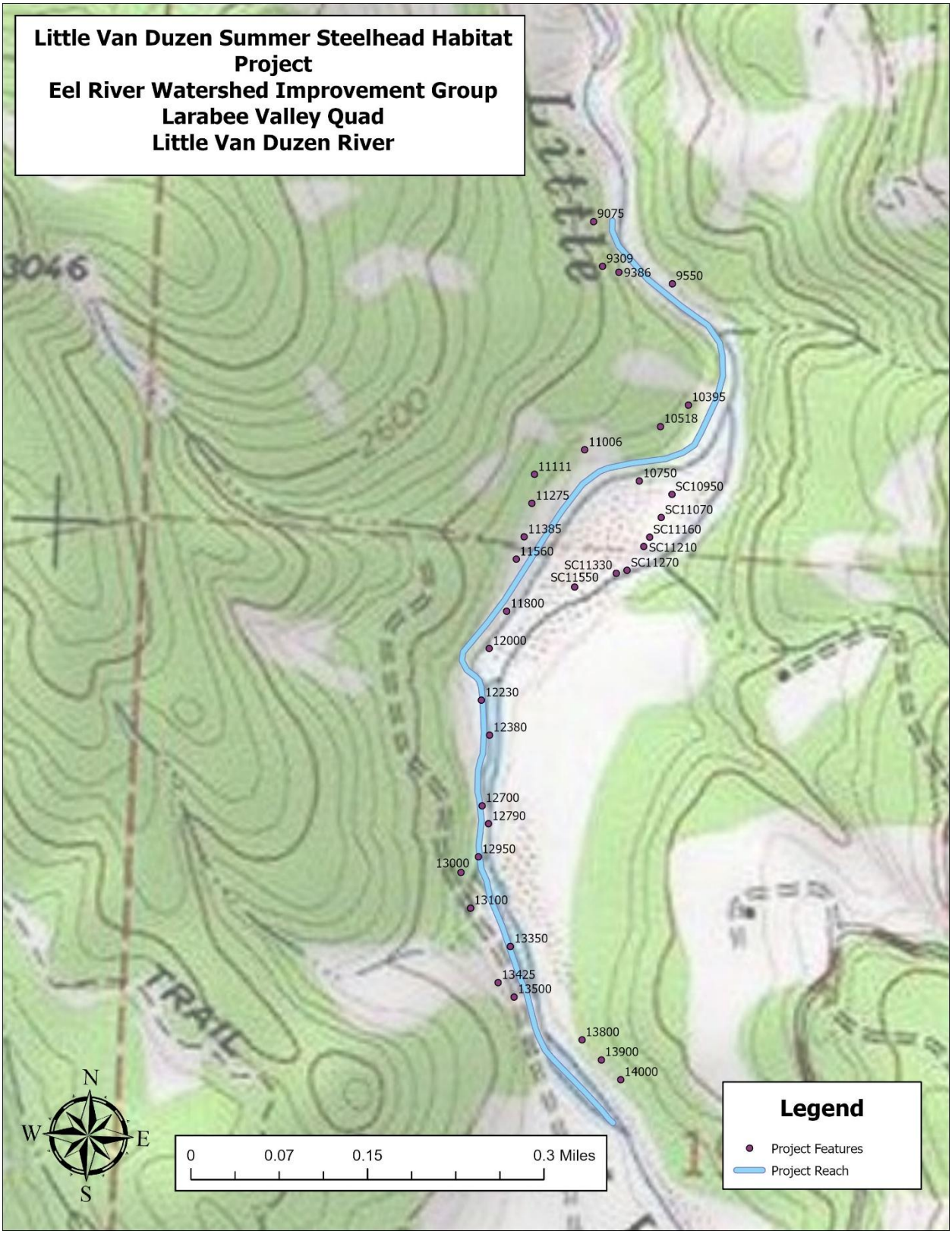
d. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.

e. USFWS Approved fisheries biologists will provide fish relocation data via the Grantee to the CDFW personnel on a form provided by CDFW.

Final structure design and placement will be determined by field consultation between the Grantee and the CDFW Personnel.

Planting of tree seedlings should take place after December 1 or when sufficient rainfall has occurred to ensure the best chance of survival of the seedlings.


Little Van Duzen Summer Steelhead Habitat Project
Eel River Watershed Improvement Group
Humboldt County
Watershed Map
Del Norte
Siskiyou
Humboldt
Trinity
Mendocino
Eureka
Dinsmore
MCCLELLAN MOUNTAIN
BUCK MOUNTAIN
5145 ft
CHARLES MOUNTAIN
4490 ft
4127 ft
RED MOUNTAIN
SWAYBACK RIDGE
GREEN MOUNTAIN
5875 ft
Wilderness Mount Lassic
Burr Creek
Mill Creek
Thompson Creek
Horse Creek
Martin Creek
Tunnel Creek
Baker Creek
Boulder Flat Creek
Larrabee Creek
Haxfield Creek
Van Duzen River
King Range National Conservation Area
Trinity National Forest
36
N
S
E
W
0
1.5
3
6 Miles
Project Reach
Little Van Duzen River


Little Van Duzen Summer Steelhead Habitat Project
Eel River Watershed Improvement Group
Larabee Valley Quad
Little Van Duzen River
Little
3046
2600
TRAIL
9075
9309
9386
9550
10395
10518
11006
11111
10750
SC10950
11275
SC11070
11385
SC11160
SC11210
11560
SC11330
SC11270
SC11550
11800
12000
12230
12380
12700
12790
12950
13000
13100
13350
13425
13500
13800
13900
14000
N
W
E
S
0
0.07
0.15
0.3 Miles
Legend
Project Features
Project Reach

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ascaphus truei	Pacific tailed frog	AAABA01010	None	None	SSC
Rana aurora	northern red-legged frog	AAABH01021	None	None	SSC
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	AAABH01051	None	None	SSC
Rhyacotriton variegatus	southern torrent salamander	AAAAJ01020	None	None	SSC
Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP | WL
Astur atricapillus	American goshawk	ABNKC12061	None	None	SSC
Astur cooperii	Coopers hawk	ABNKC12040	None	None	WL
Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC
Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP
Chaetura vauxi	Vauxs swift	ABNUA03020	None	None	SSC
Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	-
Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC
Psiloscops flammeolus	flammulated owl	ABNSB01020	None	None	-
Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC
Empidonax traillii	willow flycatcher	ABPAE33040	None	Endangered	-
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-
Oncorhynchus mykiss irideus pop. 48	steelhead - northern California DPS summer-run	AFCHA0213P	Threatened	Endangered	-
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	AFCHA0213Q	Threatened	None	SSC
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	SSC
Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Atractelmis wawona	Wawona riffle beetle	IICOL58010	None	None	-
Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC
Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-
Martes caurina humboldtensis	Humboldt marten	AMAJF01017	Threatened	Endangered	SSC
Pekania pennanti	Fisher	AMAJF01020	None	None	SSC
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Bassariscus astutus raptor	northern California ringtail	AMAJE01014	None	None	FP
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-
Myotis evotis	long-eared myotis	AMACC01070	None	None	-
Myotis thysanodes	fringed myotis	AMACC01090	None	None	-
Myotis volans	long-legged myotis	AMACC01110	None	None	-
Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-
Monadenia infumata setosa	Trinity bristle snail	IMGASC7080	None	Threatened	-
Ancotrema voyanum	hooded lancetooth	IMGAS36130	None	None	-
Noyo intersessa	Ten Mile shoulderband	IMGASC5070	None	None	-
Anodonta californiensis	California floater	IMBIV04220	None	None	-
Actinemys marmorata	northwestern pond turtle	ARAAD02031	Proposed Threatened	None	SSC
North Central Coast Summer Steelhead Stream	North Central Coast Summer Steelhead Stream	CARA2634CA	None	None	-
Upland Douglas Fir Forest	Upland Douglas Fir Forest	CTT82420CA	None	None	-
Meesia triquetra	three-ranked hump moss	NBMUS4L020	None	None	-
Ptilidium californicum	Pacific fuzzwort	NBHEP2U010	None	None	-
Sulcaria badia	grooved beard lichen	NLTEST0030	None	None	-
Scytinium siskiyouense	Siskiyou jellyskin lichen	NLTES34580	None	None	-
Usnea longissima	Methuselahs beard lichen	NLLEC5P420	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Allium hoffmanii	Beegum onion	PMLIL02150	None	None	-
Sanicula tracyi	Tracys sanicle	PDAPI1Z0K0	None	None	-
Anisocarpus scabridus	scabrid alpine tarplant	PDASTDU020	None	None	-
Arnica spathulata	Klamath arnica	PDAST0Q0M0	None	None	-
Calycadenia micrantha	small-flowered calycadenia	PDAST1P0C0	None	None	-
Erigeron maniopotamicus	Mad River fleabane daisy	PDASTE1050	None	None	-
Erigeron robustior	robust daisy	PDAST3M134	None	None	-
Hemizonia congesta ssp. tracyi	Tracys tarplant	PDAST4R067	None	None	-
Packera bolanderi var. bolanderi	seacoast ragwort	PDAST8H0H1	None	None	-
Wyethia longicaulis	Humboldt County wyethia	PDAST9X0A0	None	None	-
Howellia aquatilis	water howellia	PDCAM0A010	Delisted	None	-
Sabulina decumbens	Lassics sandwort	PDCAR0G0Y0	None	None	-
Silene bolanderi	Bolanders catchfly	PDCAR0U2L0	None	None	-
Silene nelsonii	Nelsons stringflower	PDCAR0U2J0	None	None	-
Sedum flavidum	pale yellow stonecrop	PDCRA0A0L2	None	None	-
Sedum laxum ssp. heckneri	Heckners stonecrop	PDCRA0A0L3	None	None	-
Carex praticola	northern meadow sedge	PMCYP03B20	None	None	-
Carex scabriuscula	Siskiyou sedge	PMCYP03C40	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Arctostaphylos hispidula	Howells manzanita	PDERI04230	None	None	-
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	PDERI04271	None	None	-
Astragalus agnicidus	Humboldt County milk-vetch	PDFAB0F080	None	Endangered	-
Astragalus rattanii var. rattanii	Rattans milk-vetch	PDFAB0F7E2	None	None	-
Astragalus umbraticus	Bald Mountain milk-vetch	PDFAB0F990	None	None	-
Hosackia yollabolliensis	Yolla Bolly Mtns. birds-foot trefoil	PDFAB2A1F0	None	None	-
Lathyrus biflorus	two-flowered pea	PDFAB25180	None	None	-
Lathyrus glandulosus	sticky pea	PDFAB251A0	None	None	-
Lupinus constancei	Lassics lupine	PDFAB2B490	Endangered	Endangered	-
Lupinus elmeri	South Fork Mountain lupine	PDFAB2B1G0	None	None	-
Thermopsis robusta	robust false lupine	PDFAB3Z0D0	None	None	-
Ribes laxiflorum	trailing black currant	PDGRO020V0	None	None	-
Lycopus uniflorus	northern bugleweed	PDLAM0X080	None	None	-
Erythronium oregonum	giant fawn lily	PMLIL0U0C0	None	None	-
Erythronium revolutum	coast fawn lily	PMLIL0U0F0	None	None	-
Fritillaria glauca	Siskiyou fritillaria	PMLIL0V090	None	None	-
Fritillaria purdyi	Purdys fritillary	PMLIL0V0H0	None	None	-
Lilium rubescens	redwood lily	PMLIL1A0N0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Lilium washingtonianum ssp. purpurascens	purple-flowered Washington lily	PMLIL1A0R2	None	None	-
Lycopodium clavatum	running-pine	PPLYC01080	None	None	-
Iliamna latibracteata	California globe mallow	PDMAL0K040	None	None	-
Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0	None	None	-
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	PDMAL110F9	None	None	-
Veratrum insolitum	Siskiyou false-hellebore	PMLIL25040	None	None	-
Pityopus californicus	California pinefoot	PDMON05010	None	None	-
Claytonia serpenticola	serpentine spring beauty	PDPOR03140	None	None	-
Montia howellii	Howells montia	PDPOR05070	None	None	-
Epilobium septentrionale	Humboldt County fuchsia	PDONA06110	None	None	-
Cypripedium fasciculatum	clustered ladys-slipper	PMORC0Q060	None	None	-
Cypripedium montanum	mountain ladys-slipper	PMORC0Q080	None	None	-
Neottia cordata	heart-leaved twayblade	PMORC1N060	None	None	-
Platanthera ephemerantha	white-flowered rein orchid	PMORC1X050	None	None	-
Platanthera stricta	slender bog-orchid	PMORC1Y0P0	None	None	-
Kopsiopsis hookeri	small groundcone	PDORO01010	None	None	-
Pleuropogon refractus	nodding semaphore grass	PMPOA4Y080	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Collomia tracyi	Tracys collomia	PDPLM020B0	None	None	-
Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-
Leptosiphon aureus	bristly leptosiphon	PDPLM09010	None	None	-
Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-
Navarretia leucocephala ssp. bakeri	Bakers navarretia	PDPLM0C0E1	None	None	-
Coptis laciniata	Oregon goldthread	PDRAN0A020	None	None	-
Mitellastra caulescens	leafy-stemmed mitrewort	PDSAX0N020	None	None	-

Angel Creek Fish Passage Design *(Project ID: 1736390) 2026*

Introduction:

The Sonoma Resource Conservation District (Grantee) will conduct planning and design activities for The Angel Creek Fish Passage Project which will develop 100% engineered designs and complete permit applications to replace three fish passage barriers on Angel Creek, a tributary to Mill Creek in the Russian River watershed. The project will restore access to approximately 1 mile of habitat for endangered Coho Salmon and 1.5 miles of habitat for threatened steelhead trout, as well as improve hydrologic and geomorphic function through barrier removal and associated habitat restoration. The project lies within the Mill Creek watershed which is a priority area for salmonid recovery.

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* Volume 1, Section XII which provides design criteria and best practices for fish passage at road-stream crossings

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The proposed project is located along Angel Creek, a tributary to Mill Creek within the Russian River watershed in western Sonoma County, California. The project is situated within approximately the first 0.2 miles upstream of the confluence with Mill Creek, which flows into Dry Creek and ultimately the Russian River. The project focuses on three culvert crossings where Soward Ranch Road intersects Angel Creek and an adjacent tributary. The site is accessed via Mill Creek Road from Westside Road near Healdsburg and is located in a rural, forested landscape. The project area lies within the Mill Creek watershed, a known priority area for salmonid recovery, and is also within an area affected by the 2020 Walbridge Fire.

Project central coordinates: 38.6065631, -122.980873

Project Description:

The Angel Creek Fish Passage Design Project is a crucial component of a broader watershed restoration strategy aimed at improving the ecological health and connectivity of the Russian River watershed. By replacing the three culvert barriers, the project will enhance fish passage not only in Angel Creek but also contribute to overall ecological connectivity within the watershed. Increased connectivity is a key step in restoring natural hydrologic processes, improving water quality, and supporting the life cycles of anadromous fish species, particularly steelhead trout and Coho Salmon.

Fish passage barriers have been identified as a limiting factor to species survival in the Central California Coast Coho Salmon Recovery Plan, the Coastal Multispecies Recovery Plan, and the California Salmon Strategy. Barriers on Angel Creek were specifically identified as a priority in the SHaRP plan. Upper Mill Creek, near the project site, provides some of the highest-quality summer rearing habitat in the watershed and maintains flow in most years.

The culverts were assessed by the California Department of Fish and Wildlife in October 2023 and determined to be barriers for both juvenile and adult fish, classified as temporal barriers on Angel Creek and a complete barrier on the tributary to Angel Creek. The proposed design will replace the existing circular culverts with bottomless arch culverts that restore natural channel conditions and fish passage, thereby improving ecological function and supporting the recovery and population resilience of threatened and endangered anadromous species.

Over the last decade, Sonoma County has experienced 25 local emergencies and disasters, and stream crossings play a critical role in protecting public access, utility infrastructure, and emergency egress while also supporting aquatic connectivity. The 2020 Walbridge Fire increased post-fire impacts such as flooding, landslides, and debris jams. As a result, the area has been identified by the California Department of Transportation as a disadvantaged community, and this project will improve resilience at three critical infrastructure crossings by incorporating design standards that account for future 100-year storm events.

The upstream culvert on the tributary to Angel Creek is currently crushed and completely blocked, causing road overtopping during large storm events and placing the road at risk of failure. This risk is expected to increase under future climate conditions. In addition, scour at the downstream ends of the existing culverts, combined with nearby bank failures, threatens public safety and infrastructure. Replacing these culverts with bottomless arch structures will reduce the likelihood of clogging and outlet scour, while associated bank stabilization will protect the roadway from undermining, reduce unsafe driving conditions, and improve emergency access.

The 2020 Walbridge Fire burned a substantial portion of the Angel Creek and Mill Creek watersheds, removing riparian vegetation and fundamentally altering stream and hillslope processes. Loss of canopy cover reduced shade, increasing solar exposure and contributing to elevated water temperatures and reduced habitat quality for salmonids. Post-fire conditions have also facilitated the spread of invasive plant species that outcompete native riparian vegetation, further limiting recovery of streamside function and habitat complexity. In addition, fire-weakened trees and destabilized hillslopes have increased the delivery of post-fire debris, including large wood and fine sediment, to the channel. While some wood inputs can benefit habitat, excessive or poorly distributed material can exacerbate channel instability and constrain flow at undersized culverts. Together, these changes have contributed to riparian dysfunction in Angel Creek, characterized by reduced shading, impaired vegetative structure, altered sediment dynamics, and decreased resilience to high-flow events and drought conditions.

Materials:

The approach for the Angel Creek Fish Passage Design Project was developed through a combination of prior watershed assessments, agency coordination, and the application of established fish passage and stream restoration science.

The project will follow a science-based design process that integrates field data collection, hydraulic modeling, and multidisciplinary technical review. Site-specific data, including topographic surveys, geomorphic reference reach analysis, hydrologic data, and biological resource assessments, will be used to develop design alternatives that meet CDFW fish passage criteria and accommodate all life stages across a range of flow conditions. Hydraulic and sediment transport modeling will evaluate channel stability, sediment continuity, and fish passage performance under both existing and future climate scenarios.

The inclusion of climate-informed hydrology, including increased peak flow projections, along with sediment transport analysis and habitat restoration planning, ensures the final design will be resilient to future conditions and provide long-term ecological benefits.

Tasks, Deliverables, and Timelines:

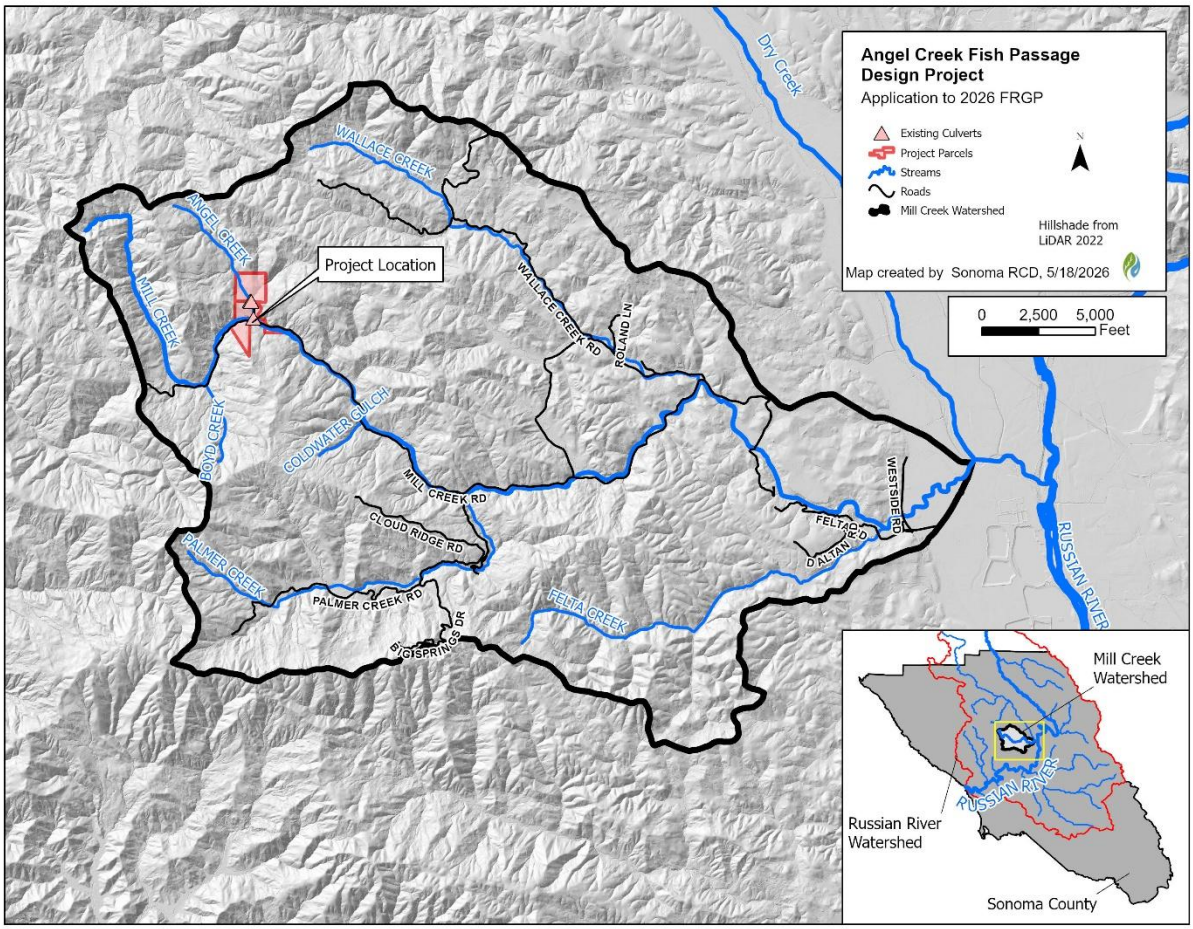
All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window.

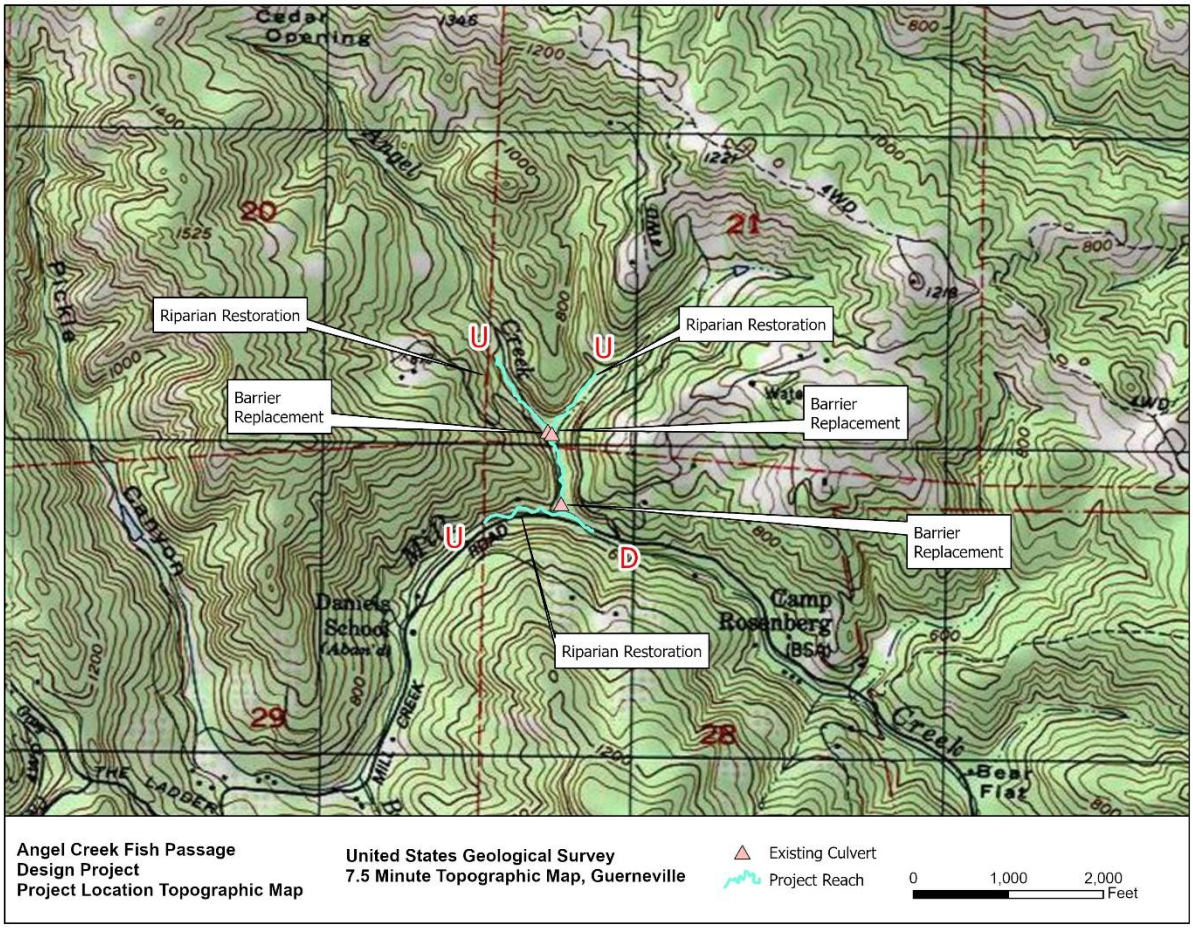
Task Name	Start Date	Activity Description	Deliverables
Task 1. Project Management and Administration	5/1/2027	Sonoma RCD will provide oversight and administration, including but not limited to securing agreements (with CDFW, NOAA, permitting agencies, subcontractors, and landowners), scheduling, project team coordination, grant administration, tracking deliverables, invoicing, and reporting. Sonoma RCD will develop and host a Technical Advisory Committee (TAC) consisting of CDFW, NOAA, Kashia Band of Pomo Indians, Trout Unlimited, and technical specialists to guide design development of the project. The tasks will be completed by the Sonoma RCD project team comprising the Executive Director, Watershed Restoration Program Manager, Project Manager, Engineering Director, Grants Compliance Specialist, Project Assistant, and Communications Engagement Manager.	a. Grant administration, invoicing, and reporting - Quarterly beginning September 2027 b. Design Consultant procurement – December 2027 c. Landowner and Subconsultant Coordination and Contracting – Ongoing d. Creation of TAC – December 2027
Task 2. Design	8/15/2027	Sonoma RCD will provide engineering services to develop engineered designs for the project. The design phase will include an options analysis, basis of design report including hydrology and hydraulic modeling results, 30% engineered designs, 65% engineered designs, 90% engineered designs, and 100% engineered designs, invasive removal and riparian planting plans. Sonoma RCD will consult with Trout Unlimited, the design subconsultant, and partner experts participating on the TAC (CDFW, NOAA, Kashia Band of Pomo Indians, and other technical specialists) to provide technical oversight on project design. Michael Love and Associates (MLA) will conduct the land survey, reference reach survey, pebble counts, and post-processing of land survey data (CAD surface, profile, etc.). Additionally, MLA	a. Site Assessment - March 2028 b. Options Analysis Report – March 2028 c. Basis of Design Report – June 2028 d. 30% Designs and Engineering Plan – September 2028 e. 65% Designs and Engineering Plan – December 2028

		will provide technical review of the fish passage basis of design, 30%, 65%, and 90% phases. Local restoration experts from ESA will provide technical review of restoration plans in the reaches adjacent to the crossings. The review will examine engineering methods and calculations at the basis of design 30%, and 65% design stages to ensure a strong basis for design, as well as review 90% and 100% designs plans and specifications for clarity and completeness to ensure they are construction ready. A geotechnical engineering firm will be contracted to conduct a soils investigation and a geotechnical report. A culvert vendor will be contracted to provide design information and structural engineering services for the culvert foundation and end treatments. Finally, Sonoma RCD will contract with a local hydrology firm to provide design oversight and review of the 65% design stage.	f. 90% Designs and Engineering Plan – March 2029 g. 100% Designs and Engineering Plan – April 2029 h. Five TAC Meetings to review drafts of Options Analysis Report, BOD, 30%, 65%, 90% reports – February 2028 through February 2029 i. Invasive Removal and Riparian Planting Plan – December 2028 j. Geotechnical Report – June 2028 k. Culvert Vendor Review of Design Specs – December 2028
Task 3. Permitting	9/1/2028	Sonoma RCD will complete necessary application permits needed to construct the project. Under the Habitat Restoration and Enhancement Act of 2014 (HREA), CDFW and the Regional Water Quality Control Board (RWQCB) established a streamlined approval process for small habitat restoration projects. This streamlined approval process is a 60-day timeline and includes a Clean Water Act (CWA) Section 401 Water Quality Certification from the RWQCB and F&GC Section 1602 SAA and California Endangered Species Act Section 2018 Incidental Take coverage from CDFW. Sonoma RCD project team will request CDFW and RWQCB	a. Aquatic Resources Delineation, Cultural Resources, Paleontological Resources, USFWS, NMFS Biological Assessments Reports – April 2029 b. Monitoring Plan – April 2029 c. USACE 404 Permit Application – September 2029 d. CDFW 1600 Streambed

		approvals under the HREA process, and request US Army Corps of Engineers (USACE) coverage under the streamlined CWA Section 404/Rivers and Harbors Act (RHA) Section 10 Nationwide Permit Program (NWP). Sonoma RCD will complete applications for a CEQA Notice of Exemption and the following Permit Sonoma permits: Building, Zoning, and Roiling. Sonoma RCD has an exemption for county Grading Permits. Sonoma RCD will contract with a qualified environmental firm to conduct resource surveys associated with habitat assessment, aquatic resources delineation, cultural resources, paleontological, and biological assessments to meet the requirements outlined by the USACE, US Fish and Wildlife Service (USFWS), and NOAA. The consultant will also be tasked with preparing a monitoring plan to adhere to all regulatory permitting agencies requirements. Sonoma RCD project team will coordinate with the landowner on all permit applications, respond to permit review comments.	Alteration Agreement application – September 2029 e. NCRWQCB 401 Certification Application – September 2029 f. Permit Sonoma Permit applications – September 2029 g. CEQA Notice of Exemption Filing – September 2029
Task 4. Monitoring	9/1/2027	Trout Unlimited, sub-recipient on the project, will conduct pre-barrier removal snorkeling surveys and data analysis in Angel Creek for three years. This will include collecting occupancy data of juvenile salmonids above and below the project sites, data on the presence of large woody debris within the project reach, water quality data (temperature and dissolved oxygen) within the project reach, coordination with landowners, and a summary report illustrating the survey findings. Pre-project snorkel surveys and habitat assessments will document current distribution and occupancy of juvenile	a. Snorkeling, woody debris, and water quality survey report – March 2028, December 2028, and December 2029

		salmonids above and below the barriers, helping to confirm the extent of habitat limitation and inform design decisions. Collection of water quality metrics, large woody debris presence, and habitat conditions will allow the project team to quantify existing constraints on rearing habitat and stream function. These data will not only guide a more effective and site-specific project design but will also enable comparison with post-implementation conditions to measure project success.	


Angel Creek Fish Passage Design Project
Application to 2026 FRGP
Existing Culverts
Project Parcels
Streams
Roads
Mill Creek Watershed
Hillshade from LiDAR 2022
Map created by Sonoma RCD, 5/18/2026
0 2,500 5,000 Feet
Project Location
Dry Creek
WALLACE CREEK
ANGEL CREEK
MILL CREEK
WALLACE CREEK RD
ROLAND LN
BOYD CREEK
COLDWATER GULCH
MILL CREEK RD
CLOUD RIDGE RD
WESTSIDE RD
FELTA RD
D'ALTAN
PALMER CREEK
PALMER CREEK RD
FELTA CREEK
BIG SPRINGS DR
RUSSIAN RIVER
Mill Creek Watershed
Russian River Watershed
Sonoma County


Riparian Restoration
Riparian Restoration
Barrier Replacement
Barrier Replacement
Barrier Replacement
Riparian Restoration
U
U
U
D
Angel Creek Fish Passage Design Project
Project Location Topographic Map
United States Geological Survey
7.5 Minute Topographic Map, Guerneville
Existing Culvert
Project Reach
0
1,000
2,000
Feet

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ambystoma californiense pop. 3	California tiger salamander - Sonoma County DPS	AAAAA01183	Endangered	Threatened	WL
Dicamptodon ensatus	California giant salamander	AAAAH01020	None	None	SSC
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	AAABH01051	None	None	SSC
Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC
Taricha rivularis	red-bellied newt	AAAAF02020	None	None	SSC
Accipiter striatus	sharp-shinned hawk	ABNKC12020	None	None	WL
Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP | WL
Astur cooperii	Coopers hawk	ABNKC12040	None	None	WL
Buteo swainsoni	Swainsons hawk	ABNKC19070	None	Threatened	-
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP
Cerorhinca monocerata	rhinoceros auklet	ABNNN11010	None	None	WL
Fratercula cirrhata	tufted puffin	ABNNN12010	None	None	SSC
Chaetura vauxi	Vauxs swift	ABNUA03020	None	None	SSC
Ardea alba	great egret	ABNGA04040	None	None	-
Ardea herodias	great blue heron	ABNGA04010	None	None	-
Egretta thula	snowy egret	ABNGA06030	None	None	-
Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-
Antigone canadensis canadensis	lesser sandhill crane	ABNMK01011	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Antigone canadensis tabida	greater sandhill crane	ABNMK01014	None	Threatened	FP
Progne subis	purple martin	ABPAU01010	None	None	SSC
Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-
Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC
Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC
Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC
Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC
Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	-
Nannopterum auritum	double-crested cormorant	ABNFD01020	None	None	WL
Melanerpes lewis	Lewis woodpecker	ABNYF04010	None	None	-
Asio otus	long-eared owl	ABNSB13010	None	None	SSC
Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-
Selasphorus rufus	rufous hummingbird	ABNUC51020	None	None	-
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC
Syncaris pacifica	California freshwater shrimp	ICMAL27010	Endangered	Endangered	-
Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Hesperoleucus symmetricus symmetricus	central California roach	AFCJB19021	None	None	SSC
Hesperoleucus venustus navarroensis	northern coastal roach	AFCJB19031	None	None	SSC
Lavinia exilicauda exilicauda	Sacramento hitch	AFCJB19012	None	None	SSC
Mylopharodon conocephalus	hardhead	AFCJB25010	None	None	SSC
Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Lampetra ayresii	western river lamprey	AFBAA02030	None	None	SSC
Lampetra richardsoni	western brook lamprey	AFBAA02180	None	None	SSC
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	-
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	SSC
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	SSC
Andrena blennospermatis	Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	-
Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Bombus crotchii	Crotchs bumble bee	IIHYM24480	None	Candidate Endangered	-
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Bombus pensylvanicus	American bumble bee	IIHYM24260	None	None	-
Dubiraphia giulianii	Giulianis dubiraphian riffle beetle	IICOL5A020	None	None	-
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	Proposed Threatened	None	-
Speyeria zerene behrensii	Behrens silverspot butterfly	IILEPJ6088	Endangered	None	-
Speyeria zerene myrtleae	Myrtles silverspot butterfly	IILEPJ608C	Endangered	None	-
Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC
Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Lasiurus frantzii	western red bat	AMACC05080	None	None	SSC
Myotis evotis	long-eared myotis	AMACC01070	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Myotis thysanodes	fringed myotis	AMACC01090	None	None	-
Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-
Anodonta californiensis	California floater	IMBIV04220	None	None	-
Gonidea angulata	western ridged mussel	IMBIV19010	None	None	-
Actinemys marmorata	northwestern pond turtle	ARAAD02031	Proposed Threatened	None	SSC
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	-
Coastal Brackish Marsh	Coastal Brackish Marsh	CTT52200CA	None	None	-
Coastal Terrace Prairie	Coastal Terrace Prairie	CTT41100CA	None	None	-
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-
Northern Vernal Pool	Northern Vernal Pool	CTT44100CA	None	None	-
Fissidens pauperculus	minute pocket moss	NBMUS2W0U0	None	None	-
Usnea longissima	Methuselahs beard lichen	NLLEC5P420	None	None	-
Chlorogalum pomeridianum var. minus	dwarf soaproot	PMLIL0G042	None	None	-
Lomatium repostum	Napa lomatium	PDAPI1B1M0	None	None	-
Perideridia gairdneri ssp. gairdneri	California Gairdners yampah	PDAPI1N062	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Asclepias solanoana	serpentine milkweed	PDASC021R0	None	None	-
Blennosperma bakeri	Sonoma sunshine	PDAST1A010	Endangered	Endangered	-
Centromadia parryi ssp. parryi	pappose tarplant	PDAST4R0P2	None	None	-
Erigeron biolettii	streamside daisy	PDAST3M5H0	None	None	-
Erigeron greenei	Greenes narrow-leaved daisy	PDAST3M5G0	None	None	-
Erigeron serpentinus	serpentine daisy	PDAST3M5M0	None	None	-
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	PDAST4R0W1	None	None	-
Hesperevax caulescens	hogwallow starfish	PDASTE5020	None	None	-
Hesperevax sparsiflora var. brevifolia	short-leaved evax	PDASTE5011	None	None	-
Lasthenia burkei	Burkes goldfields	PDAST5L010	Endangered	Endangered	-
Lasthenia californica ssp. bakeri	Bakers goldfields	PDAST5L0C4	None	None	-
Lasthenia californica ssp. macrantha	perennial goldfields	PDAST5L0C5	None	None	-
Lessingia arachnoidea	Crystal Springs lessingia	PDAST5S0C0	None	None	-
Lessingia hololeuca	woolly-headed lessingia	PDAST5S030	None	None	-
Microseris paludosa	marsh microseris	PDAST6E0D0	None	None	-
Cryptantha dissita	serpentine cryptantha	PDBOR0A0H2	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Erysimum concinnum	bluff wallflower	PDBRA160E3	None	None	-
Erysimum franciscanum	San Francisco wallflower	PDBRA160A0	None	None	-
Streptanthus barbiger	bearded jewelflower	PDBRA2G040	None	None	-
Streptanthus brachiatus ssp. hoffmanii	Freeds jewelflower	PDBRA2G071	None	None	-
Streptanthus glandulosus ssp. hoffmanii	Hoffmans bristly jewelflower	PDBRA2G0J4	None	None	-
Streptanthus morrisonii ssp. hirtiflorus	Dorrs Cabin jewelflower	PDBRA2G0S2	None	None	-
Streptanthus morrisonii ssp. morrisonii	Morrisons jewelflower	PDBRA2G0S3	None	None	-
Downingia pusilla	dwarf downingia	PDCAM060C0	None	None	-
Eastwoodiella californica	swamp harebell	PDCAM02060	None	None	-
Legenere limosa	legenere	PDCAM0C010	None	None	-
Viburnum ellipticum	oval-leaved viburnum	PDCPR07080	None	None	-
Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	PDCON04032	None	None	-
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	PDCON040D2	None	None	-
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	PDCUS01111	None	None	-
Carex comosa	bristly sedge	PMCYP032Y0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Eriophorum gracile	slender cottongrass	PMCYP0A080	None	None	-
Rhynchospora alba	white beaked-rush	PMCYP0N010	None	None	-
Rhynchospora californica	California beaked-rush	PMCYP0N060	None	None	-
Rhynchospora capitellata	brownish beaked-rush	PMCYP0N080	None	None	-
Rhynchospora globularis	round-headed beaked-rush	PMCYP0N0W0	None	None	-
Arctostaphylos bakeri ssp. bakeri	Bakers manzanita	PDERI04221	None	Rare	-
Arctostaphylos bakeri ssp. sublaevis	Cedars manzanita	PDERI04222	None	Rare	-
Arctostaphylos densiflora	Vine Hill manzanita	PDERI040C0	None	Endangered	-
Arctostaphylos hispidula	Howells manzanita	PDERI04230	None	None	-
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	PDERI041G4	None	None	-
Amorpha californica var. napensis	Napa false indigo	PDFAB08012	None	None	-
Astragalus breweri	Brewers milk-vetch	PDFAB0F1J0	None	None	-
Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-
Lupinus tidestromii	Tidestroms lupine	PDFAB2B3Y0	Endangered	Endangered	-
Trifolium amoenum	two-fork clover	PDFAB40040	Endangered	None	-
Trifolium buckwestiorum	Santa Cruz clover	PDFAB402W0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-
Iris longipetala	coast iris	PMIRI092E0	None	None	-
Monardella viridis	green monardella	PDLAM180Q2	None	None	-
Calochortus raichei	Cedars fairy-lantern	PMLIL0D1L0	None	None	-
Calochortus uniflorus	pink star-tulip	PMLIL0D1F0	None	None	-
Erythronium helenae	St. Helena fawn lily	PMLIL0U060	None	None	-
Fritillaria liliacea	fragrant fritillary	PMLIL0V0C0	None	None	-
Lilium pardalinum ssp. pitkinense	Pitkin Marsh lily	PMLIL1A0H3	Endangered	Endangered	-
Limnanthes vinculans	Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	-
Hesperolinon congestum	Marin western flax	PDLIN01060	Threatened	Threatened	-
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	PDMAL11012	None	None	-
Sidalcea malviflora ssp. purpurea	purple-stemmed checkerbloom	PDMAL110FL	None	None	-
Clarkia imbricata	Vine Hill clarkia	PDONA050K0	Endangered	Endangered	-
Cypripedium californicum	California ladys-slipper	PMORC0Q040	None	None	-
Cypripedium montanum	mountain ladys-slipper	PMORC0Q080	None	None	-
Platanthera ephemerantha	white-flowered rein orchid	PMORC1X050	None	None	-
Platanthera leptopetala	narrow-petaled rein orchid	PMORC1X100	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-
Castilleja uliginosa	Pitkin Marsh paintbrush	PDSCR0D380	None	Endangered	-
Cordylanthus tenuis ssp. brunneus	serpentine birds-beak	PDSCR0J0S1	None	None	-
Cordylanthus tenuis ssp. capillaris	Pennells birds-beak	PDSCR0J0S2	Endangered	Rare	-
Kopsiopsis hookeri	small groundcone	PDORO01010	None	None	-
Erythranthe nudata	bare monkeyflower	PDSCR1B200	None	None	-
Agrostis blasdalei	Blasdales bent grass	PMPOA04060	None	None	-
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	PMPOA07012	Endangered	None	-
Calamagrostis bolanderi	Bolanders reed grass	PMPOA17010	None	None	-
Calamagrostis crassiglumis	Thurbers reed grass	PMPOA17070	None	None	-
Calamagrostis ophitidis	serpentine reed grass	PMPOA170V0	None	None	-
Elymus californicus	California bottle-brush grass	PMPOA2H0W0	None	None	-
Pleuropogon hooverianus	North Coast semaphore grass	PMPOA4Y070	None	Threatened	-
Collomia diversifolia	serpentine collomia	PDPLM02020	None	None	-
Gilia capitata ssp. chamissonis	blue coast gilia	PDPLM040B3	None	None	-
Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Gilia capitata ssp. tomentosa	woolly-headed gilia	PDPLM040B9	None	None	-
Leptosiphon aureus	bristly leptosiphon	PDPLM09010	None	None	-
Leptosiphon jepsonii	Jepsons leptosiphon	PDPLM09140	None	None	-
Navarretia leucocephala ssp. bakeri	Bakers navarretia	PDPLM0C0E1	None	None	-
Navarretia leucocephala ssp. plieantha	many-flowered navarretia	PDPLM0C0E5	Endangered	Endangered	-
Chorizanthe valida	Sonoma spineflower	PDPGN040V0	Endangered	Endangered	-
Eriogonum cedrorum	Cedars buckwheat	PDPGN087A0	None	None	-
Eriogonum ternatum	ternate buckwheat	PDPGN085R0	None	None	-
Delphinium bakeri	Bakers larkspur	PDRAN0B050	Endangered	Endangered	-
Delphinium luteum	golden larkspur	PDRAN0B0Z0	Endangered	Rare	-
Ranunculus lobbii	Lobbs aquatic buttercup	PDRAN0L1J0	None	None	-
Ceanothus confusus	Rincon Ridge ceanothus	PDRHA04220	None	None	-
Ceanothus foliosus var. vineatus	Vine Hill ceanothus	PDRHA040D6	None	None	-
Ceanothus gloriosus var. exaltatus	glory brush	PDRHA040F4	None	None	-
Ceanothus purpureus	holly-leaved ceanothus	PDRHA04160	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Holodiscus discolor var. cedrorum	Cedars oceanspray	PDROS0V041	None	None	-
Horkelia tenuiloba	thin-lobed horkelia	PDROS0W0E0	None	None	-
Brodiaea leptandra	narrow-anthered brodiaea	PMLIL0C022	None	None	-

East Austin Creek Large Wood Augmentation

(Project ID: 1736402) 2026

Introduction:

The Trout Unlimited, Inc. (Grantee) will implement The East Austin Creek Large Wood Augmentation project (Project) which will increase the density of large wood and key pieces in 1.78 miles of East Austin Creek and 0.38 miles of Gilliam Creek by installing 50 non-engineered large wood structures (31 in East Austin Creek, 19 in Gilliam Creek). Wood loading will exceed 4 key pieces/100 m in East Austin Creek and 11 key pieces/100 m in Gilliam Creek, meeting NMFS CCC Recovery Plan targets (NMFS 2012).

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* Volume II, Section XI

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The project is approximately 3 miles (straight-line) from Cazadero in Sonoma County, California. Reach A begins at the confluence of East Austin and Thompson creeks and extends 9,400 feet (1.78 miles) upstream along East

Austin Creek. Reach B begins about 1 mile upstream of the East Austin-Gilliam confluence and extends 2,020 feet (0.38 miles), spanning the confluence of Gilliam and Schoolhouse creeks. The downstream end of Reach A is at 38.5706121N, -123.0501740W; Reach B is at 38.56498N, -123.03697W. Reach A and B are within the Township 8 North, Range West within the Mount Diablo Principal Meridian, Cazadero USGS 7.5-minute quad.

Driving Directions: From Santa Rosa, take Highway 101 north to River Road, then Mark West Springs Road, continue on River Road approximately 15 miles, turn right on Armstrong Woods Road, and follow signs through Armstrong Redwoods State Natural Reserve to Bullfrog Pond Road.

Project central coordinates: 38.57061, -123.05017

Project Description:

The Project will increase density of key pieces and large wood based on the NOAA recovery targets. The benefits to increasing density of large wood is to improve spawning and rearing habitat for Coho and Chinook salmon and steelhead trout in East Austin Creek, a tributary to Austin Creek in the Russian River watershed (Reach A), and Gilliam Creek, a tributary to East Austin Creek (Reach B), by installing large wood structures that increase stream complexity, pool frequency and depth, high-flow refugia, cover and protection from predation, and summer and winter rearing habitat.

Project objectives are to install 50 non-engineered large wood structures at a low risk site in the East Austin Creek watershed, a core restoration priority stream for Central California Coast (CCC) coho salmon, to increase stream complexity and expand rearing habitat. Specifically, the project will enhance habitat by: (1) increasing scour to create, deepen, and maintain pool habitat; (2) improving shelter by providing cover from predators, reducing water velocities, and lessening density-dependent competition; and (3) creating refugia with low-velocity habitat outside the main high-flow channel. These objectives will be achieved by installing 31 non-engineered large wood structures composed of 123 key pieces along a 1.78-mile reach of East Austin Creek (Reach A) and 19 non-engineered large wood structures composed of 75 key pieces along a 0.38-mile reach of Gilliam Creek (Reach B).

Both project reaches will meet the VERY GOOD wood loading densities identified in the NMFS CCC Coho recovery plan (>4 key pieces/100m for East Austin Creek and >11 key pieces/100m for Gilliam Creek). Installation of these structures will restore natural processes that increase channel complexity, scour pools, build riffles, and create cover.

The contractor will harvest all trees for the project from areas adjacent to the stream reaches identified for large wood augmentation. After construction is complete, the contractor will install erosion control measures and rehabilitate the project site. All bare soils that could convey runoff to the stream will be packed with native woody slash or mulched with rice straw or weed-free erosion control materials. The contractor will document pre-implementation and post-implementation project conditions. Prior to construction, the contractor will take photos at all 50 structure sites.

After construction is complete, the contractor will take photos at the same locations to document installed structures and resulting habitat conditions. TU will conduct first-winter monitoring and prepare a First Winter Observations Summary memorandum documenting the largest flow and/or storm events occurring in the project area, photo and/or video documentation, feature stability, and observed channel response. Monitoring will assess feature performance, large wood stability, pool development, habitat complexity, and the creation of low-velocity refuge habitat through observations of scour, sediment sorting, cover, and channel adjustment around installed structures. Post-implementation conditions will be compared to pre-project conditions to evaluate progress toward project objectives of increasing pool habitat, cover, and rearing habitat for salmonids.

<u>Materials:</u>

The Project will use the following materials.

- Office supplies (pens, paper, envelopes)
- Postage
- Rite in the Rain notebooks
- Flagging and stakes
- Full size field signage

- Monitoring equipment (thermometer, 100 meter tape)
- Fish relocation/exclusion material (fencing, t-posts, sandbags, buckets, nets, etc.)
- Mulching/erosion control material (straw)
- Log tags and rigging materials
- Anchoring materials (threaded bar, hex nuts, drill bits)
- Chainsaws
- Heavy equipment (excavator, skidder)
- Logs

Tasks, Deliverables, and Timelines:

All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window.

Task Name	Start Date	Activity Description	Deliverables
Task 1 - Project Management and Administration	4/1/2027	TU North Coast Coho Project (NCCP) Project Manager will provide technical and administrative services associated with performing and completing the work for this Project, including managing this Agreement, assuring all permits are finalized, administering subcontracts, invoicing and payments, completing the Build America, Buy America Act certification, finalizing progress and annual reports, and drafting and finalizing the final report. NCCP Project Director will provide oversight of the Project. TU California Operations and Grants Manager and NCCP Field Accountant will help process invoices, track financial information, ensure grant and procurement compliance, and develop reports. NCCP Project Manager will deliver the final landowner access agreements prior to receiving a Notice to Proceed. The landowner access agreement will state that the landowner cannot limit the distribution of data collected on	Final Landowner Access Agreement - Prior to receiving Notice to Proceed; Executed Subcontractor Agreements - Prior to receiving the Notice to Proceed; Invoices & Progress Reports: Due with each submitted invoice or at least quarterly Annual Reports - Due no later than November 15 of each year; Draft Final Report - January 31, 2031;

		private land unless the law specifically exempts such data from disclosure.	Final Report - March 1, 2031; Final Invoice - April 15, 2031; Cost Share Documentation Form - March 1, 2031 Build America, Buy America Act Certification Form: March 1, 2031
Task 2 - Environmental Compliance	4/1/2027	TU will follow CEQA requirements throughout the life of the project. TU will use the FRGP programmatic permits (Clean Water Act Section 401 Water Quality Certification and Notice of Applicability & Section 404 of the Clean Water Act: Regional General Permit 12). TU will be responsible for securing the final 1602 Lake and Streambed Alteration Agreement. TU will follow all permit conditions.	Resource Survey Documentation - July 31, 2028, or prior to construction activities; Final LSAA 1602 - July 31, 2028, or prior to receiving Notice to Proceed; Final Water Quality Monitoring Plan - July 31, 2028, or prior to construction activities; Water Quality Monitoring Documentation - Weekly during construction when applicable
Task 2.1 (subtask) - Resource Survey Documentation & Permits	4/1/2027	TU will provide proof all required threatened and endangered species surveys, biological monitoring, and required reasonable measures to cultural, archeological, paleontological, and biological resources, including native species and their habitat have been completed. TU will secure all required permits for the Project and will follow all	Resource Survey Reports - July 31, 2028, or prior to construction activities; Final LSAA 1602 - July 31, 2028,

		permit conditions. TU will be responsible for securing the CDFW 1602 agreement. California State Parks, Sonoma-Mendocino Coast District (Parks), will assess potential cultural resources and provide a report on the findings. Parks will conduct a Northwest Information Center Records Search, conduct site surveys, coordinate with Native American Tribes, and provide a report detailing site pre-history and history, survey results, and avoidance and minimization measures, if required. Parks will provide botanical resources support for this project through a California Natural Diversity Database query, botanical field surveys, and associated mapping and reporting to support environmental compliance. TU will conduct nesting migratory bird surveys and Parks will conduct Northern Spotted Owl surveys if construction begins before August 1. Although, it is anticipated that construction will commence after August 1 to avoid any potential impacts to NSO and/or migratory birds. The project is located within the range of critical habitat for Marbled Murrelet (MAMU), however based on cursory field assessments and feedback from State Parks staff, there is not suitable nesting habitat within the project area. Therefore Parks will conduct a MAMU habitat survey and associated memo for tree harvest areas to avoid any potential impacts to critical habitat and/or nesting MAMU. If suitable habitat is present or species are identified within the project area, the implementation schedule will be postponed until after 9/15 to avoid impacts to the species.	or prior to receiving Notice to Proceed

		Pacific Watershed Associates will assess potential paleontological resources and prepare a report summarizing the findings, including survey results and any required avoidance and minimization measures, if required. Gold Ridge RCD will conduct California Freshwater Shrimp, California red-legged frog, and foothill yellow-legged frog surveys prior to construction. If suitable habitat is present or species are identified within the project area, appropriate avoidance and minimization measures will be implemented, and construction crews will be trained by qualified staff on applicable protection procedures for the duration of the construction period, and a qualified biologist will be available to relocate the frogs during construction.	
Task 2.2 (subtask) - Water Quality Monitoring Documentation	4/1/2027	TU will provide a Final Water Quality Monitoring Plan to the Grantor. TU and BWM will monitor and report water quality during construction activities. Parameters, such as but not limited to dissolved oxygen, temperature, pH, and turbidity shall be reported. BWM will record Water Quality data and report to TU weekly. TU will submit Water Quality monitoring data sheets weekly throughout construction, as required.	Final Water Quality Monitoring Plan - July 31, 2028, or prior to construction activities; Water Quality Monitoring Documentation - Weekly during construction when applicable
Task 3 - Pre-Implementation and Data Collection	4/1/2027	Trees will be marked and flagged in preparation of felling operations. Any changes to project designs or locations will be discussed with the CDFW Grant Manager. Anchor points will be painted, and flags will be hung at feature locations. Any avoidance areas that may have resulted from CEQA surveys will be clearly designated with flagging. BWM will take pre-implementation photos at all 50 (31 Reach A, 19 Reach B) unique structures. BWM will purchase construction materials such as hardware, hand tools, drill bits, safety supplies, office supplies, and decontamination chemicals.	Pre-project implementation photos - July 31, 2028, or prior to construction activities

		Additional tools and materials may be purchased or repaired as needed throughout implementation.	
Task 4 - Implementation	8/1/2028	TU and BWM will have a pre-construction field meeting to review permit conditions, design plans, and discuss other logistics. Construction may occur any time after June 15th and is likely to occur after August 1st to avoid Northern Spotted Owls if adequate surveys cannot be conducted. Construction will occur during the low flow seasonal work period and will follow best management practices as outlined by the permits. It is expected that construction will occur for 10-12 weeks over one year, with an additional year of final treatment if needed. A final Notice to Proceed will be secured prior to construction. All habitat improvements will follow techniques described in the California Salmonids Stream Habitat Restoration Manual, Volumes I and Volume II and Fish Bulletin 184. Construction activities include site prep and mobilization, tree procurement, log placement, anchoring, and site stabilization. BWM will subcontract with a Licensed Timber Operator and will place logs into project streams by direct falling, rigging gear, and/or with heavy equipment (i.e. excavator and skidder). Trees will be cut down and winched into place or dug out with an excavator. BWM will anchor structures into place. 31 instream structures consisting of 123 pieces of large wood will be installed in East Austin Creek (Reach A) and 19 instream structures consisting of 75 pieces of large wood will be installed in Gilliam Creek (Reach B) over one construction season, with an additional year of final treatment if needed. BWM will record water quality data during construction and report weekly to TU. TU will submit Water Quality monitoring data sheets weekly throughout construction, as required.	Fish relocation data sheet (and any additional species status species relocation data requirements, as needed) - to be submitted with annual report(s) 50 unique structures (31 Reach A, 19 Reach B) with 198 log pieces (123 Reach A, 75 Reach B) - October 31, 2029; Actual performance measures per site, as specified in the 2026 PSN - January 31, 2031 Copies of communication materials (2 social media posts; 1 article or blog post) with description of when and how disseminated - January 31, 2031

		Fish relocation and exclusion fencing will be utilized solely at the two stream crossings required for (minimal use) rubber-tired grapple skidder and tracked excavator equipment access. Based on personal communication with CDFW Region 3, the grant manager and/or a qualified fisheries biologist consultant will lead all fish relocation activities, with support from TU, CA State Parks, and BWM. Prior to any in-channel access, temporary fish exclusion measures will be installed as necessary to isolate stream crossing areas and clear and exclude salmonids and other aquatic species from entering the active (minimal use) equipment access zones. Fish relocation will be conducted by qualified fisheries personnel in accordance with permit requirements and accepted fisheries management practices. If suitable habitat or special-status species are identified during pre-project resource surveys, and as required by permit conditions and applicable avoidance, minimization, and mitigation measures, staff from TU, CA State Parks, and the Gold Ridge Resource Conservation District (RCD) will provide biological monitoring during project implementation activities where such habitats or species may be encountered or affected. A qualified RCD biologist will provide training to project managers and BWM project leads on species identification, avoidance, and monitoring techniques; oversee biological monitoring activities related to California freshwater shrimp and California red-legged frog protection and permit compliance; and be available on call to provide assistance with any required species relocation efforts. No equipment maintenance will be performed within or	

		near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the channel and flood plain areas at the end of each workday. All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol. During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas. Disturbed channel banks will be stabilized with biodegradable matting and/or weed-free straw. The TU Project Manager will work with the TU CA Communications Manager to develop and produce communication materials covering project implementation activities and the final completed project. The Communications Manager will produce at least two social media posts and one article or blog post highlighting the partnership between Trout Unlimited (TU) and California State Parks made possible with funding by FRGP.	
Task 5 - Post-Implementation Surveys and Monitoring	11/1/2028	After each construction season, BWM will collect post-implementation photos and report actual performance metrics including preparing as-built drawings that include feature placement, design changes where applicable,	As-Built Drawings - April 30, 2030; First Winter Observation

		alignment, sizes, and quantity of material added. TU will perform the first winter observations and prepare a First Winter Observations Summary memorandum utilizing a combination of imagery from installed timelapse cameras and field observations, dictated by wet-season site accessibility. The summary will include the largest flow and/or storm precipitation event that occurred in the project area, photos or time-lapse photos/video, observations about how the project is moving towards meeting objectives of the project goal(s), how the features have changed from as-built, and any lessons learned. Post-implementation site photos will be compiled to catalog before and after photos of individual feature locations. This representative sample of up to 10 features will be included in the final report with a complete set of before and after photos delivered electronically.	Summary - April 30, 2029, or April 30 following first winter post-construction activities; Post-Implementation Site Photos - January 31, 2031

Additional Requirements:

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured, including cultural and biological surveys. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife (CDFW).

No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the streambed and flood plain areas at the end of each workday.

All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol.

During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual, 4th Edition (CA Restoration Manual)* or *other approved guidelines and manuals for salmon and steelhead habitat restoration*.

The Grantee shall notify CDFW at least five working days before the project site is de-watered and the stream flow diverted and submit a Water Quality Monitoring Plan and Dewatering Plan to CDFW for State Water Resources Control Board approval at least 30 days before the activity. The notification will provide a reasonable time for CDFW personnel to oversee the implementation of the water diversion plan and the safe removal and relocation of salmonids

and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:

a. Fish dewatering and relocation activities shall only occur between June 15 and October 31 of each year.

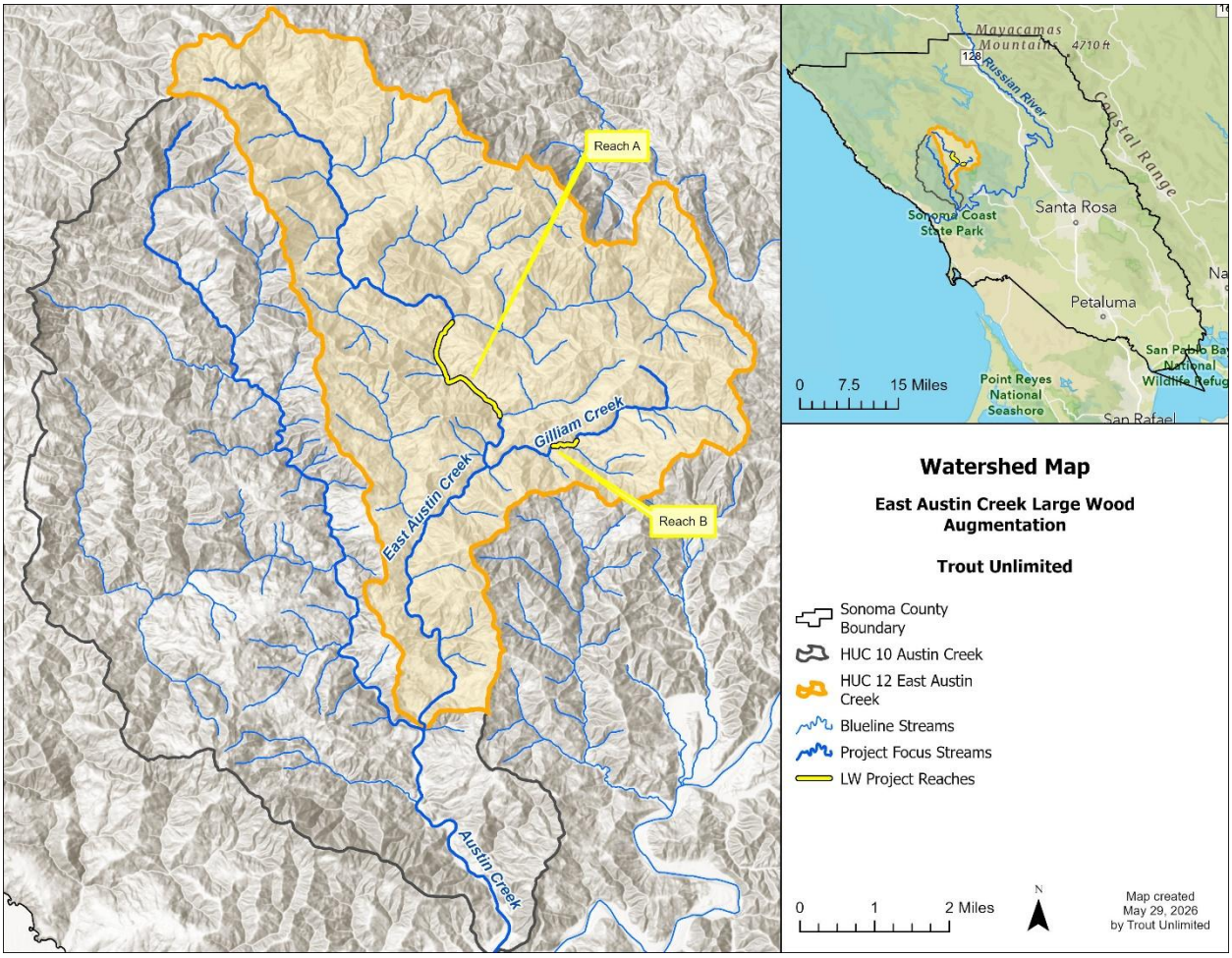
b. Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.

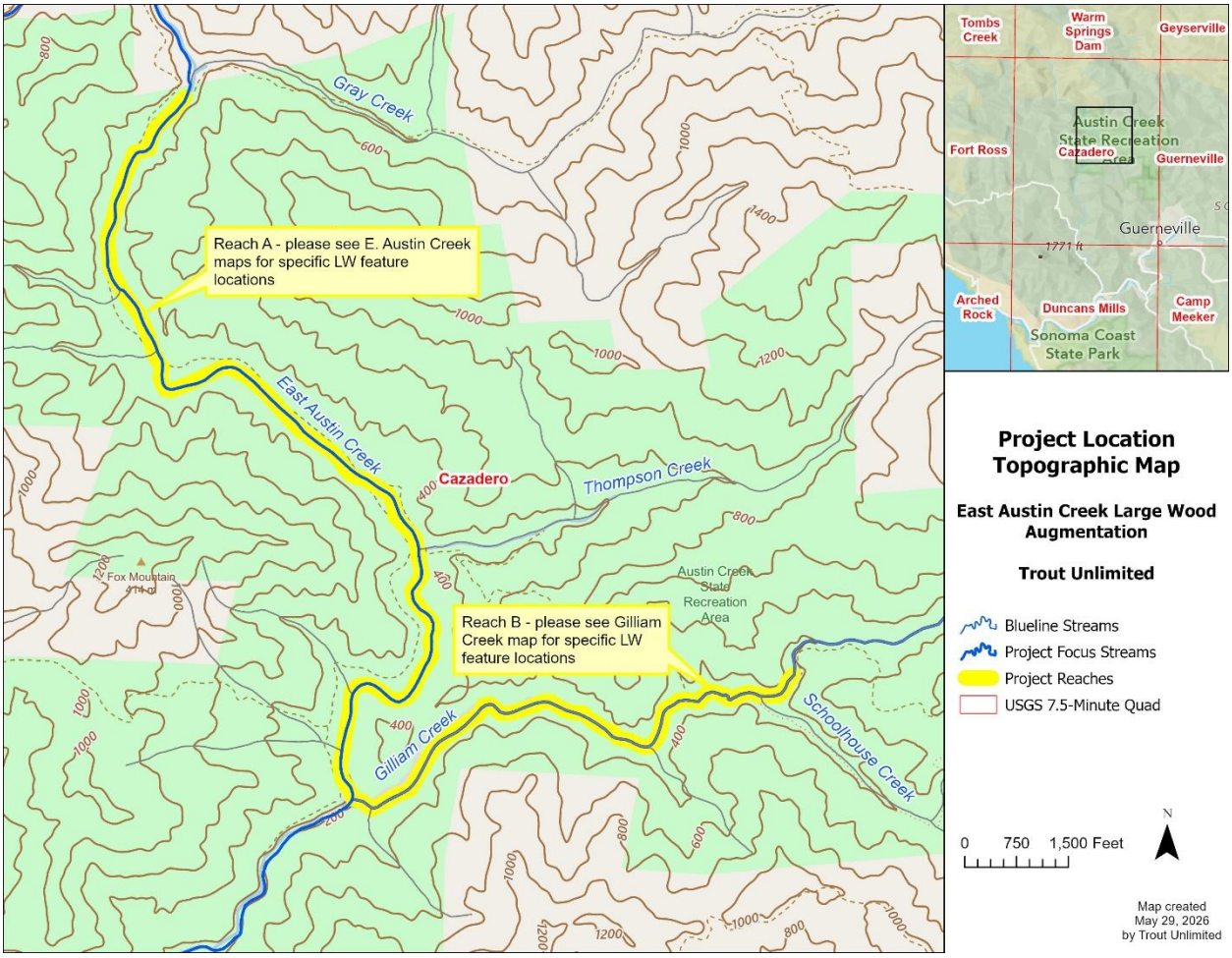
c. The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the USACE Regional General Permit and National Marine Fisheries Service (NMFS) Biological Opinion.

d. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.

e. USFWS Approved fisheries biologists will provide fish relocation data via the Grantee to the CDFW personnel on a form provided by CDFW.

Final structure design and placement will be determined by field consultation between the Grantee and the CDFW Personnel.


Reach A
Reach B
Gilliam Creek
East Austin Creek
Austin Creek
Mayacamas Mountains 4710 ft
128
Russian River
Coastal Range
Santa Rosa
Sonoma Coast State Park
Petaluma
Point Reyes National Seashore
0 7.5 15 Miles
Watershed Map
East Austin Creek Large Wood Augmentation
Trout Unlimited
Sonoma County Boundary
HUC 10 Austin Creek
HUC 12 East Austin Creek
Blueline Streams
Project Focus Streams
LW Project Reaches
0 1 2 Miles
N
Map created May 29, 2026 by Trout Unlimited


Reach A - please see E. Austin Creek maps for specific LW feature locations
Reach B - please see Gilliam Creek map for specific LW feature locations
Gray Creek
East Austin Creek
Cazadero
Thompson Creek
Gilliam Creek
Schoolhouse Creek
Austin Creek State Recreation Area
Fox Mountain
Tombs Creek
Warm Springs Dam
Geyserville
Fort Ross
Guerneville
Arched Rock
Duncans Mills
Camp Meeker
Sonoma Coast State Park
1771 ft
Project Location Topographic Map
East Austin Creek Large Wood Augmentation
Trout Unlimited
Blueline Streams
Project Focus Streams
Project Reaches
USGS 7.5-Minute Quad
0 750 1,500 Feet
N
Map created May 29, 2026 by Trout Unlimited

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ambystoma californiense pop. 3	California tiger salamander - Sonoma County DPS	AAAAA01183	Endangered	Threatened	WL
Dicamptodon ensatus	California giant salamander	AAAAH01020	None	None	SSC
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	AAABH01051	None	None	SSC
Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC
Taricha rivularis	red-bellied newt	AAAAF02020	None	None	SSC
Accipiter striatus	sharp-shinned hawk	ABNKC12020	None	None	WL
Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP | WL
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP
Cerorhinca monocerata	rhinoceros auklet	ABNNN11010	None	None	WL
Fratercula cirrhata	tufted puffin	ABNNN12010	None	None	SSC
Ardea alba	great egret	ABNGA04040	None	None	-
Ardea herodias	great blue heron	ABNGA04010	None	None	-
Egretta thula	snowy egret	ABNGA06030	None	None	-
Progne subis	purple martin	ABPAU01010	None	None	SSC
Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-
Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	-
Nannopterum auritum	double-crested cormorant	ABNFD01020	None	None	WL
Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC
Syncaris pacifica	California freshwater shrimp	ICMAL27010	Endangered	Endangered	-
Archoplites interruptus	Sacramento perch	AFCQB07010	None	None	SSC
Hesperoleucus symmetricus symmetricus	central California roach	AFCJB19021	None	None	SSC
Hesperoleucus venustus navarroensis	northern coastal roach	AFCJB19031	None	None	SSC
Lavinia exilicauda exilicauda	Sacramento hitch	AFCJB19012	None	None	SSC
Mylopharodon conocephalus	hardhead	AFCJB25010	None	None	SSC
Hysterocarpus traskii pomo	Russian River tule perch	AFCQK02011	None	None	SSC
Spirinchus thaleichthys	longfin smelt	AFCHB03010	None	Threatened	-
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Lampetra richardsoni	western brook lamprey	AFBAA02180	None	None	SSC
Oncorhynchus keta	chum salmon	AFCHA02020	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	-
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	AFCHA0213Q	Threatened	None	SSC
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	SSC
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	SSC
Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-
Bombus crotchii	Crotchs bumble bee	IIHYM24480	None	Candidate Endangered	-
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Dubiraphia giulianii	Giulianis dubiraphian riffle beetle	IICOL5A020	None	None	-
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	Proposed Threatened	None	-
Speyeria zerene behrensii	Behrens silverspot butterfly	IILEPJ6088	Endangered	None	-
Speyeria zerene myrtleae	Myrtles silverspot butterfly	IILEPJ608C	Endangered	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC
Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Lasiurus frantzii	western red bat	AMACC05080	None	None	SSC
Myotis evotis	long-eared myotis	AMACC01070	None	None	-
Myotis thysanodes	fringed myotis	AMACC01090	None	None	-
Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-
Anodonta californiensis	California floater	IMBIV04220	None	None	-
Gonidea angulata	western ridged mussel	IMBIV19010	None	None	-
Actinemys marmorata	northwestern pond turtle	ARAAD02031	Proposed Threatened	None	SSC
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	-
Coastal Brackish Marsh	Coastal Brackish Marsh	CTT52200CA	None	None	-
Coastal Terrace Prairie	Coastal Terrace Prairie	CTT41100CA	None	None	-
Fissidens pauperculus	minute pocket moss	NBMUS2W0U0	None	None	-
Usnea longissima	Methuselahs beard lichen	NLLEC5P420	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ramalina thrausta	angels hair lichen	NLLEC3S340	None	None	-
Chlorogalum pomeridianum var. minus	dwarf soaproot	PMLIL0G042	None	None	-
Lomatium repostum	Napa lomatium	PDAPI1B1M0	None	None	-
Asclepias solanoana	serpentine milkweed	PDASC021R0	None	None	-
Erigeron biolettii	streamside daisy	PDAST3M5H0	None	None	-
Erigeron greenei	Greenes narrow-leaved daisy	PDAST3M5G0	None	None	-
Erigeron serpentinus	serpentine daisy	PDAST3M5M0	None	None	-
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	PDAST4R0W1	None	None	-
Hesperevax sparsiflora var. brevifolia	short-leaved evax	PDASTE5011	None	None	-
Lasthenia californica ssp. macrantha	perennial goldfields	PDAST5L0C5	None	None	-
Lessingia arachnoidea	Crystal Springs lessingia	PDAST5S0C0	None	None	-
Lessingia hololeuca	woolly-headed lessingia	PDAST5S030	None	None	-
Erysimum concinnum	bluff wallflower	PDBRA160E3	None	None	-
Erysimum franciscanum	San Francisco wallflower	PDBRA160A0	None	None	-
Streptanthus barbiger	bearded jewelflower	PDBRA2G040	None	None	-
Streptanthus glandulosus ssp. hoffmanii	Hoffmans bristly jewelflower	PDBRA2G0J4	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Streptanthus morrisonii ssp. hirtiflorus	Dorrs Cabin jewelflower	PDBRA2G0S2	None	None	-
Streptanthus morrisonii ssp. morrisonii	Morrisons jewelflower	PDBRA2G0S3	None	None	-
Eastwoodiella californica	swamp harebell	PDCAM02060	None	None	-
Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	PDCON04032	None	None	-
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	PDCON040D2	None	None	-
Carex comosa	bristly sedge	PMCYP032Y0	None	None	-
Carex saliniformis	deceiving sedge	PMCYP03BY0	None	None	-
Arctostaphylos bakeri ssp. bakeri	Bakers manzanita	PDERI04221	None	Rare	-
Arctostaphylos bakeri ssp. sublaevis	Cedars manzanita	PDERI04222	None	Rare	-
Arctostaphylos hispidula	Howells manzanita	PDERI04230	None	None	-
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	PDERI041G4	None	None	-
Amorpha californica var. napensis	Napa false indigo	PDFAB08012	None	None	-
Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-
Lathyrus palustris	marsh pea	PDFAB250P0	None	None	-
Lupinus tidestromii	Tidestroms lupine	PDFAB2B3Y0	Endangered	Endangered	-
Trifolium amoenum	two-fork clover	PDFAB40040	Endangered	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Trifolium buckwestiorum	Santa Cruz clover	PDFAB402W0	None	None	-
Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-
Iris longipetala	coast iris	PMIRI092E0	None	None	-
Monardella viridis	green monardella	PDLAM180Q2	None	None	-
Trichostema ovatum	San Joaquin bluecurls	PDLAM220A0	None	None	-
Calochortus raichei	Cedars fairy-lantern	PMLIL0D1L0	None	None	-
Calochortus uniflorus	pink star-tulip	PMLIL0D1F0	None	None	-
Fritillaria liliacea	fragrant fritillary	PMLIL0V0C0	None	None	-
Limnanthes vinculans	Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	-
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	PDMAL11012	None	None	-
Sidalcea malviflora ssp. purpurea	purple-stemmed checkerbloom	PDMAL110FL	None	None	-
Cypripedium californicum	California ladys-slipper	PMORC0Q040	None	None	-
Cypripedium montanum	mountain ladys-slipper	PMORC0Q080	None	None	-
Platanthera ephemerantha	white-flowered rein orchid	PMORC1X050	None	None	-
Platanthera leptopetala	narrow-petaled rein orchid	PMORC1X100	None	None	-
Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-
Cordylanthus tenuis ssp. brunneus	serpentine birds-beak	PDSCR0J0S1	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Cordylanthus tenuis ssp. capillaris	Pennells birds-beak	PDSCR0J0S2	Endangered	Rare	-
Kopsiopsis hookeri	small groundcone	PDORO01010	None	None	-
Erythranthe nudata	bare monkeyflower	PDSCR1B200	None	None	-
Agrostis blasdalei	Blasdales bent grass	PMPOA04060	None	None	-
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	PMPOA07012	Endangered	None	-
Calamagrostis ophitidis	serpentine reed grass	PMPOA170V0	None	None	-
Elymus californicus	California bottle-brush grass	PMPOA2H0W0	None	None	-
Pleuropogon hooverianus	North Coast semaphore grass	PMPOA4Y070	None	Threatened	-
Collomia diversifolia	serpentine collomia	PDPLM02020	None	None	-
Gilia capitata ssp. chamissonis	blue coast gilia	PDPLM040B3	None	None	-
Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-
Gilia capitata ssp. tomentosa	woolly-headed gilia	PDPLM040B9	None	None	-
Leptosiphon aureus	bristly leptosiphon	PDPLM09010	None	None	-
Leptosiphon jepsonii	Jepsons leptosiphon	PDPLM09140	None	None	-
Chorizanthe valida	Sonoma spineflower	PDPGN040V0	Endangered	Endangered	-
Eriogonum cedrorum	Cedars buckwheat	PDPGN087A0	None	None	-
Eriogonum ternatum	ternate buckwheat	PDPGN085R0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Delphinium bakeri	Bakers larkspur	PDRAN0B050	Endangered	Endangered	-
Delphinium luteum	golden larkspur	PDRAN0B0Z0	Endangered	Rare	-
Ranunculus lobbii	Lobbs aquatic buttercup	PDRAN0L1J0	None	None	-
Ceanothus confusus	Rincon Ridge ceanothus	PDRHA04220	None	None	-
Ceanothus foliosus var. vineatus	Vine Hill ceanothus	PDRHA040D6	None	None	-
Ceanothus gloriosus var. exaltatus	glory brush	PDRHA040F4	None	None	-
Ceanothus purpureus	holly-leaved ceanothus	PDRHA04160	None	None	-
Holodiscus discolor var. cedrorum	Cedars oceanspray	PDROS0V041	None	None	-
Horkelia tenuiloba	thin-lobed horkelia	PDROS0W0E0	None	None	-
Brodiaea leptandra	narrow-anthered brodiaea	PMLIL0C022	None	None	-

Potrero Creek Fish Passage Alternative Plan/Design Project - Quail Lodge Inc *(Project ID: 1736410) 2026*

Introduction:

The Potrero Creek Fish Passage Alternative Plan/Design Project (Project) will advance current 65% designs (previously funded by California Coastal Conservancy) to 100%, to improve fish passage conditions and ecosystem function along a reach of Potrero Creek located just upstream of the confluence with the Carmel River, within the Quail Lodge and Golf Club. Once implemented, the designed project will improve access to over three miles of spawning and rearing habitat suitable for south-central California coast steelhead.

The Project includes: engineered design planning up to 100% level; resource surveys and reporting; permit application preparation (for geotechnical investigation(s)); and geotechnical investigation(s). The Project will be designed in a manner which follows techniques in the *California Salmonid Stream Habitat Restoration Manual* protocol XII. Fish Passage Design and Implementation.

Trout Unlimited, Inc. (Grantee) shall not proceed with on-the-ground implementation of the geotechnical investigation until all necessary permits, consultations, and/or Notices to Proceed are secured.

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The Project site is located on Potrero Creek, in unincorporated Carmel Valley, Monterey County. Potrero Creek is the first tributary available to Carmel River steelhead when migrating upstream from the ocean (0.2 miles from the confluence, which is four miles from the Pacific Ocean).

Access to the site is from county-maintained road, Rancho San Carlos Road, approximately 1 mile from Carmel Valley Road. Access must be arranged prior to entry to avoid conflict with golfers traversing the course at Quail Lodge and Golf Club.

The Project is centered at approximately: 36.535811199999998, -121.86955

Project Description:

The lower portion of Potrero Creek is dry during most months. Migration to the perennial upper portion of Potrero is limited to higher winter flow events when the Carmel River rises and back-waters into the Quail Golf Course reach of the Potrero and connection flows to the upstream perennial habitat are established.

In 2016 and 2018, Grantee was awarded grants from the California Coastal Conservancy to assess the Quail Golf Course reach, create concept-level designs and a technical memorandum, and create 65% designs and basis of design, to improve habitat conditions. Grantee hired Waterways Consulting (Waterways) to perform these tasks - Waterways concluded that the CDFW and National Marine Fisheries Service design depth and velocity standards are violated over the majority of the window of design flows, and believes the Quail Golf Course reach provides limited opportunity for passage, primarily due to having been narrowed and armored with rock in a manner that has resulted in a uniform V shaped channel. Therefore, the Quail Golf Course reach has been determined to be a velocity barrier with little habitat value.

TU and the design team have met with Quail and have fully discussed the extent and impact (physically and aesthetically) and the expected length of time for construction. The owners, Quail Lodge, now believe that the project will not negatively impact the golf experience (and likely will improve the aesthetics) and are now comfortable moving forward to 100% design and future construction and support this application.

Modification of this velocity barrier will: reduce energy expenditure and delays for migrating adult steelhead; improve post-spawning survival of adults; facilitate access to areas of high-quality spawning habitat and perennially watered rearing areas in the upper watershed; provide improved migration opportunities for out-migrating juveniles; and will maximize migration opportunities for anadromous steelhead in Potrero Creek.

Tasks, Deliverables, and Timelines:

Below tasks, deliverables, and timelines have been proposed by the Grantee. CDFW may make modifications or additions to the table below.

Task Name	Start Date	Activity Description	Deliverables
Task 1 Project Management and Administration	6/1/2027	Grantee will provide technical and administrative services associated with implementation of the Project, including managing the grant, assuring all permits are finalized, securing Project site access, administrating subcontracts, invoicing and payment, drafting and finalizing progress and final reports and managing data.	Quarterly Invoices and Progress Reports due 10 days following each calendar quarter Copies of subcontractor contracts due 8/1/27 Final landowner access agreements due 7/11/27 Draft Final Report due 5/15/28 Final Report and Final Invoice due 7/31/28
Task 2 Environmental Compliance and Permitting	8/1/2027	During design tasks, Grantee, Waterways, and sub-contractors Resource Conservation District of Monterey County (RCD) and Alnus Ecological will investigate local, state and federal permitting needs for geotechnical investigation(s), if geotechnical investigation(s) is	Copies of CEQA Exemption and 1602 for Geotechnical Investigations (if needed) due 11/1/2027

		determined to be necessary. A Fish and Game Code section 1602 Lake and Streambed Alteration notification will be submitted, if required for the geotechnical investigation(s). RCD will sub-contract with the Esselen Tribe of Monterey County to consult regarding cultural resources and cultural monitoring during the geotechnical investigation, if a geotechnical investigation is determined to be necessary. TU will sub-contract with Alnus Ecological for assistance with permits and any other biological resource-related needs. RCD will coordinate with the County of Monterey concerning permits, and to estimate cost and time for local planning and building permits associated with future construction. RCD and Alnus will develop a report on permits pathways for permits for future construction. RCD will sub-contract with a qualified consultant to conduct CEQA-compliant cultural resource investigations and create an associated report. RCD and Alnus will conduct biological surveys and create a report	Cultural, archeological, paleontological resource investigation report due 10/1/2027 Biological Resource Report due 10/1/2027 Investigation of permit conditions and permit pathways for future implementation (considering FRGP funding or no FRGP funding for Implementation) due 4/31/2028
Task 3 - Submittal of Current Engineering Products for Review and Comment	6/1/2027	Grantee will provide copies of: Topographic Survey; Hydrologic and Hydraulic Analysis; Concept Level Plans & Alternatives Analysis; 35% Design, Specifications, Cost Estimate; 65% Design, Specifications, Cost Estimate; and Basis of Design Report. Those products will be delivered to CDFW for review and comment at the start of this Project.	Submittal of all products to date for CDFW review and comment due 6/1/2027
Task 4 - Revise 65% Designs, Specifications and Cost Estimate and Revise Basis of Design Report	7/15/2027	As necessary, based on CDFW review and comment, the 65% design plans will be revised by Waterways.	Revised Final 65% Design Plans, specifications and cost estimates due 9/1/2027

Task 5 Geotechnical Investigation	8/1/2027	CMAG Engineering will conduct a geotechnical investigation as a subcontractor to Waterways, and prepare an associated report of their findings.	Geotechnical Investigations Report due 2/1/2028
Task 6 90% Designs, Specifications, Cost Estimate and Revised Design Basis Tech Memo	9/1/2027	Waterways will review comments received from TU, landowners, CDFW, and permitting agencies on the 65% drawings and will incorporate revisions into the 90% plans, cost estimate, and basis of design, where appropriate.	90% Design drawings due 2/1/2028 Cost Estimate due 2/1/2028 Basis of Design due 2/1/2028
Task 7 100% Designs, Specifications and Cost Estimate	3/1/2028	Waterways will review comments received from TU, landowners, CDFW, and permitting agencies on the 90% drawings and will incorporate revisions into the 100% submittal, where appropriate. The 100% design documents will be at a suitable level to competitively bid and construct the project.	100% stamped Design Drawings due 5/1/2028 Cost Estimate due 5/1/2028 Technical specifications due 5/1/2028

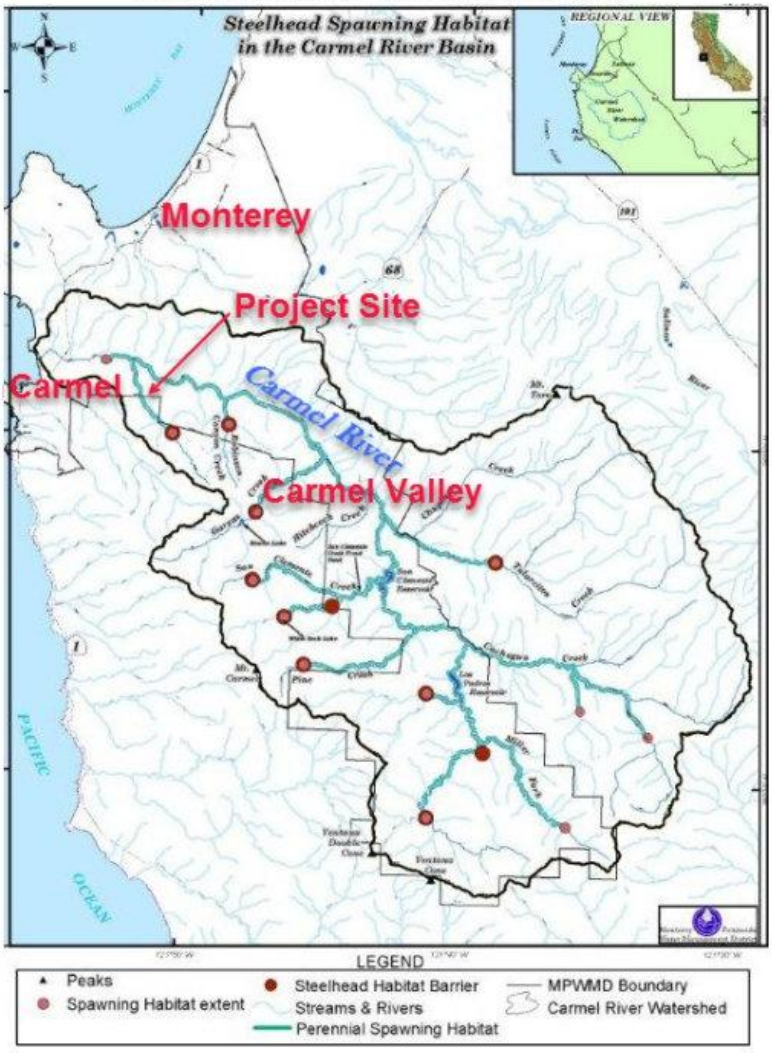
Additional Requirements:

Geotechnical investigation start and end dates are at the discretion of CDFW.

No equipment maintenance will be performed within or near the stream where pollutants (such as petroleum products) from the equipment may enter the stream via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the stream (including floodplain areas) at the end of each workday. All trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly.

POTRERO CREEK FISH PASSAGE
ALTERNATIVE DESIGN PROJECT / QUAIL
Quail Lodge Inc.
Proposal Number: 1736410 Proposal Type: PD Plan/Design

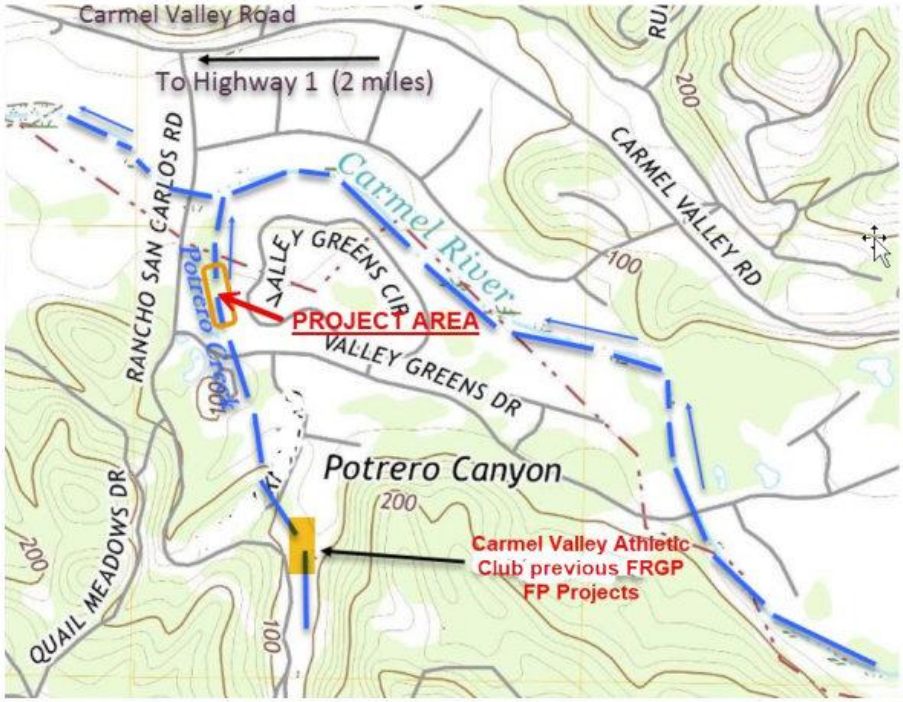
Supplemental Information
Watershed Map and Site Location



POTRERO CREEK FISH PASSAGE
ALTERNATIVE DESIGN PROJECT / QUAIL
Quail Lodge Inc.
Proposal Number: 1736410 Proposal Type: PD Plan/Design

Supplemental Information
Topographic Survey

SEASIDE QUADRANGLE
CALIFORNIA-MONTEREY CO.
7.5-MINUTE SERIES



Monterey OE N	Marina	Salinas
Monterey	Seaside	Spreckels
Soberanes Point	Mount Carmel	Carmel Valley

ADJOINING 7.5' QUADRANGLES

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC
Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Lavinia exilicauda harengus	Monterey hitch	AFCJB19013	None	None	SSC
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Oncorhynchus mykiss irideus pop. 9	steelhead - south-central California coast DPS	AFCHA0209H	Threatened	None	SSC
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Neotoma macrotis luciana	Monterey dusky-footed woodrat	AMAFF08083	None	None	-
Sorex ornatus salarius	Monterey shrew	AMABA01105	None	None	SSC
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Anniella pulchra	northern legless lizard	ARACC01020	None	None	SSC
Actinemys pallida	southwestern pond turtle	ARAAD02032	Proposed Threatened	None	SSC
Trifolium polyodon	Pacific Grove clover	PDFAB402H0	None	Rare	-
Calochortus uniflorus	pink star-tulip	PMLIL0D1F0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Malacothamnus involucratus	Carmel Valley bushmallow	PDMAL0Q0B1	None	None	-
Pinus radiata	Monterey pine	PGPIN040V0	None	None	-

Carmel River Fish Passage Alternative Plan/Design Project
Flavens Crossing *(Project ID: 1736411) 2026*

Introduction:

The Carmel River Fish Passage Alternative Plan/Design Project – Flavens Crossing (Project) is a planning project to remediate an existing migration barrier in the main-stem Carmel River which has been identified as the #11 Priority barrier in the Carmel River system.

The Project includes: biological, cultural, and paleontological surveys; permit application preparation (for geotechnical investigation(s)); geotechnical investigation(s); and engineered design planning up to 100% design level. The Project will be designed in a manner which follows techniques in the *California Salmonid Stream Habitat Restoration Manual* protocol XII. Fish Passage Design and Implementation.

Trout Unlimited, Inc. (Grantee) shall not proceed with on-the-ground implementation of the geotechnical investigation until all necessary permits, consultations, and/or Notices to Proceed are secured.

Does the project involve the construction of beaver dam analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The Project site is located in unincorporated Carmel Valley, Monterey County, approximately 0.5 river miles downstream of the confluence of Cachagua Creek and the mainstem Carmel River.

Access to the Project site is from county-maintained Cachagua Road, approximately 1 mile from Nason Road. The Project site lies on vacant undeveloped land on Assessor's Parcel Number 417-101-031-000, owned by the Monterey Peninsula Regional Park District. Being undeveloped, the Parcel has no address but lies between 17900 and 17990 Cachagua Road.

Although this land is owned by the Monterey Peninsula Regional Park District, public access is currently limited by a locked gate and is by pre-approved permission only.

The Project is centered at approximately: 36.405470000000001, -121.66497

Project Description:

The Project will help achieve federal, state and local steelhead recovery goals and priorities for the Carmel River.

Modification or removal of the barrier at the Project site will reduce energy expenditure and delays for migrating adult steelhead, improve post-spawning survival of adults, facilitate access to areas of high-quality spawning habitat and perennially watered rearing areas in the upper watershed and provide full migration opportunities for juvenile volitional upstream and downstream migration.

This Project is the design phase. Deliverables will include: permitting (for geotechnical investigation(s)); full assessment of current conditions; CEQA surveys; alternative analysis; and up to 100% civil, structural and geotechnical engineering plans.

Final implementation of the selected preferred alternative will complete the removal of all actively used fords/barriers upstream of the former San Clemente Dam on the Carmel River (except for Los Padres Dam).

Materials:

The Project will not utilize materials.

Tasks, Deliverables, and Timelines:

Below tasks, deliverables, and timelines have been proposed by the Grantee. CDFW may make modifications or additions to the table below.

Task Name	Start Date	Activity Description	Deliverables
Task 1 Project Management and Administration	6/1/2027	Grantee will provide technical and administrative services associated with implementation of the Project, including managing the grant, assuring all permits are finalized, securing Project site access, administrating subcontracts, invoicing and payment, drafting and finalizing progress and final reports and managing data.	a) Quarterly Invoices and Progress Reports due 10 days following each calendar quarter b) Copies of subcontracts due 8/1/27 c) Final landowner access agreements due 7/11/27 d) Draft final progress report due 1/1/29 e) Final progress report and final invoice due 2/1/2029
Task 2 Site Investigation	7/1/2027	Waterways Consulting Inc. (Waterways), landowner, and Grantee will meet with CDFW staff at the Project site to review field conditions, data collected to date, and discuss potential alternative treatments. The meeting will include discussions of the Project's unique opportunities and constraints, and a preliminary set of design objectives that will guide additional data collection.	a) Meeting summary 11/31/27 b) Results of additional site investigations, if applicable 11/31/27

Task 3 Environmental Compliance and Permitting	7/1/2027	During design tasks, Grantee, Waterways, and sub-contractors Resource Conservation District of Monterey County (RCD) and Alnus Ecological will investigate local, state and federal permitting needs that may apply to the geotechnical investigation(s). A Fish and Game Code section 1602 Lake and Streambed Alteration notification will be submitted, if required for the geotechnical investigation(s). RCD will sub-contract with the Esselen Tribe of Monterey County to consult regarding cultural resources and cultural monitoring during the geotechnical investigation, if a geotechnical investigation is determined to be necessary. TU will sub-contract with Alnus Ecological for assistance with permits and any other biological resource-related needs. RCD will coordinate with the County of Monterey concerning permits, and to estimate cost and time for local planning and building permits associated with future construction. RCD and Alnus will develop a report on permits pathways for permits for future construction. RCD will sub-contract with a qualified consultant to conduct CEQA-compliant cultural resource investigations and create an associated report. RCD and Alnus will conduct biological surveys and create an associated report.	a) Copies of CEQA Exemption and 1602 notification for geotechnical investigations (if required) due 9/1/2027 b) Cultural, archeological, paleontological resource investigation report due 12/1/2027. d) Biological Resource Report due 12/1/2027. e) Investigation of permit conditions and permits pathways for future implementation (considering FRGP funding or no FRGP funding for Implementation) due 12/1/2028.
Task 4 - Submittal of Current Engineering Products for Review and Comment	6/1/2027	Beginning in 2016, TU and sub-contractor Waterways Consulting have utilized California Coastal Conservancy grant monies to complete a topographic survey, hydrologic and hydraulic analysis, and concept-level engineered design plans with an alternatives analysis. Task 4 includes submittal of all products to CDFW for review and comment, to inform whether there is a need for additional assessments.	Submittal of current engineering products for CDFW review and comment due 6/1/2027

Task 5 Selection of Preferred Alternative	7/1/2027	A Preferred Alternative will be selected for advancing design.	Report summarizing selection of the preferred alternative due 8/15/2027
Task 6 35% Designs, Specifications and Cost Estimate	8/15/2027	Once a preferred alternative is selected, Waterways will advance the preferred alternative to a 35% level of engineered design, and will create a more detailed cost estimate for the preferred alternative. Design details will be compiled in a technical memorandum.	a) 35% Design Plan due 11/1/2027 b) Cost estimate due 11/1/2027 c) Technical memorandum due 11/1/2027
Task 7 Geotechnical Investigation	8/1/2027	CMAG Engineering will conduct a geotechnical investigation as a subcontractor to Waterways, and prepare an associated report of their findings.	Geotechnical investigation report due 8/1/2028
Task 8 65% Designs, Specifications and Cost Estimate	12/1/2027	Waterways will advance the 35% level of engineered design to 65% level engineered design, in a manner which is considerate of comments from CDFW, landowner, and others. Waterways will also create a 65% cost estimate, and a basis of design report.	a) 65% Design Plan due 4/1/2028 b) 65% Cost estimate due 4/1/2028 c) 65% Basis of design report due 4/1/2028
Task 9 90% Designs, Specifications, Cost Estimate and Revised Basis of Design	5/1/2028	Waterways will review comments received from TU, landowners, CDFW, and permitting agencies on the 65% Drawings and will incorporate revisions into the 90% plans, cost estimate, and basis of design, where appropriate. The 90% Plans will be at a suitable level to competitively bid and construct the Project.	a) 90% Design drawings due 9/1/2028 b) 90% Cost Estimate due 9/1/2028 c) 90% Basis of Design due 9/1/2028
Task 10 100% Designs, Specifications and Cost Estimate	10/1/2028	Waterways will review comments received from TU, landowners, CDFW, and permitting agencies on the 90% engineered design and will incorporate revisions into the 100% submittal, where appropriate. The 100% design documents will be at a suitable level to competitively bid and construct the project.	a) 100% Design Plan due 12/1/2028 b) 100% Cost estimate due 12/1/2028 c) 100% Basis of design report due 12/1/2028

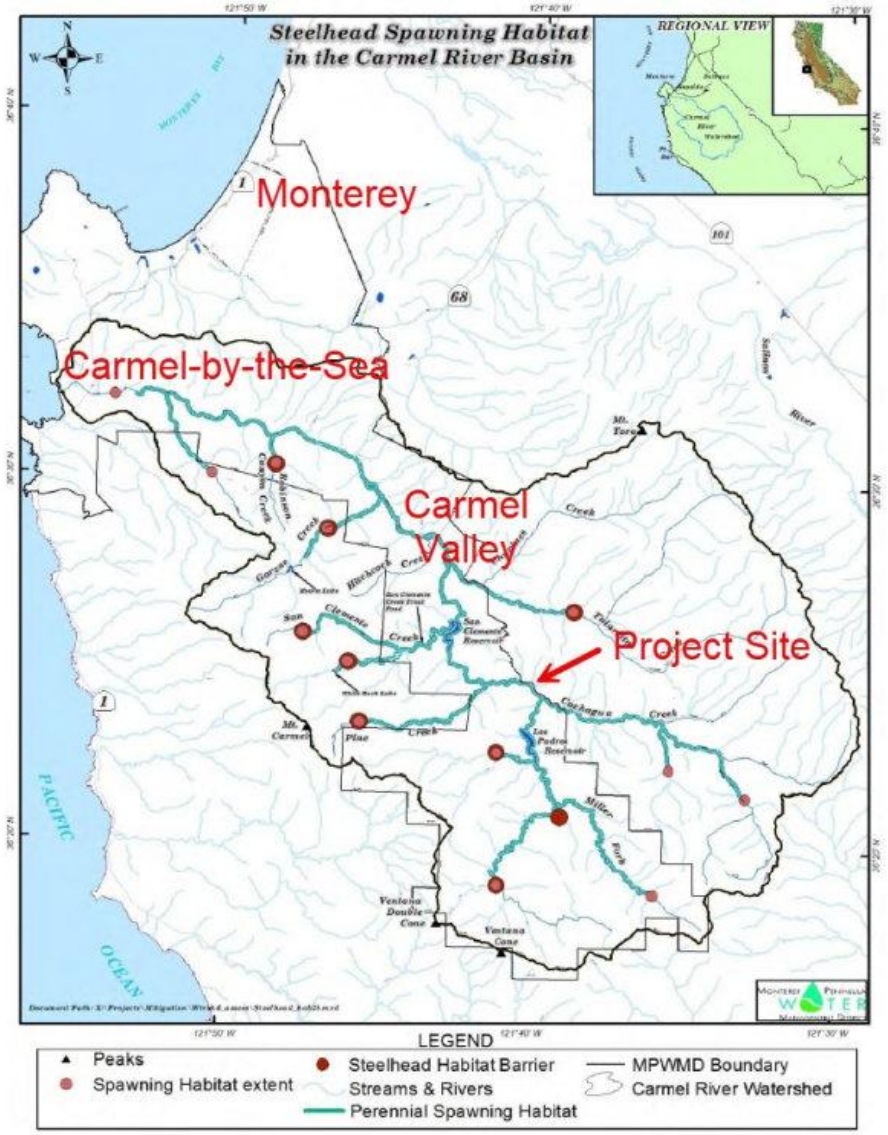
Additional Requirements:

Geotechnical investigation start and end dates are at the discretion of CDFW.

No equipment maintenance will be performed within or near the stream where pollutants (such as petroleum products) from the equipment may enter the stream via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the stream (including floodplain areas) at the end of each workday. All trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly.

Carmel River Fish Passage Alternative Plan/Design Project
Flavens Crossing
Proposal Number: 1736411 Proposal Type: PD Plan/Design

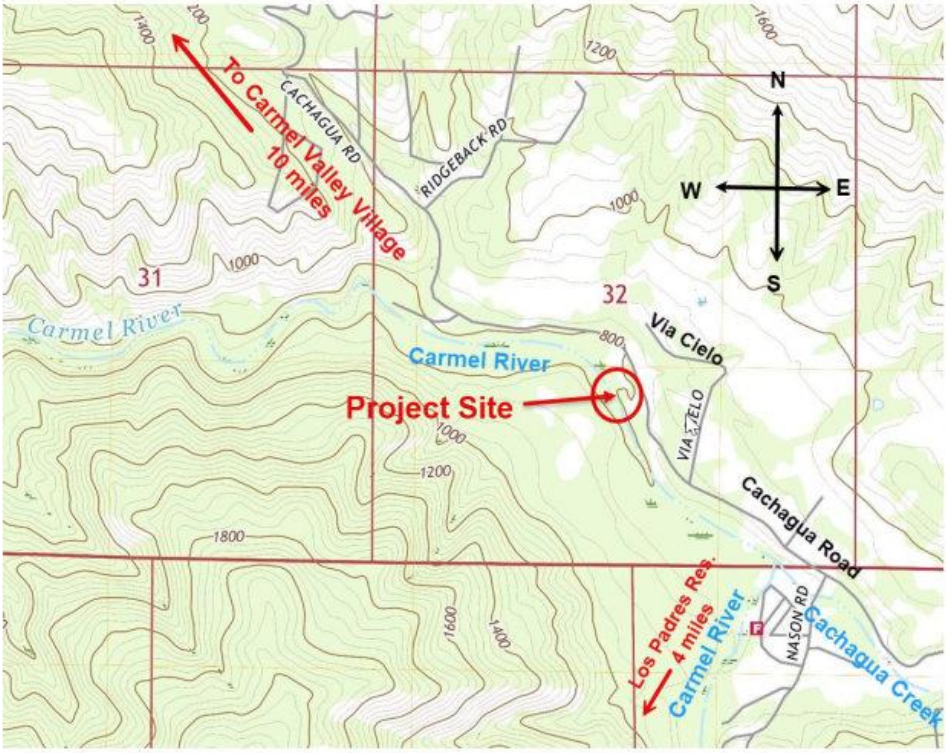
Supplemental Information
Watershed Map and Site Location

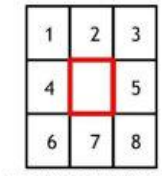


Carmel River Fish Passage Alternative Plan/Design Project
Flavens Crossing
Proposal Number: 1736411 Proposal Type: PD Plan/Design

Supplemental Information
Topographic Survey Information

CARMEL VALLEY QUADRANGLE
CALIFORNIA - MONTEREY COUNTY
7.5-MINUTE SERIES 2021





1 Seaside
2 Spreckels
3 Chualar
4 Mount Carmel
5 Rana Creek
6 Big Sur
7 Ventana Cones
8 Chews Ridge

ADJOINING QUADRANGLES

California Department of Fish and Wildlife
California Natural Diversity Database Species Lists for 1736411 Carmel River Fish Passage Alternative Plan Design Project Flavens Crossing

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ambystoma californiense pop. 1	California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	WL
Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC
Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Lavinia exilicauda harengus	Monterey hitch	AFCJB19013	None	None	SSC
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Oncorhynchus mykiss irideus pop. 9	steelhead - south-central California coast DPS	AFCHA0209H	Threatened	None	SSC
Bombus crotchii	Crotchs bumble bee	IIHYM24480	None	Candidate Endangered	-
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	Proposed Threatened	None	-
Neotoma macrotis luciana	Monterey dusky-footed woodrat	AMAFF08083	None	None	-
Sorex ornatus salarius	Monterey shrew	AMABA01105	None	None	SSC
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Anniella pulchra	northern legless lizard	ARACC01020	None	None	SSC
Actinemys pallida	southwestern pond turtle	ARAAD02032	Proposed Threatened	None	SSC
Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC
North Central Coast Fall-Run Steelhead Stream	North Central Coast Fall-Run Steelhead Stream	CARA2631CA	None	None	-
Malacothrix saxatilis var. arachnoidea	Carmel Valley malacothrix	PDAST660C2	None	None	-
Malacothamnus involucratus	Carmel Valley bushmallow	PDMAL0Q0B1	None	None	-
Meconella oregana	Oregon meconella	PDPAP0G030	None	None	-
Pinus radiata	Monterey pine	PGPIN040V0	None	None	-

Railroad Gulch Fish Passage Barrier Removal Design Project *(Project ID: 1736418) 2026*

Introduction:

The Trout Unlimited, Inc. (Grantee) will develop designs to remediate the fish passage barrier created by an aging, undersized culvert on Road 720 over Railroad Gulch, a tributary to Big River. Objectives include development of engineered designs and a Basis of Design Report for a replacement culvert. The existing culvert is a partial temporal barrier to fish passage. Additionally, a low water road crossing for Road 720 will be designed for a secondary "west thalweg" flow path of Railroad Gulch.

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual*. Applicant indicated using protocols from CDFW California Salmonid Stream Habitat Restoration Manual Volume II Section XII.

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The project is located on Railroad Gulch, a tributary to Big River, approximately 6 miles east of the town of Mendocino. The Railroad Gulch culvert is about 150 ft upstream from the confluence of Big River and Railroad Gulch. The project site is situated on Jackson Demonstration State Forest land and bordered by the CA Mendocino Woodlands State Park (MWSP). The project is located within the US topo 7.5-minute Quad map for Mathison Peak, CA.

The culvert (PAD ID #736794) is on Road 720, near its convergence with Roads 700, and M1; all roads are past logging roads. Road 720 and 700 provide access to MWSP.

The Railroad Gulch watershed is approximately 1.7 sq miles with 1.4 miles habitat upstream of the Railroad Gulch culvert fish passage barrier.

Driving directions: From Mendocino/Hwy 1, drive 5.6 miles on Little Lake Rd and turn right on Rd 700 (marked with signs for MWSP). Drive 3.4 miles. Stay right on road and do not go through MWSP gate. Park at bottom of hill. Walk 0.25 miles west to culvert.

Project central coordinates: 39.315911, -123.709522

Project Description:

In the late 1800s/early 1900s, railroads were constructed for logging purposes throughout Big River and up Railroad Gulch. Continued and intensified logging and road building on industrial timberlands has seriously degraded the watershed and Big River is now listed as a 303d sediment impaired watershed.

Big River and its tributaries once supported substantial runs of coho salmon (Gibbons 1993; Hassler et al. 1991) as well as runs of other anadromous fish such as steelhead and Pacific lamprey. Few data are available but some authors have estimated runs in the 1970s of 6,000 coho spawners (Brown et al. 1994; US Bureau of Reclamation 1973). Agency reports starting in the 1950s indicate that salmonid populations were depleted and in decline. According to population estimates provided by CDFW's Coastal Monitoring Program, the 2024/25 estimate of ocean returning fish to Big River was 2,418 coho salmon and 608 steelhead. The 2024/25 spawning year estimates are a significant increase over the previous 5 years estimates with a range of 87-1,572 coho spawners.

Big River has a watershed area of 181 mi^2 and approximately 214.8 stream miles of potential coho habitat (NOAA, 2012). Access to many of the Big River tributaries is impeded by road structures associated with stream crossings. Both the CDFW and NOAA coho recovery plans include tasks to modify or remove physical passage barriers on Big River and its tributaries. Improving fish passage consistently appears as a primary goal in most Big River watershed reports.

The project's Road 720 culvert crossing over Railroad Gulch is likely part of a legacy railroad grade. The existing culvert is an undersized corrugated metal pipe in poor condition that is perched ~1ft above the natural channel grade. The culvert is rusted through at the invert and there is scour around the inlet headwall. Replacing the Railroad Gulch culvert was specifically listed as a priority action in the 2026 Mendocino Coast SHaRP. Also, PWA found that if this aging culvert failed, it could deliver 1,100 cubic yards of sediment into Big River. The barrier is listed in the CDFW PAD Database as Barrier ID No. 736794.

Ross Taylor and Associates (RTA) evaluated this culvert for fish passage in 2009 for Jackson State Demonstration Forest and determined it is a partial and temporal barrier. A temporal barrier is impassable to all fish some of the time while a partial barrier is impassable to some fish at all times. RTA's analysis estimated that the culvert met adult anadromous salmonid passage criteria during 68% of the range of migration flows and met resident trout/age-2+ salmonid passage criteria during 4% of the range of migration flows for that age class. The analysis showed the culvert failed to meet passage criteria for age-1+/young-of-year salmonids on all migration flows due to excessive velocities. RTA noted that "actual passage may be better because the crossing is hydraulically-influenced by lower Big River (during storm flows) and has a rust-line indicative of frequent back-watered depths of five to six feet."

Upstream of the Rd 720 Railroad Gulch crossing, there is an approximately 5-acre marsh, and above the upper end of the marsh there is ~4,300 feet of suitable fish-bearing stream channel. RTA (2009) rated the quality of the habitat as "Fair" based on observations at time of the fish passage assessment survey. The channel reach near the crossing was confined by steep banks and comprised of mud. Above the marsh, the channel was highly imbedded with fine sediment. Two projects are planned for the upstream reach that would significantly increase both rearing and spawning habitat quality for salmonids. The upstream projects include a large wood loading project and a road decommissioning project to reduce sediment input into Railroad Gulch. The Railroad Gulch culvert replacement designs and implementation must be completed before the large wood loading and road decommissioning can occur in the upper watershed.

Currently, high velocities through the culvert currently restrict non-natal juvenile fish passage. Replacing the Railroad Gulch culvert with an appropriately sized culvert would allow juvenile salmonids better ingress and egress access to the high-flow refugia.

Despite legacy watershed impacts from land-use practices that have greatly reduced habitat connectivity, the combination of perennial freshwater conditions with good rearing habitat characteristics provides year-round rearing opportunities for juvenile salmonids.

Materials:

The goal of the project is to remediate the fish passage barrier created by an aging, undersized culvert on Road 720 over Railroad Gulch. Objectives include development of engineered designs and a Basis of Design Report for a replacement culvert. Additionally, a low water rocked road crossing for Rd 720 will be designed for a secondary "west thalweg" flow path of Railroad Gulch.

Both the CDFW and NOAA coho recovery plans include tasks to modify or remove physical passage barriers on Big River and its tributaries. Also, addressing the fish passage barrier at the Railroad Gulch culvert was specifically listed as a priority action in the 2026 Mendocino Coast SHaRP. Additionally, as Road 720 is planned to become the main access to the Mendocino Woodlands State Park (after Road 700 is decommissioned), CDPR and CalFire JDSF want to replace the aging and undersized culvert at Railroad Gulch to ensure road stability. Replacement of the culvert is the best project to address the fish passage barrier as the road cannot be abandoned and decommissioned given the landowners' constraints.

MLA, SHN, and TU developed the scope for this project based on past experiences with designing culvert/fish passage barrier removal projects. The scope was further developed after reviewing the FRGP design plan criteria for bridges and bottomless culverts. The scope of work follows standard engineering best practices and methods laid out in the California Salmonid Stream Habitat Restoration Manual.

The project will complete an in-depth site characterization. Field surveys will be conducted to compile a digital terrain model, hydrologic monitoring, and hydraulic model. The process for site characterization and designs was developed collaboratively and will consider input from multiple partners throughout the project. A crossings alternatives (options) analysis will be provided to determine crossing structure selection. The crossing is anticipated to accommodate a stream simulation design that spans the bankfull channel and provides a natural substrate bottom. The structure type is assumed to be a manufactured culvert system (i.e. arch culvert) with an embedded bottom. The project will employ the standard 30%, 65%, 90%, 100% engineering design phases with documentation of the design process in a Basis of Design Report.

With past proven experience in developing and delivering constructable fish passage design projects, the project team will be successful in meeting the project goals and objectives.

Ecological benefits will be realized as soon as the project implementation is finished. Observations of recent construction projects along the Mendocino Coast rivers have shown juvenile salmonids moving into newly accessible or created habitat as soon as construction equipment leaves the site and fish exclusion fencing is removed. As this proposal is for designs that will be completed in June 2029, ecological benefits would not occur until 2030 or 2031 with implementation, dependent on funding availability for construction.

Tasks, Deliverables, and Timelines:

All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window.

Task Name	Start Date	Activity Description	Deliverables
Task 1 - Project Management and Administration	6/1/2027	TU North Coast Coho Project (NCCP) Project Manager will provide technical and administrative services associated with performing and completing the work for this Project, including managing this Agreement, administering subcontracts, landowner and agency communication, meeting coordination, tracking project costs and deliverables, invoicing and payments, finalizing progress and annual reports, and drafting and finalizing the final report. NCCP Project Director will provide oversight of the Project. TU California Operations and Grants Manager and NCCP Field Accountant will help process invoices, track financial information, ensure grant and procurement compliance, and develop reports. The CA TU Director will review and authorize agreements and subcontracts and will be available as needed. NCCP Project Manager will deliver the final landowner access agreements prior to receiving a Notice to Proceed. MLA and SHN will provide quarterly progress reports, invoices, and schedule updates under this task.	Final Landowner Access Agreement - Prior to receiving Notice to Proceed; Executed Subcontractor Agreements - Prior to receiving the Notice to Proceed; Invoices & Progress Reports - Due with each submitted invoice or at least quarterly; Annual Reports - Due no later than November 15 of each year; Draft Final Report - June 15, 2029; Final Report - July 15, 2029; Final Invoice - August 31, 2029
Task 2 - Meetings and Partner Coordination	9/1/2027	The project team consisting of TU, SHN, and MLA will meet at project milestones with project partners consisting of landowners and agency staff. This includes staff from State Parks, CalFire, CDFW, and NOAA.	Kickoff meeting - by 9/30/2027; 30% design review meeting - by 7/15/2028; As needed:

		The project team will attend an on-site project kick-off meeting with the project partners. The project team will attend a design review meeting to present 30% designs and answer questions from project partners and agency staff. It is anticipated that the design review will take place at the project site. Up to two additional design review meetings attended by the project team will be held via conference call as needed. It is anticipated that meetings will be used to discuss and review 65% and 95% designs, and for coordination in preparation of preparing grant proposals for implementation.	65% design meeting - by 12/15/2028; Final designs meeting - by 6/30/2029; TU will prepare meeting minutes after each meeting and distribute to project team
Task 3 - Site Characterization	9/1/2027	MLA and SHN will lead this task. This task focuses on characterizing the existing geologic, geomorphic, hydrologic, and hydraulic site conditions. It involves various field surveys and mapping, a subsurface geotechnical investigation, hydrologic analysis and water level monitoring, and hydraulic modeling. The information gained through these activities will guide development of the project design for the crossing replacement.	All deliverables listed in Tasks 3.1 to 3.5 to be provided with the draft Basis of Design Report in the Task 4 deliverable - 6/15/2028
Task 3.1 - Supplemental Topographic Survey	9/1/2027	A CalFire licensed surveyor completed a topographic survey of the road and adjacent Railroad Gulch channel for a previous design effort at the site. However, additional topographic detail is needed to support the hydraulic modeling, geomorphic interpretation, and final design. The survey will focus on the overflow ('West Thalweg') channel to the west from the existing upstream wetland through the overflow dip in the 720 Road and the trail crossing on the abandoned M1 Road, to where it ties to the Big River. The survey will also include survey of the natural levee top along the Big River along the 720 Road. Other features needing to	Project basemap in PDF format (provided in Basis of Design Report) - 6/15/2028; DEM as a geoTIFF - 6/15/2028

		be surveyed will be identified during the kick-off meeting. MLA will tie to the CalFire benchmarks to be in the same datum and survey with a robotic total station. The CalFire surface (DEM) will be updated with the additional survey and then merged with available LiDAR DEM for use in hydraulic modeling. This task is scheduled for 2 full days of field survey plus travel and is determined to require prevailing wage.	
Task 3.2 - Geotechnical Investigation for Crossing Replacement	10/1/2027	A geologic and geotechnical investigation will be conducted by SHN's Engineering Geologist and Geotechnical/Civil Engineer to characterize the geologic and geotechnical subsurface conditions at the crossing site. This will include advancing exploratory borings at the crossing site, laboratory (SHN) testing of select samples, a field assessment of geologic conditions within the limits of work, evaluating the subsurface soil conditions and potential geotechnical constraints, and preparation of a geologic and geotechnical report presenting our findings and recommendations for the geotechnical aspects of the crossing. SHN will subcontract to a drilling company to advance the boreholes for the subsurface investigation. SHN will secure the required Mendocino County Department of Environmental Health drilling permit to perform this task. Approximately four to five borings will be drilled at the crossing using a subcontracted drilling firm. Each boring will extend through the road or gravel surface, plus a sufficient depth below the equivalent streambed level to establish a support condition for a range of waterway crossing structures. During drilling, representative samples will be obtained using modified California (2.5-inch internal diameter) or standard penetration tests (1.5-inch inside	Draft Geologic and Geotechnical Report for the Crossing Replacement - 6/15/2028

		diameter) split-spoon samplers. The samplers will be driven 18-inches into the soil using an automatic hammer with a 30-inch drop to collect blow counts for each 6-inch drive. Soil samples will typically be recovered at 2.5- to 10-foot sampling intervals. The recovered samples will be field classified, bagged or capped and transferred to SHN laboratory for testing. Laboratory testing may consist of moisture content, grain size, and Atterberg limits tests for classification, and, depending on the type of soils encountered, a lesser number of specialty tests to evaluate density and unconfined compressive strength. At completion, the boreholes will be backfilled with bentonite powder or chips or neat cement. Results of the investigation and geotechnical recommendations for the foundation of the chosen crossing type will be compiled into a geologic and geotechnical report that will include field and laboratory data regarding the subsurface soil conditions, review of geologic conditions and hazards, analysis of geotechnical constraints, and bearing capacity, settlement, lateral earth pressures to inform the design of the crossing replacement. A draft of the report will be produced as part of the 30% design submittal and it will be updated and finalized at 65% submittal.	
Task 3.3 - Existing Condition Hydrology and Water Level Monitoring	9/1/2027	To support the hydraulic modeling and general understanding of the interactions between Railroad Gulch, mainstem Big River, and Little North Fork Big River (LNF), MLA will install four (4) water level loggers and one supporting atmospheric logger in the project study area. These four loggers will provide data for use as hydraulic model boundary conditions. The loggers will collect water surface elevation data every 15 minutes, tied to the project vertical datum. The loggers will be installed before the rainy season	Project Hydrologic, Hydraulic, and Geomorphic Design Memorandum - 6/15/2028; Water level data in ASCII format and associated meta data - 6/15/2028

		(by mid November) and operate for an approximately 6 month period. TU will assist MLA with the logger installations and removal, and download the loggers every 2 months or more frequently following large flow events. MLA will estimate return period flows for Railroad Gulch, Big River, and LNF using a combination of methods, including USGS StreamStats and probabilistic analysis of historical peak flow records from nearby gaged stream and rivers. MLA will also use available guidance to estimate the coincidental timing of return period flows among the three water bodies for use in establishing design condition scenarios.	
Task 3.4 - Existing Condition Hydraulic Analysis	1/1/2028	Two dimensional (2D) numerical modeling of the existing hydraulic conditions will be conducted by MLA's project engineer using the publicly available software package, HEC-RAS. The model will be developed using the digital elevation model (DEM) from the project basemap and will focus on the Railroad Gulch road-stream crossing hydraulics, hydraulics at the 720 Road overflow dip and the proposed trail crossing along the West Thalweg, and flood flow interactions with the Big River and LNF. It will serve as the base-model for evaluating different crossing structures types in the 30% design task as well as provide insights into the influence of the crossing and river. The model domain will include Railroad Gulch extending to the southern edge of the existing wetland, the LNF just upstream of where it spills across the floodplain, and the Big River from upstream of the LNF confluence to downstream of the Railroad Gulch confluence. Numerous return period flows will be analyzed to determine the frequency and extent of roadway overtopping and backwatering up Railroad Gulch. Figures of model results be produced and provided in the Project	Project Hydrologic, Hydraulic, and Geomorphic Design Memorandum - 6/15/2028

		Hydrologic, Hydraulic, and Geomorphic Design Memorandum.	
Task 3.5 - Mapping Flow Paths and Geomorphic Features	9/1/2027	MLA's project engineer and principal engineer will develop a sketch map showing overflow paths and geomorphic features within the study area that influence the road crossing and high flow road dip. This will be developed using available LiDAR, field based indicators, available high flow photos and video, and anecdotal evidence. MLA will also collect necessary channel geometry measurements and substrate characteristics for use in the stream simulation design. This will be used to help validate the existing condition hydraulic model results and for use in the stream simulation design development.	Project Hydrologic, Hydraulic, and Geomorphic Design Memorandum - 6/15/2028
Task 4 - Preliminary (30%) Design Development	3/1/2028	Geomorphic Design: MLA will plot the existing thalweg profile and estimate the stable channel profile through the crossing as well as the low and high vertical adjustment potential (VAP). MLA will also establish the proposed channel alignment through the crossing and within the upstream and downstream channels. The project active and bankfull channel geometry as well as a preliminary channel grade will be established in CAD. Results from this activity will be included in the MLA Project Hydrologic, Hydraulic, and Geomorphic Design Memorandum, which will be an attachment to the Basis of Design Report. Channel and Crossing Hydraulic Analysis and Reporting: MLA will update the existing conditions model to reflect the proposed channel grading at the crossing approaches. The proposed replacement stream crossing will be input into the model and analyzed, evaluating hydraulic conditions during design flood events (i.e. 100-year flow) in Railroad Gulch with varying water levels in the adjacent river. MLA will support SHN in the structure type selection process,	MLA Draft Project Hydrologic, Hydraulic, and Geomorphic Design Memorandum in PDF format; 30% design plans in 11x17 PDF format; Draft Basis of Design Report in PDF format - All due 6/15/2028

		including analyzing the various crossing types and dimensions under consideration. MLA will provide SHN with minimum crossing dimensions and elevations based on the hydraulic and geomorphic analysis. Draft Hydrologic, Hydraulic, and Geomorphic Design Memorandum: MLA will prepare a Project Hydrologic, Hydraulic, and Geomorphic Design Memorandum, which will be an attachment to the Basis of Design Report. The memorandum will include findings from the site characterizations, geomorphic design guidance, results from the analysis of various crossing structure types, recommended crossing type and size, and recommendations for rock sizing and channel dimensions for the Railroad Gulch crossing, West Thalweg overflow road dip, and for the pedestrian/equestrian bridge crossing on the trail (to be designed by CalFire). Structure Type Selection: An appropriate crossing structure (including materials and dimensions) will be selected by SHN's Senior Civil Engineer and Staff Engineer based on site survey, geomorphic and geotechnical assessment, channel profile, hydraulic modeling results, constructability, cost, ability to convey flow, woody debris, sediment, and longevity. MLA will provide hydraulic analysis of the various options. A crossings alternatives (options) analysis will be provided to clarify crossing structure selection. The crossing is anticipated to accommodate a stream simulation design that spans the bankfull channel and provides a natural substrate bottom. The structure type is assumed to be a	

		manufactured culvert system (i.e. arch culvert) with an embedded bottom. Preliminary Design Plans: Preliminary (30%) design drawings will be developed by SHN and MLA. The intent of the preliminary designs is to present the overall project approach, the design channel profile, alignment, and dimension, the type of crossing structure and foundation system to be employed, any modifications to the road profile, and extents of the project footprint. SHN's Senior Civil Engineer and Staff Engineer will lead the design and preparation of drawings for the crossing structure and roadway. MLA will lead design and prepare drawings for the stream channel and inside the crossing. The concept design drawings will include: Title Sheet; Existing and proposed condition plan view showing stream alignment, limits of proposed grading, and extents of new stream crossing structure; Stationed channel profile showing existing ground and proposed thalweg profile with the proposed stream crossing; Typical channel cross sections; Cross section at new crossing showing type, span, preliminary foundation and any necessary road profile adjustments.	

		Draft Basis of Design Report (BODR): A draft Basis of Design Report (BODR) will be prepared by SHN's Hydraulic Engineer and Staff Engineer describing the analysis, design decisions, and assumptions incorporated into the 30% design development for review and comment. MLA's draft Project Hydrologic, Hydraulic, and Geomorphic Design Memorandum and the 30% design drawings will be attachments to the Basis of Design Report. The report and attachments will include text and figures that present: Overview of project area and objectives; Design, methods, and assumptions used in design development; Hydrologic and hydraulic analysis results; Geomorphic analyses and results; Geologic and geotechnical results and recommendations; Discussion of site access and construability issues; Preliminary opinion of probable construction cost (OPCC), including costs for the proposed crossing and foundation The BODR and 30% design plans will be submitted to the project partners for review and comment, and will be presented at Meeting No. 2. A minimum of 30 days will be provided for review comments. Both oral and written	

		comments will be compiled and addressed as part of the 65% design.	
Task 5 - Intermediate (65%) Design Development	8/1/2028	After receipt of comments from the 30% design submittal, additional design development will be completed by SHN's Senior Civil Engineer and Staff Engineer and MLA and the design plans will be prepared to the 65% completion level. These drawings will be adequate to convey the design intent, provide more detail for review purposes, and provide a more precise estimate of construction cost. The 65% design plans will include the preliminary design plan sheets updated to the 65% design level, and the following additional information: General notes; Water Management plan and notes (MLA); Erosion and sediment control details and notes; Approximate limit of disturbance, construction access, and staging areas; Sequence of construction; Channel grading details and notes (MLA); Stream crossing details and notes; Technical specifications Steam bank stability assessment will be included for any portion of the project that involves modifying the streambanks along Railroad Gulch. The proposed-condition hydraulic analysis will be updated to reflect any	65% Planset (11"x17" PDF); 65% Opinion of Probable Construction Cost (PDF format); 65% Submittal letter (PDF format) - All due 10/31/2028

		modifications to the proposed project as part of this task. An intermediate level opinion of probable construction cost (OPCC) with 20% contingency and escalation will be included. Design changes and additions will be described in the submittal letter with supporting attachments. A 30-day comment period will be provided for submission of written comments. A meeting may be held to discuss and resolve design comments and requests.	
Task 6 - Final Engineering Designs (90% and 100%)	1/1/2029	SHN's Senior Civil Engineer and Staff Engineer and MLA will prepare the draft (90%) and final (100%) design plans, notes, and engineering cost estimate. Minor changes to the design will be incorporated into the 90% submittal based on comments received on the 65% submittal. Specifications for miscellaneous channel work and site restoration will be placed as notes on sheets within the plan set as required. The intent of the 90% submittal is to provide a complete set of construction documents for a final review, with only minor changes assumed for the final submittal. The 90% and 100% Final Plans will include: Title Sheet; Symbol and abbreviation sheet; Existing and proposed condition plan view showing limits of proposed grading;	90% Submittal Letter; 90% Plans (11"x17" PDF); 90% Opinion of Probable Construction Cost (PDF format); Final SHN Basis of Design Report (PDF format and 1 hard copy to CDFW); Final MLA Project Hydrologic, Hydraulic, and Geomorphic Design Memorandum; Final (100%) Signed and Sealed Plans (11"x17" and 22"x 34" PDF format);

		Typical proposed cross sections with dimensions; Detailed grading cross sections; Stationed profile showing existing ground, annotated proposed centerline, replacement crossing location, dimensions and elevations; Detailed replacement crossing sections showing profile, limits of structural backfill and bedding, foundation details, and materials and compaction requirements for construction; Construction details and material specifications; Construction access plan and sequencing of construction activities; Water Management Plan; Erosion and sediment control notes; Technical specifications The Opinion of Probable Construction Costs (OPCC) will be updated as part of the 90% submittal and include a 15% contingency and escalation based on the projected year for implementation.	Final Opinion of Probable Construction Cost (PDF format); Final Plans - due 6/1/2029

		As part of the 90% submittal, the BODR will be updated and finalized by SHN. MLA will finalize the Project Hydrologic, Hydraulic, and Geomorphic Design Memorandum, which will be an attachment to the BODR, along with the 90% plans and OPCC. A submittal letter will be prepared by SHN outlining changes and additions made to the design since 65% and listing any outstanding items that need to be addressed. Once comments are received on the 90% submittal following the 30-day review period, the plans will be finalized and each sheet will be signed and sealed by a California registered civil engineer and the OPCC will be finalized.	
Task 7 - Resource Surveys	8/1/2027	CDPR will conduct a botanical resources study which will include: a California Natural Diversity Database query, botanical field surveys, and associated mapping and reporting as well as a wetland delineation of the project area to comply with provisions of CEQA and to prepare for implementation permits. CDFW granted CDPR a 10-year survey reprieve from marbled murrelet (MAMU) surveys and monitoring due to MAMU being absent from the area. CDPR will provide a cultural resources study for the project. CDPR will conduct a Northwest Information Center Records Search, conduct site surveys, and provide a report detailing site pre-history and history, survey results, and avoidance and minimization measures, if required. CalFire JDSF will take lead on outreach to Native American Tribes. Pacific Watershed Associates (PWA) will assess potential paleontological resources and provide a report on the findings.	Resource Survey Documentation - April 1, 2029

		TU will perform a fish presence survey to determine current salmonid utilization of the site. Sampling fish will employ seine netting or minnow trapping above the culvert at Railroad Gulch. TU will conduct 2 presence/absence surveys conducting up to 10 seine net sets with a 10- or 20-foot net, using equal effort for each sampling event. If seine nets are not effective, minnow traps baited with frozen steelhead roe will be placed in several locations above the culvert and retrieved after approximately 1-2 hours. The sampling events will be scheduled between December - April and any fish that are captured will be enumerated and the year class will be estimated (e.g., YOY, 1+, 2+, Adult) before releasing. Fish will not be anesthetized or measured; handling of fish will be reduced to the greatest extent possible. TU will provide a brief memorandum of survey results. A CDFW Restoration Management Permit (RMP) will be secured, if required. TU staff will also investigate habitat enhancement options near the fish passage barrier.	

Additional Requirements:

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured, including cultural and biological surveys. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife (CDFW).

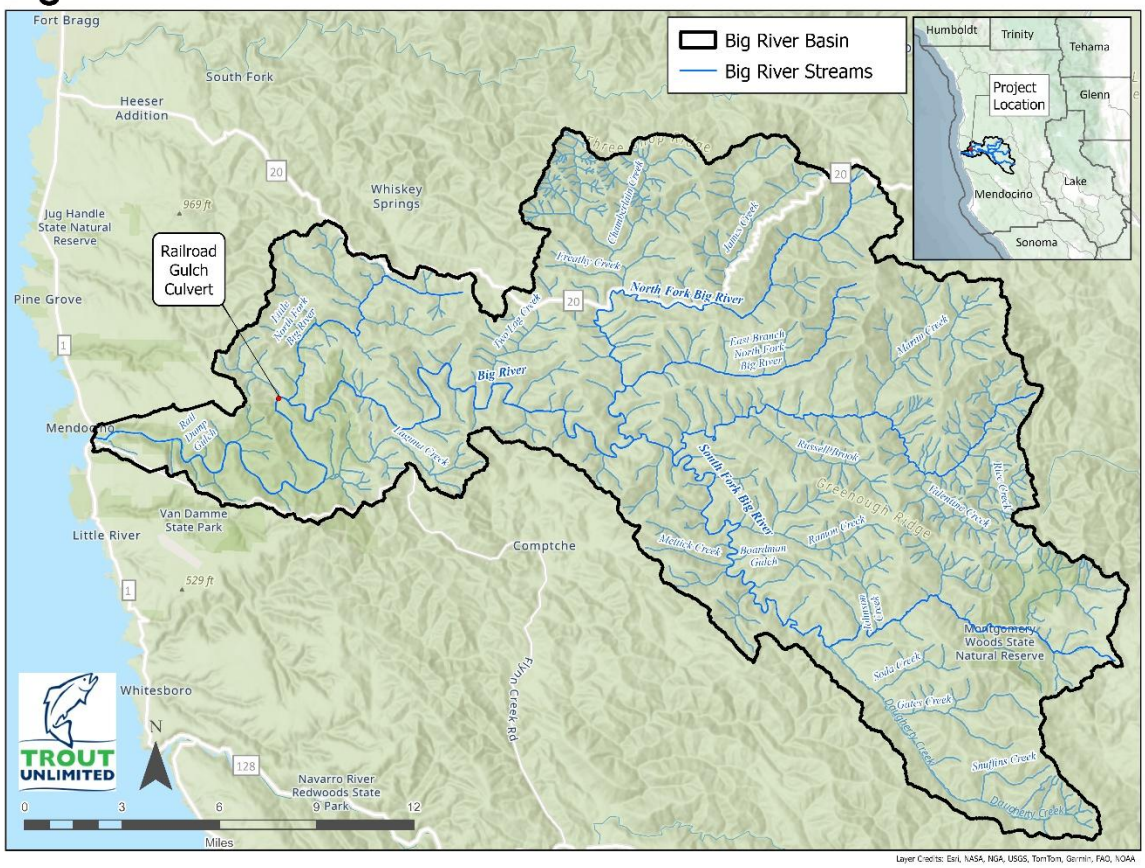
No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the streambed and flood plain areas at the end of each workday.

All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol.

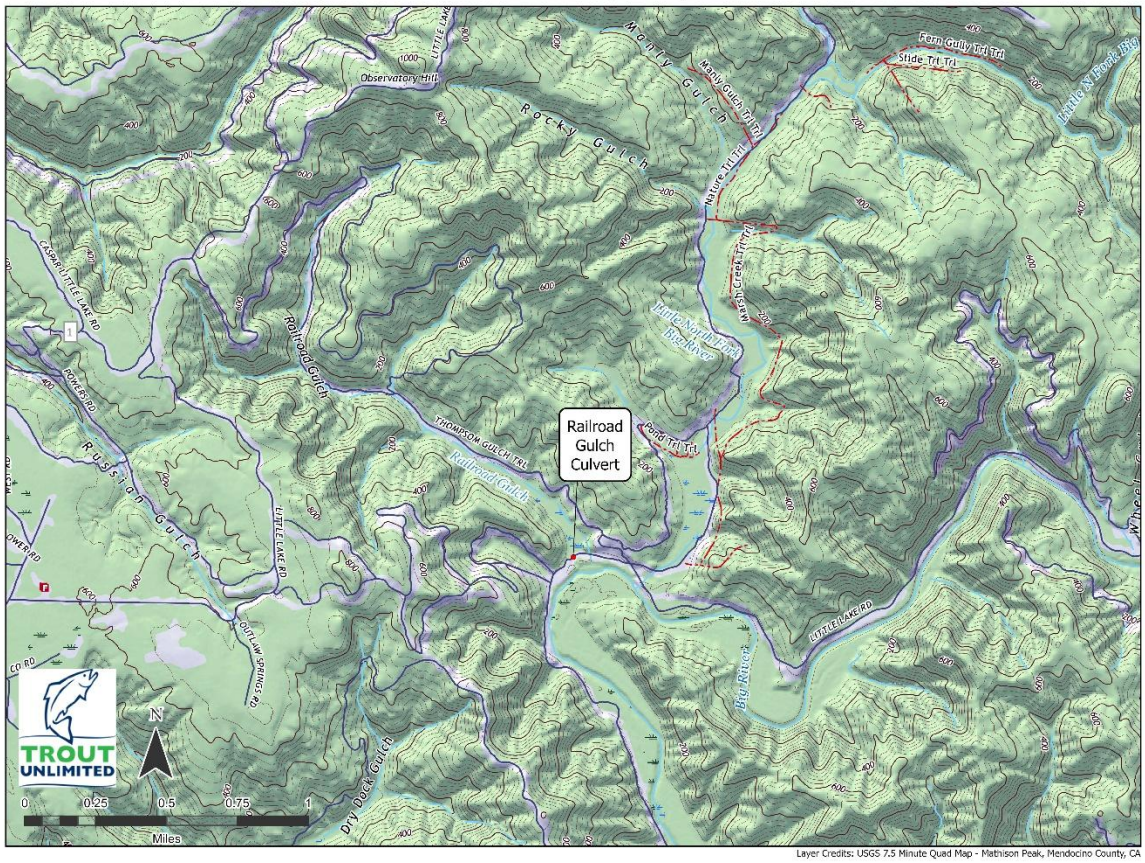
During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual, 4th Edition (CA Restoration Manual)* or *other approved guidelines and manuals for salmon and steelhead habitat restoration*.

Big River Watershed



Railroad Gulch Fish Passage Barrier Removal Design Project - Applicant: Trout Unlimited



Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ascaphus truei	Pacific tailed frog	AAABA01010	None	None	SSC
Rana aurora	northern red-legged frog	AAABH01021	None	None	SSC
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	AAABH01051	None	None	SSC
Rhyacotriton variegatus	southern torrent salamander	AAAAJ01020	None	None	SSC
Taricha rivularis	red-bellied newt	AAAAF02020	None	None	SSC
Calileptoneta wapiti	Mendocino leptonetid spider	ILARAU6040	None	None	-
Astur atricapillus	American goshawk	ABNKC12061	None	None	SSC
Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Brachyramphus marmoratus	marbled murrelet	ABNNN06010	Threatened	Endangered	-
Fratercula cirrhata	tufted puffin	ABNNN12010	None	None	SSC
Chaetura vauxi	Vauxs swift	ABNUA03020	None	None	SSC
Ardea herodias	great blue heron	ABNGA04010	None	None	-
Anarhynchus montanus	mountain plover	ABNNB03100	None	None	SSC
Anarhynchus nivosus nivosus	western snowy plover	ABNNB03031	Threatened	None	SSC
Progne subis	purple martin	ABPAU01010	None	None	SSC
Hydrobates homochroa	ashy storm-petrel	ABNDC04030	None	None	SSC
Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Nannopterum auritum	double-crested cormorant	ABNFD01020	None	None	WL
Athene cunicularia	burrowing owl	ABNSB10010	None	Candidate Endangered	SSC
Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC
Hesperoleucus venustus navarroensis	northern coastal roach	AFCJB19031	None	None	SSC
Eucyclogobius newberryi	tidewater goby	AFCQN04010	Endangered	None	SSC
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Oncorhynchus gorbuscha	pink salmon	AFCHA02010	None	None	-
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	-
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	AFCHA0213Q	Threatened	None	SSC
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	SSC
Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-
Atractelmis wawona	Wawona riffle beetle	IICOL58010	None	None	-
Plebejus anna lotis	lotis blue butterfly	IILEPG5013	Endangered	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	Proposed Threatened	None	-
Speyeria zerene behrensii	Behrens silverspot butterfly	IILEPJ6088	Endangered	None	-
Coelus globosus	globose dune beetle	IICOL4A010	None	None	-
Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC
Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-
Enhydra lutris nereis	southern sea otter	AMAJF09012	Threatened	None	FP
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Eumetopias jubatus	Steller sea lion	AMAJC03010	Delisted	None	-
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Myotis thysanodes	fringed myotis	AMACC01090	None	None	-
Myotis volans	long-legged myotis	AMACC01110	None	None	-
Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-
Haliotis kamtschatkana	pinto abalone	IMGASV2040	None	None	-
Helminthoglypta arrosa pomoensis	Pomo bronze shoulderband	IMGASC2033	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Noyo intersessa	Ten Mile shoulderband	IMGASC5070	None	None	-
Margaritifera falcata	western pearlshell	IMBIV27020	None	None	-
Actinemys marmorata	northwestern pond turtle	ARAAD02031	Proposed Threatened	None	SSC
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	-
Coastal Brackish Marsh	Coastal Brackish Marsh	CTT52200CA	None	None	-
Grand Fir Forest	Grand Fir Forest	CTT82120CA	None	None	-
Mendocino Pygmy Cypress Forest	Mendocino Pygmy Cypress Forest	CTT83161CA	None	None	-
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	CTT52110CA	None	None	-
Sphagnum Bog	Sphagnum Bog	CTT51110CA	None	None	-
Buxbaumia viridis	green shield-moss	NBMUS1B040	None	None	-
Triquetrella californica	coastal triquetrella	NBMUS7S010	None	None	-
Usnea longissima	Methuselahs beard lichen	NLLEC5P420	None	None	-
Ramalina thrausta	angels hair lichen	NLLEC3S340	None	None	-
Angelica lucida	sea-watch	PDAPI070G0	None	None	-
Glehnia littoralis ssp. leiocarpa	American glehnia	PDAPI13011	None	None	-
Blennosperma nanum var. robustum	Point Reyes blennosperma	PDAST1A022	None	Rare	-
Erigeron supplex	supple daisy	PDAST3M3Z0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	PDAST4R0W1	None	None	-
Hemizonia congesta ssp. tracyi	Tracys tarplant	PDAST4R067	None	None	-
Hesperevax sparsiflora var. brevifolia	short-leaved evax	PDASTE5011	None	None	-
Lasthenia californica ssp. bakeri	Bakers goldfields	PDAST5L0C4	None	None	-
Lasthenia californica ssp. macrantha	perennial goldfields	PDAST5L0C5	None	None	-
Microseris borealis	northern microseris	PDAST6E030	None	None	-
Packera bolanderi var. bolanderi	seacoast ragwort	PDAST8H0H1	None	None	-
Erysimum concinnum	bluff wallflower	PDBRA160E3	None	None	-
Erysimum menziesii	Menzies wallflower	PDBRA160R0	Endangered	Endangered	-
Eastwoodiella californica	swamp harebell	PDCAM02060	None	None	-
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	PDCON040D2	None	None	-
Cuscuta pacifica var. papillata	Mendocino dodder	PDCUS011A2	None	None	-
Cornus unalaschkensis	bunchberry	PDCOR010F0	None	None	-
Hesperocyparis pygmaea	pygmy cypress	PGCUP04032	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Carex californica	California sedge	PMCYP032D0	None	None	-
Carex lenticularis var. limnophila	lagoon sedge	PMCYP037A7	None	None	-
Carex livida	livid sedge	PMCYP03N60	None	None	-
Carex lyngbyei	Lyngbyes sedge	PMCYP037Y0	None	None	-
Carex saliniformis	deceiving sedge	PMCYP03BY0	None	None	-
Rhynchospora alba	white beaked-rush	PMCYP0N010	None	None	-
Arctostaphylos nummularia ssp. mendocinoensis	pygmy manzanita	PDERI04280	None	None	-
Astragalus agnicidus	Humboldt County milk-vetch	PDFAB0F080	None	Endangered	-
Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-
Lathyrus japonicus	seaside pea	PDFAB250C0	None	None	-
Lathyrus palustris	marsh pea	PDFAB250P0	None	None	-
Trifolium buckwestiorum	Santa Cruz clover	PDFAB402W0	None	None	-
Trifolium trichocalyx	Monterey clover	PDFAB402J0	Endangered	Endangered	-
Phacelia insularis var. continentis	North Coast phacelia	PDHYD0C2B1	None	None	-
Juncus supiniformis	hair-leaved rush	PMJUN012R0	None	None	-
Erythronium revolutum	coast fawn lily	PMLIL0U0F0	None	None	-
Lilium maritimum	coast lily	PMLIL1A0C0	None	None	-
Lilium rubescens	redwood lily	PMLIL1A0N0	None	None	-
Lycopodium clavatum	running-pine	PPLYC01080	None	None	-
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	PDMAL11012	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0	None	None	-
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	PDMAL110F9	None	None	-
Sidalcea malviflora ssp. purpurea	purple-stemmed checkerbloom	PDMAL110FL	None	None	-
Veratrum fimbriatum	fringed false-hellebore	PMLIL25030	None	None	-
Pityopus californicus	California pinefoot	PDMON05010	None	None	-
Abronia umbellata var. breviflora	pink sand-verbena	PDNYC010N4	None	None	-
Clarkia amoena ssp. whitneyi	Whitneys farewell-to-spring	PDONA05025	None	None	-
Cypripedium montanum	mountain ladys-slipper	PMORC0Q080	None	None	-
Neottia cordata	heart-leaved twayblade	PMORC1N060	None	None	-
Platanthera ephemerantha	white-flowered rein orchid	PMORC1X050	None	None	-
Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-
Castilleja ambigua var. humboldtiensis	Humboldt Bay owls-clover	PDSCR0D402	None	None	-
Castilleja litoralis	Oregon coast paintbrush	PDSCR0D012	None	None	-
Castilleja mendocinensis	Mendocino Coast paintbrush	PDSCR0D3N0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Cordylanthus tenuis ssp. brunneus	serpentine birds-beak	PDSCR0J0S1	None	None	-
Kopsiopsis hookeri	small groundcone	PDORO01010	None	None	-
Pinus contorta ssp. bolanderi	Bolanders beach pine	PGPIN04081	None	None	-
Collinsia corymbosa	round-headed collinsia	PDSCR0H060	None	None	-
Agrostis blasdalei	Blasdales bent grass	PMPOA04060	None	None	-
Calamagrostis bolanderi	Bolanders reed grass	PMPOA17010	None	None	-
Calamagrostis crassiglumis	Thurbers reed grass	PMPOA17070	None	None	-
Pleuropogon hooverianus	North Coast semaphore grass	PMPOA4Y070	None	Threatened	-
Pleuropogon refractus	nodding semaphore grass	PMPOA4Y080	None	None	-
Puccinellia pumila	dwarf alkali grass	PMPOA531L0	None	None	-
Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-
Gilia capitata ssp. tomentosa	woolly-headed gilia	PDPLM040B9	None	None	-
Gilia millefoliata	dark-eyed gilia	PDPLM04130	None	None	-
Leptosiphon aureus	bristly leptosiphon	PDPLM09010	None	None	-
Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-
Chorizanthe howellii	Howells spineflower	PDPGN040C0	Endangered	Threatened	-
Coptis laciniata	Oregon goldthread	PDRAN0A020	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ceanothus gloriosus var. exaltatus	glory brush	PDRHA040F4	None	None	-
Ceanothus gloriosus var. gloriosus	Point Reyes ceanothus	PDRHA040F5	None	None	-
Horkelia marinensis	Point Reyes horkelia	PDROS0W0B0	None	None	-
Sanguisorba officinalis	great burnet	PDROS1L060	None	None	-
Darlingtonia californica	California pitcherplant	PDSAR01010	None	None	-
Chrysosplenium glechomifolium	Pacific golden saxifrage	PDSAX07020	None	None	-
Mitellastra caulescens	leafy-stemmed mitrewort	PDSAX0N020	None	None	-
Tiarella trifoliata var. trifoliata	trifoliate laceflower	PDSAX10031	None	None	-
Viola palustris	alpine marsh violet	PDVIO041G0	None	None	-

Dutch Bill Creek Fishway Remediation Design Project *(Project ID: 1736446) 2026*

Introduction:

The Gold Ridge Resource Conservation District (Grantee) will conduct The Dutch Bill Creek Fishway Remediation Design Project (Project) which will complete feasibility and 30% design to remediate the failing fishway in Dutch Bill Creek and restore reliable passage to 7.8 miles of high-quality habitat for Coho salmon and steelhead trout. Work includes topographic survey, geotechnical and structural investigations, a hydrology/hydraulics analysis, development of up to three alternatives for TAC review, and 30% plans, preliminary Basis of Design report, and a planning level cost estimate for the selected alternative.

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* Volume 1, Sections VI and XII.

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The project is located on Dutch Bill Creek, a tributary to the Russian River, in Sonoma County, California. Work will focus on the existing weir fishway (CDFW PAD#707063) on the mainstem of Dutch Bill Creek, adjacent to Bohemian Highway and just downstream of the confluence with Duvoul Creek. The fishway extends from approximately rkm 5.71 to rkm 5.85 upstream of the Dutch Bill-Russian River confluence. The site is constrained by Bohemian Highway along river right and bedrock along river left, with retaining walls lining both banks through the fishway reach.

Project central coordinates: 38.44580, -122.98085

Project Description:

The goal of this project is to assess, evaluate and compose a 30% design to repair a failing fishway on Dutch Bill Creek, an important lower Russian River salmonid habitat tributary in western Sonoma County, CA. The existing fish ladder (CDFW PAD ID#707063) is an aging and deteriorating concrete structure located immediately downstream of a vital spawning and rearing habitat reach, and has been documented as a partial barrier in its current condition. The origin and design of the existing structure are not known, but it appears to have been repaired and augmented on multiple occasions over the past several decades. Concrete in parts of the structure has been undermined and is eroding, with fractures, holes and exposed rebar, and failure is likely to create a barrier to both spawning adult and outmigrating juvenile fish, potentially excluding them from 7.8 miles of high-quality and currently utilized habitat upstream. Extensive failure of the existing structure could also compromise the stability of Bohemian Highway, which is located immediately adjacent to the fish ladder. The project includes evaluation of up to three potential project alternatives and selection of a preferred alternative. The measurable objective of this grant is to complete a feasibility study and advance the preferred alternative to 30% conceptual design, which will be used to pursue subsequent funding for final (100%) design and implementation. In addition, supporting studies needed for CEQA and early regulatory coordination will be completed, including botanical, cultural and paleontological surveys. Should this proposal be funded, we expect to complete all work and have a 30% design by the latter half of 2028.

Materials:

The Project will use the following materials.

- Stream gage equipment
- Stream gage installation supplies
- Staff plates, t-posts, and 2x4 supports
- Tape measure and Zip ties

Tasks, Deliverables, and Timelines:

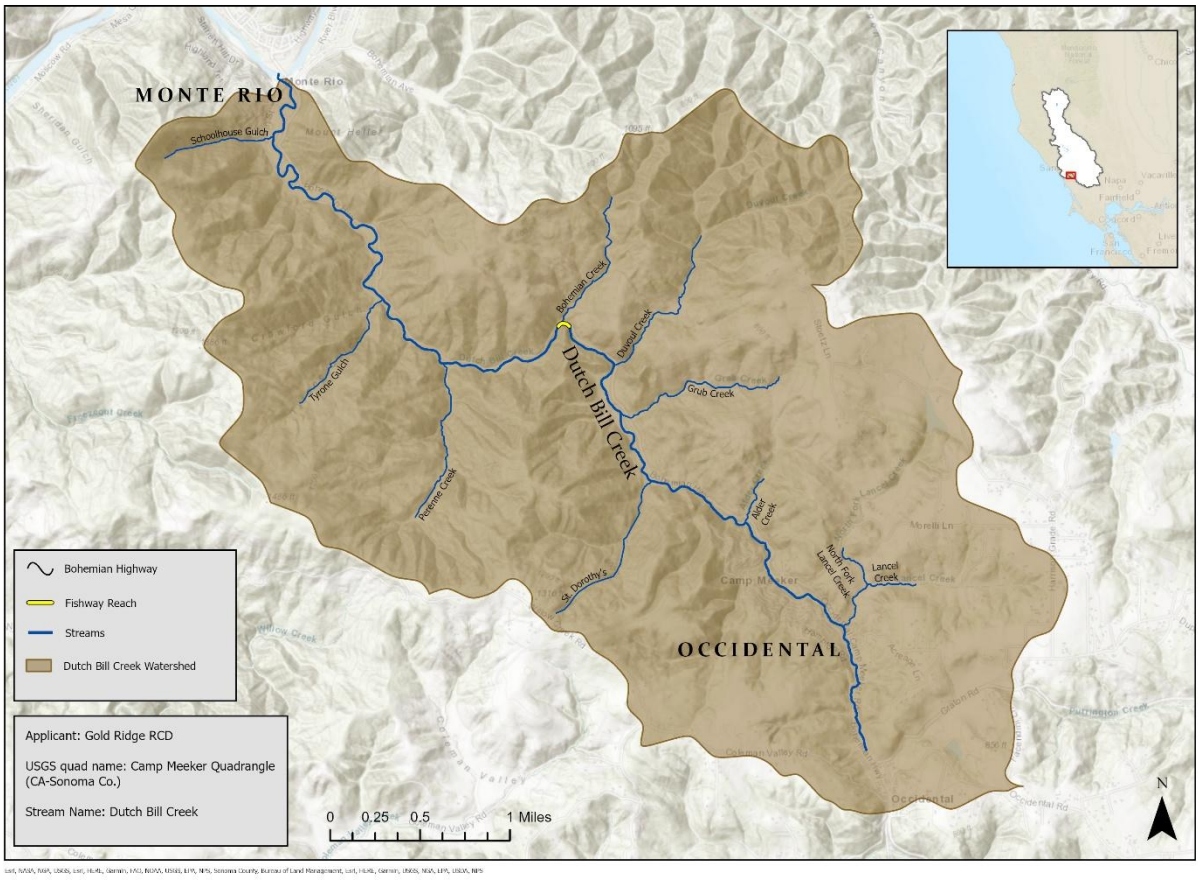
All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window.

Task Name	Start Date	Activity Description	Deliverables
Task 1 – Project Management and Administration	6/1/2027	The Gold Ridge RCD (GRRCD) will manage the project, carrying out all administrative and accounting tasks. These include grant management, accounting and invoicing, subcontracting, preparation of progress reports and annual and final reporting. GRRCD will convene and coordinate a Technical Advisory Committee to advise on and contribute to the design, as well as assist with identifying a preferred alternative to advance to final design. GRRCD will also engage in early tribal consultation on the project. The GRRCD Project Manager and Technical Specialist II will be the lead for this task, responsible for all activities listed above, assisted by the GRRCD Project Manager. The GRRCD Lead Scientist and Deputy Director will share oversight responsibilities for the project, while the GRRCD Bookkeeper and Financial Manager will set up and manage accounting and invoicing systems for the grant.	Final Landowner Access Agreement - Prior to receiving Notice to Proceed; Executed Subcontractor Agreements - Prior to receiving the Notice to Proceed; Invoices & Progress Reports: Due with each submitted invoice or at least quarterly Annual Reports - Due no later than November 15 of each year; Draft Final Report - January 31, 2029; Final Report - March 1, 2029;

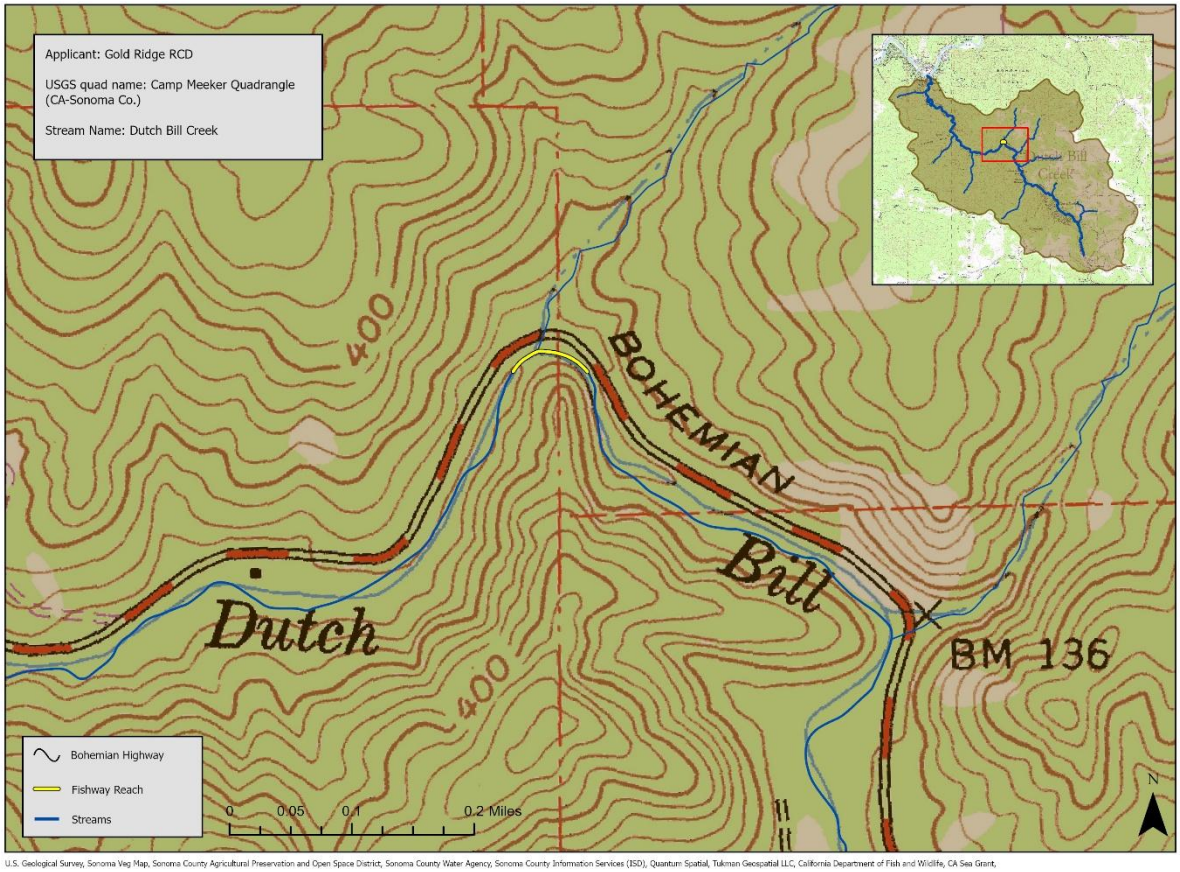
		The GRRCD Executive Director and Deputy Director will have overall review of the project and will lead interactions with the landowners, tribal entities and the County of Sonoma (owner of the adjacent highway).	Final Invoice - April 15, 2029; Cost Share Documentation Form - March 1, 2029 Build America, Buy America Act Certification Form: March 1, 2029
Task 2 - Stream gauging	7/1/2027	GRRCD will contract with Trout Unlimited to continue to operate two existing stream gages on Dutch Bill Creek. TU will maintain gage equipment, download and process stage data and develop rating curves and discharge datasets to support PCI hydrologic inputs for design flow development and hydraulic modeling. The RCD Technical Specialist II and Project Manager will oversee TU's activities.	Final discharge dataset due 9/30/2028
Task 3: Feasibility analysis and design	7/1/2027	GRRCD will contract with PCI Ecological to conduct technical investigations of the site to evaluate project feasibility and produce design alternatives. Under the supervision of GRRCD, PCI will complete a phased work program that includes: (1) site assessment and special studies, including basemapping, targeted topographic survey of key features such as weirs, retaining walls, roadway elements, and culverts, geotechnical and structural analysis of the fishway and its interaction with Bohemian Highway and a cultural resources survey; (2) hydrology analysis using nearby	Feasibility Report with up to three conceptual alternatives: 1/31/2028 Preliminary Basis of Design report: 5/31/2028 30% conceptual plan set: 7/31/2028 Planning level cost estimate: 7/31/2028

		stream gage data to define low and high passage design flows for adult and juvenile salmonids and characterize peak flow hydrology; and (3) existing-conditions hydraulic analysis using 2D HEC-RAS. Additional details on surveys and other work to be carried out are in the attached PCI scope of work. PCI will then conduct an opportunities and constraints analysis incorporating permitting considerations and anticipated input from technical studies and develop up to three feasible conceptual design alternatives. Alternatives will be presented at a TAC meeting for review and selection of a preferred approach. PCI will then refine the preferred concept, complete preliminary engineering analyses and deliver a 30% plan set, a preliminary Basis of Design report documenting passage benefits and supporting calculations, and a planning-level cost estimate. The GRRCD Technical Specialist II will oversee and coordinate PCI's activities, assisted by the RCD Project Manager and supervised by the RCD Lead Scientist.	
Task 4: Regulatory Coordination and Compliance	10/1/2027	GRRCD and PCI will evaluate approaches to regulatory compliance and complete required CEQA surveys. As noted above, PCI will be responsible for a cultural resources survey. GRRCD will subcontract a paleontological survey to a qualified consultant, and GRRCD staff will carry out special status species and botanical surveys. The RCD Technical Specialist will be the lead on this task. The GRRCD Ecologist and Project Manager will perform survey work, assisted by the GRRCD Project Coordinator.	Cultural, botanical and paleontological survey reports due 5/31/2028

Dutch Bill Creek Fishway Remediation Design Project - Watershed Map



Dutch Bill Creek Fishway Remediation Design Project - Project Location



Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ambystoma californiense pop. 3	California tiger salamander - Sonoma County DPS	AAAAA01183	Endangered	Threatened	WL
Dicamptodon ensatus	California giant salamander	AAAAH01020	None	None	SSC
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	AAABH01051	None	None	SSC
Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC
Taricha rivularis	red-bellied newt	AAAAF02020	None	None	SSC
Accipiter striatus	sharp-shinned hawk	ABNKC12020	None	None	WL
Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP | WL
Astur cooperii	Coopers hawk	ABNKC12040	None	None	WL
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP
Chaetura vauxi	Vauxs swift	ABNUA03020	None	None	SSC
Ardea alba	great egret	ABNGA04040	None	None	-
Ardea herodias	great blue heron	ABNGA04010	None	None	-
Egretta thula	snowy egret	ABNGA06030	None	None	-
Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-
Anarhynchus nivosus nivosus	western snowy plover	ABNNB03031	Threatened	None	SSC
Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	-
Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	-
Progne subis	purple martin	ABPAU01010	None	None	SSC
Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC
Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC
Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC
Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC
Passerculus sandwichensis alaudinus	Bryants savannah sparrow	ABPBX99011	None	None	SSC
Nannopterum auritum	double-crested cormorant	ABNFD01020	None	None	WL
Melanerpes lewis	Lewis woodpecker	ABNYF04010	None	None	-
Asio otus	long-eared owl	ABNSB13010	None	None	SSC
Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-
Selasphorus rufus	rufous hummingbird	ABNUC51020	None	None	-
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC
Syncaris pacifica	California freshwater shrimp	ICMAL27010	Endangered	Endangered	-
Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-
Hesperoleucus parvipinnis	Gualala roach	AFCJB19025	None	None	SSC
Hesperoleucus symmetricus symmetricus	central California roach	AFCJB19021	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Hesperoleucus venustus navarroensis	northern coastal roach	AFCJB19031	None	None	SSC
Lavinia exilicauda exilicauda	Sacramento hitch	AFCJB19012	None	None	SSC
Mylopharodon conocephalus	hardhead	AFCJB25010	None	None	SSC
Hysterocarpus traskii pomo	Russian River tule perch	AFCQK02011	None	None	SSC
Eucyclogobius newberryi	tidewater goby	AFCQN04010	Endangered	None	SSC
Spirinchus thaleichthys	longfin smelt	AFCHB03010	None	Threatened	-
Spirinchus thaleichthys pop. 2	longfin smelt - San Francisco Bay-Delta DPS	AFCHB03040	Endangered	Threatened	-
Thaleichthys pacificus	eulachon	AFCHB04010	Threatened	None	SSC
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Lampetra ayresii	western river lamprey	AFBAA02030	None	None	SSC
Lampetra richardsoni	western brook lamprey	AFBAA02180	None	None	SSC
Oncorhynchus keta	chum salmon	AFCHA02020	None	None	-
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	-
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	SSC
Andrena blennospermatis	Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	-
Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Bombus pensylvanicus	American bumble bee	IIHYM24260	None	None	-
Dubiraphia giulianii	Giulianis dubiraphian riffle beetle	IICOL5A020	None	None	-
Lichnanthe ursina	bumblebee scarab beetle	IICOL67020	None	None	-
Callophrys mossii marinensis	Marin elfin butterfly	IILEPE2207	None	None	-
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	Proposed Threatened	None	-
Speyeria zerene behrensii	Behrens silverspot butterfly	IILEPJ6088	Endangered	None	-
Speyeria zerene myrtleae	Myrtles silverspot butterfly	IILEPJ608C	Endangered	None	-
Coelus globosus	globose dune beetle	IICOL4A010	None	None	-
Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC
Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Enhydra lutris nereis	southern sea otter	AMAJF09012	Threatened	None	FP
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Eumetopias jubatus	Steller sea lion	AMAJC03010	Delisted	None	-
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Lasiurus frantzii	western red bat	AMACC05080	None	None	SSC
Myotis evotis	long-eared myotis	AMACC01070	None	None	-
Myotis thysanodes	fringed myotis	AMACC01090	None	None	-
Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-
Tryonia imitator	mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	-
Vespericola marinensis	Marin hesperian	IMGASA4140	None	None	-
Anodonta californiensis	California floater	IMBIV04220	None	None	-
Anodonta oregonensis	Oregon floater	IMBIV04110	None	None	-
Gonidea angulata	western ridged mussel	IMBIV19010	None	None	-
Actinemys marmorata	northwestern pond turtle	ARAAD02031	Proposed Threatened	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	-
Coastal Brackish Marsh	Coastal Brackish Marsh	CTT52200CA	None	None	-
Coastal Terrace Prairie	Coastal Terrace Prairie	CTT41100CA	None	None	-
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	CTT52110CA	None	None	-
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-
Northern Vernal Pool	Northern Vernal Pool	CTT44100CA	None	None	-
Fissidens pauperculus	minute pocket moss	NBMUS2W0U0	None	None	-
Triquetrella californica	coastal triquetrella	NBMUS7S010	None	None	-
Thamnolia vermicularis	whiteworm lichen	NLTES43860	None	None	-
Usnea longissima	Methuselahs beard lichen	NLLEC5P420	None	None	-
Chlorogalum pomeridianum var. minus	dwarf soaproot	PMLIL0G042	None	None	-
Allium peninsulare var. franciscanum	Franciscan onion	PMLIL021R1	None	None	-
Perideridia gairdneri ssp. gairdneri	California Gairdners yampah	PDAPI1N062	None	None	-
Asclepias solanoana	serpentine milkweed	PDASC021R0	None	None	-
Blennosperma bakeri	Sonoma sunshine	PDAST1A010	Endangered	Endangered	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Centromadia parryi ssp. parryi	pappose tarplant	PDAST4R0P2	None	None	-
Cirsium andrewsii	Franciscan thistle	PDAST2E050	None	None	-
Erigeron biolettii	streamside daisy	PDAST3M5H0	None	None	-
Erigeron greenei	Greenes narrow-leaved daisy	PDAST3M5G0	None	None	-
Erigeron serpentinus	serpentine daisy	PDAST3M5M0	None	None	-
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	PDAST4R0W1	None	None	-
Hesperevax caulescens	hogwallow starfish	PDASTE5020	None	None	-
Hesperevax sparsiflora var. brevifolia	short-leaved evax	PDASTE5011	None	None	-
Lasthenia burkei	Burkes goldfields	PDAST5L010	Endangered	Endangered	-
Lasthenia californica ssp. bakeri	Bakers goldfields	PDAST5L0C4	None	None	-
Lasthenia californica ssp. macrantha	perennial goldfields	PDAST5L0C5	None	None	-
Lasthenia conjugens	Contra Costa goldfields	PDAST5L040	Endangered	None	-
Lessingia arachnoidea	Crystal Springs lessingia	PDAST5S0C0	None	None	-
Lessingia hololeuca	woolly-headed lessingia	PDAST5S030	None	None	-
Microseris paludosa	marsh microseris	PDAST6E0D0	None	None	-
Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-
Arabis blepharophylla	coast rockcress	PDBRA06040	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Erysimum concinnum	bluff wallflower	PDBRA160E3	None	None	-
Erysimum franciscanum	San Francisco wallflower	PDBRA160A0	None	None	-
Streptanthus barbiger	bearded jewelflower	PDBRA2G040	None	None	-
Streptanthus glandulosus ssp. hoffmanii	Hoffmans bristly jewelflower	PDBRA2G0J4	None	None	-
Streptanthus morrisonii ssp. hirtiflorus	Dorrs Cabin jewelflower	PDBRA2G0S2	None	None	-
Streptanthus morrisonii ssp. morrisonii	Morrisons jewelflower	PDBRA2G0S3	None	None	-
Downingia pusilla	dwarf downingia	PDCAM060C0	None	None	-
Eastwoodiella californica	swamp harebell	PDCAM02060	None	None	-
Legenere limosa	legenere	PDCAM0C010	None	None	-
Viburnum ellipticum	oval-leaved viburnum	PDCPR07080	None	None	-
Silene scouleri ssp. scouleri	Scoulers catchfly	PDCAR0U1MC	None	None	-
Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	PDCON04032	None	None	-
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	PDCON040D2	None	None	-
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	PDCUS01111	None	None	-
Cuscuta pacifica var. papillata	Mendocino dodder	PDCUS011A2	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Carex comosa	bristly sedge	PMCYP032Y0	None	None	-
Eleocharis parvula	small spikerush	PMCYP091G0	None	None	-
Eriophorum gracile	slender cottongrass	PMCYP0A080	None	None	-
Rhynchospora alba	white beaked-rush	PMCYP0N010	None	None	-
Rhynchospora californica	California beaked-rush	PMCYP0N060	None	None	-
Rhynchospora capitellata	brownish beaked-rush	PMCYP0N080	None	None	-
Rhynchospora globularis	round-headed beaked-rush	PMCYP0N0W0	None	None	-
Arctostaphylos bakeri ssp. bakeri	Bakers manzanita	PDERI04221	None	Rare	-
Arctostaphylos bakeri ssp. sublaevis	Cedars manzanita	PDERI04222	None	Rare	-
Arctostaphylos densiflora	Vine Hill manzanita	PDERI040C0	None	Endangered	-
Arctostaphylos hispidula	Howells manzanita	PDERI04230	None	None	-
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	PDERI041G4	None	None	-
Amorpha californica var. napensis	Napa false indigo	PDFAB08012	None	None	-
Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-
Lupinus tidestromii	Tidestroms lupine	PDFAB2B3Y0	Endangered	Endangered	-
Trifolium amoenum	two-fork clover	PDFAB40040	Endangered	None	-
Trifolium buckwestiorum	Santa Cruz clover	PDFAB402W0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-
Iris longipetala	coast iris	PMIRI092E0	None	None	-
Monardella viridis	green monardella	PDLAM180Q2	None	None	-
Calochortus raichei	Cedars fairy-lantern	PMLIL0D1L0	None	None	-
Calochortus uniflorus	pink star-tulip	PMLIL0D1F0	None	None	-
Fritillaria liliacea	fragrant fritillary	PMLIL0V0C0	None	None	-
Lilium pardalinum ssp. pitkinense	Pitkin Marsh lily	PMLIL1A0H3	Endangered	Endangered	-
Limnanthes vinculans	Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	-
Hesperolinon congestum	Marin western flax	PDLIN01060	Threatened	Threatened	-
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	PDMAL11012	None	None	-
Sidalcea malviflora ssp. purpurea	purple-stemmed checkerbloom	PDMAL110FL	None	None	-
Abronia umbellata var. breviflora	pink sand-verbena	PDNYC010N4	None	None	-
Clarkia imbricata	Vine Hill clarkia	PDONA050K0	Endangered	Endangered	-
Cypripedium californicum	California ladys-slipper	PMORC0Q040	None	None	-
Cypripedium montanum	mountain ladys-slipper	PMORC0Q080	None	None	-
Platanthera ephemerantha	white-flowered rein orchid	PMORC1X050	None	None	-
Platanthera leptopetala	narrow-petaled rein orchid	PMORC1X100	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-
Castilleja latifolia	Monterey Coast paintbrush	PDSCR0D1P0	None	None	-
Castilleja uliginosa	Pitkin Marsh paintbrush	PDSCR0D380	None	Endangered	-
Chloropyron maritimum ssp. palustre	Point Reyes salty birds-beak	PDSCR0J0C3	None	None	-
Cordylanthus tenuis ssp. brunneus	serpentine birds-beak	PDSCR0J0S1	None	None	-
Cordylanthus tenuis ssp. capillaris	Pennells birds-beak	PDSCR0J0S2	Endangered	Rare	-
Kopsiopsis hookeri	small groundcone	PDORO01010	None	None	-
Triphysaria floribunda	San Francisco owls-clover	PDSCR2T010	None	None	-
Erythranthe nudata	bare monkeyflower	PDSCR1B200	None	None	-
Agrostis blasdalei	Blasdales bent grass	PMPOA04060	None	None	-
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	PMPOA07012	Endangered	None	-
Calamagrostis bolanderi	Bolanders reed grass	PMPOA17010	None	None	-
Calamagrostis crassiglumis	Thurbers reed grass	PMPOA17070	None	None	-
Calamagrostis ophitidis	serpentine reed grass	PMPOA170V0	None	None	-
Elymus californicus	California bottle-brush grass	PMPOA2H0W0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Pleuropogon hooverianus	North Coast semaphore grass	PMPOA4Y070	None	Threatened	-
Collomia diversifolia	serpentine collomia	PDPLM02020	None	None	-
Gilia capitata ssp. chamissonis	blue coast gilia	PDPLM040B3	None	None	-
Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-
Gilia capitata ssp. tomentosa	woolly-headed gilia	PDPLM040B9	None	None	-
Gilia millefoliata	dark-eyed gilia	PDPLM04130	None	None	-
Leptosiphon aureus	bristly leptosiphon	PDPLM09010	None	None	-
Leptosiphon grandiflorus	large-flowered leptosiphon	PDPLM090K0	None	None	-
Leptosiphon jepsonii	Jepsons leptosiphon	PDPLM09140	None	None	-
Leptosiphon rosaceus	rose leptosiphon	PDPLM09180	None	None	-
Navarretia leucocephala ssp. bakeri	Bakers navarretia	PDPLM0C0E1	None	None	-
Navarretia leucocephala ssp. plieantha	many-flowered navarretia	PDPLM0C0E5	Endangered	Endangered	-
Polemonium carneum	Oregon polemonium	PDPLM0E050	None	None	-
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	PDPGN04081	None	None	-
Chorizanthe cuspidata var. villosa	woolly-headed spineflower	PDPGN04082	None	None	-
Chorizanthe valida	Sonoma spineflower	PDPGN040V0	Endangered	Endangered	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Eriogonum cedrorum	Cedars buckwheat	PDPGN087A0	None	None	-
Eriogonum ternatum	ternate buckwheat	PDPGN085R0	None	None	-
Polygonum marinense	Marin knotweed	PDPGN0L1C0	None	None	-
Delphinium bakeri	Bakers larkspur	PDRAN0B050	Endangered	Endangered	-
Delphinium luteum	golden larkspur	PDRAN0B0Z0	Endangered	Rare	-
Ranunculus lobbii	Lobbs aquatic buttercup	PDRAN0L1J0	None	None	-
Ceanothus confusus	Rincon Ridge ceanothus	PDRHA04220	None	None	-
Ceanothus foliosus var. vineatus	Vine Hill ceanothus	PDRHA040D6	None	None	-
Ceanothus gloriosus var. exaltatus	glory brush	PDRHA040F4	None	None	-
Ceanothus gloriosus var. gloriosus	Point Reyes ceanothus	PDRHA040F5	None	None	-
Ceanothus purpureus	holly-leaved ceanothus	PDRHA04160	None	None	-
Holodiscus discolor var. cedrorum	Cedars oceanspray	PDROS0V041	None	None	-
Horkelia marinensis	Point Reyes horkelia	PDROS0W0B0	None	None	-
Horkelia tenuiloba	thin-lobed horkelia	PDROS0W0E0	None	None	-
Potentilla uliginosa	Cunningham Marsh cinquefoil	PDROS1B4A0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Brodiaea leptandra	narrow-anthered brodiaea	PMLIL0C022	None	None	-
Dirca occidentalis	western leatherwood	PDTHY03010	None	None	-

Upper Lawrence Coho Habitat Enhancement Project *(Project ID: 1736452) 2026*

Introduction:

The Eel River Watershed Improvement Group (ERWIG) (Grantee) will construct 50 habitat structures along 2.2 miles of Lawrence Creek. The structures will be made up of 165 logs and will provide spawning and rearing habitat for coho in Lawrence Creek. Log structures are designed to deepen pools, provide cover, provide velocity refugia, and capture spawning gravels. Adding logs to the project reach will improve ecological complexity and function.

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* Volume I, Section VII. Applicant indicated using protocols from CDFW California Salmonid Stream Habitat Restoration Manual Volume I Section VII and CDFW Fish Bulletin 184.

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

This project is on Lawrence Creek. The project reach starts approximately 6.5 miles upstream of the confluence with Yager Creek and approximately 2.1 miles upstream with the Fish Creek confluence. The project reach extends upstream 2.2 miles, the top of the reach is at Bell Creek.

Project central coordinates: 40.66262, -123.96777

Project Description:

The goal of this project is to restore coho salmon habitat in Lawrence Creek by constructing 50 large wood structures made up of 165 logs and logs with rootwads. These structures will be placed along 2.2 miles of Lawrence Creek in a Lawrence Creek reach that coho use to spawn and rear. Through a previous FRGP design grant ERWIG conducted a habitat inventory of the project reach to inform limiting factors and habitat needs in the stream reach. Limiting factors including spawning habitat and slow water habitat. Habitat structures are designed to provide velocity refugia, deepen pools and capture spawning gravels. Some structures will help raise water levels providing slow water resting areas on the stream margins and on the flood plain where it is accessible. This project will meet the "Very Good" target value for pieces of large wood as set up in Fish Bulletin 184 (Flosi, Casley & Smelser, 2024). This project will more than double the number of pieces of large wood in the project reach resulting in improved stream ecosystem function.

Materials:

All the following materials will be purchased by the applicant.

Anchoring Materials: Threaded bar, steel nuts, steel washers (plates), ¾" chain, glue, timber bits, bit extensions, band saw blades, wood drill, rock drill, rock drill bits, hammers, gloves, and batteries for power tools. All these materials will be used to anchor the wood structures into place.

Gripping Materials: Griphoist, cables, chokers, tree straps, clevises, blocks, cable shorteners, and shear pins. Used to grip logs into place where there is no heavy equipment access.

Erosion Control and Revegetation: rice straw, native plants and trees. Used after logs are placed to restore areas disturbed by project work.

Conifer Logs: Used to build the large wood features. Some of the project logs will be purchased, some will be donated.

LSAA permit fee: Needed for instream work.

ERWIG Mileage: Reimbursement for miles driven by ERWIG staff to and from project site in order to manage the project. Will follow California state reimbursement rate.

Tool Repair: Instead of buying new tools, tools will be repaired if cost effective.

Forklift Rental: A forklift is needed to unload the large threaded bar, nut and washer order that will be delivered to the ERWIG office.

Tasks, Deliverables, and Timelines:

All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window.

Task Name	Start Date	Activity Description	Deliverables
Task 1. Project Management and Administration	5/3/2027	ERWIG personnel will provide all contracting and administrative oversight pursuant to grant and regulatory guidelines. Project management includes grant management, contracting oversight and administration, scheduling landowner and agency communication, landowner access agreements, subcontracting, ongoing coordination with the various stakeholders, preparing invoices and progress reports, tracking project costs, and accomplishments, and submittal of final report and final invoice. ERWIG will track the project budget and develop and submit invoices to the grantor on a regular basis. In addition, the required annual report metrics will be generated and submitted to the CDFW contract manager each year.	1600 Permit - 7/1/2028, Executed Subcontracts - 7/1/2028, Access Agreements - 7/1/2028, Invoices - 7/1/2027, Progress Reports - With every invoice, Annual Report - Annually in November, Project Data - 2/28/2029, Draft Final Report - 2/28/29, Final Report - 3/30/2029, Final Invoice - 5/15/2029
Task 2. Site Preparation	6/1/2027	ERWIG will finalize site specific designs based on channel morphology, equipment access, and large wood availability. The Wiyot Tribe may provide input on project designs and implementation approach. ERWIG will submit any changes to designs for CDFW Grant Manager approval. ERWIG and Edwards Excavation and Restoration will meet on site and go over project logistics, spill response, and permit requirements. ERWIG will meet with an RPF from Humboldt Redwood Company and determine which riparian trees can be used for the project. Edwards Excavation and Restoration will transport purchased logs to the project site. ERWIG staff will flag sites for wood selection, staging, and installation, clear brush as needed, and designate staging areas for wood along the project reach.	Finalized design plans, flagged equipment access routes, pre-project photos and metrics. Deliverables will be delivered before work begins, no later than June 15, 2028.

		Pre-project photos and metrics will be collected by ERWIG. Tools and materials will be purchased by ERWIG prior to the start of implementation and on an as-needed basis throughout the project.	
Task 3. Habitat Feature Construction	6/15/2028	Upon approval from the CDFW Grant Manager, construction will begin on 50 LW features under the direction of the ERWIG Project Manager. Edwards Excavation and Restoration, who is a licensed timber operator, will cut down and uproot trees and saw them into logs for the project. Edwards Excavation will place logs and logs with root-wads, into the stream in accordance with design plans. When necessary, CCC Corpsmembers will move logs into position using a grip hoist come-along. The project will utilize living riparian trees as anchors by wedging the logs between them where feasible. CCC Corpsmembers will anchor the sites according to design and anchoring specifications. Corpsmembers will use one-inch threaded rebar to anchor logs to mature riparian trees and other logs. Holes will be drilled through the logs and their anchor trees using a wood drill, timber bit, and drill bit extensions when necessary. One-inch rebar will be inserted through the log and secured with nuts and washers. The CCCs will anchor to rock using 7/8" threaded bar and 3/4" chain. A 1" hole will be drilled into rock and the threaded bar will be glued into the hole using high strength epoxy. The threaded bar will be placed through the chain and secured with a washer and steel nut. The other end of the chain will be attached to a piece of threaded bar that is secured to a log or another rock. Corpsmembers will be supervised by a trained Conservationist 1 (C1) and the ERWIG Project Manager. The Construction Contractor, Wiyot Tribe, and ERWIG staff may assist the CCC with anchoring. Site construction, wood placement, and anchoring will be in accordance with the CDFW California	Fifty large wood features made of 165 logs, including at least 13 logs with root wads. Water quality reports and data. Completed by 10/31/2028

		Salmonid Stream Habitat Restoration Manual, Section VII (Flosi et al. 2010). Erosion control methods will be employed by the CCC and ERWIG as required at each structure and along equipment corridors to eliminate the possibility of sediment transport to the stream. Any tools that break down will be taken to a repair shop by the CCC. ERWIG will monitor water quality as needed. To address concerns over invasive species this project will follow the ERWIG Aquatic Invasive Species Decontamination Protocol, which is in line with the CDFW Aquatic Invasive Species Decontamination Protocol.	
Task 4. Riparian Planting	12/1/2028	ERWIG will return in the winter following project implementation to plant 200 redwood seedlings and 100 native plants, with a primary focus in areas disturbed by project activities and lacking sufficient conifer cover or riparian vegetation.	Two-hundred redwood seedlings and 100 native plants planted along the project reach. Due by 3/30/2029.
Task 5. Project Monitoring	11/1/2028	Following implementation ERWIG will take post-project photos and quantitative implementation metrics will be collected. ERWIG will complete a first winter observation report/memo. ERWIG will create as-built designs.	Post project photos and metrics, first winter observation portion of final report and as-built designs. Provided by March 30, 2029

Additional Requirements:

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured, including cultural and biological surveys. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife (CDFW).

No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the streambed and flood plain areas at the end of each workday.

All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol.

During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual, 4th Edition (CA Restoration Manual)* or *other approved guidelines and manuals for salmon and steelhead habitat restoration*.

The Grantee shall notify CDFW at least five working days before the project site is de-watered and the stream flow diverted and submit a Water Quality Monitoring Plan and Dewatering Plan to CDFW for State Water Resources Control Board approval at least 30 days before the activity. The notification will provide a reasonable time for CDFW personnel to oversee the implementation of the water diversion plan and the safe removal and relocation of salmonids

and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:

a. Fish dewatering and relocation activities shall only occur between June 15 and October 31 of each year.

b. Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.

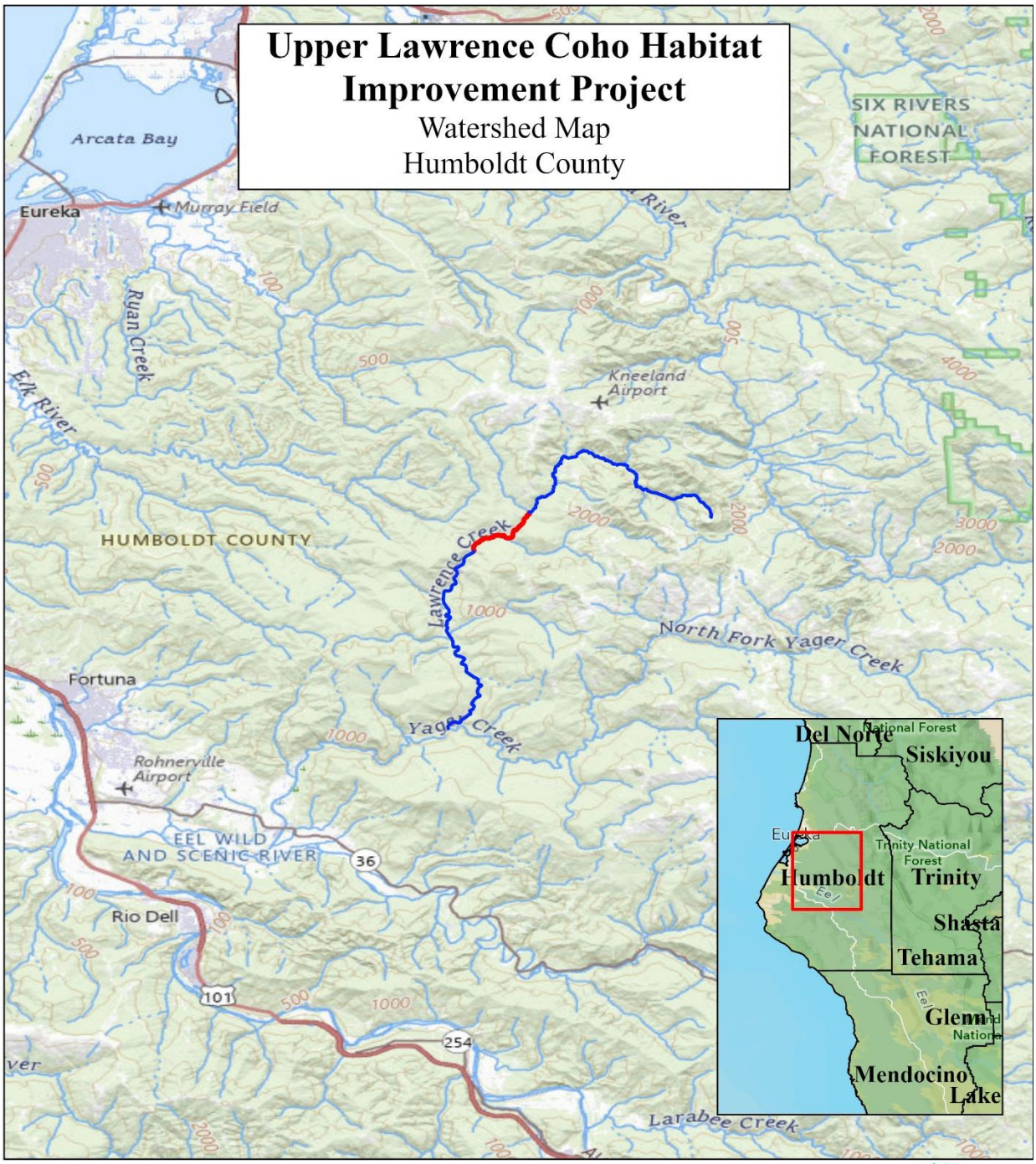
c. The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the USACE Regional General Permit and National Marine Fisheries Service (NMFS) Biological Opinion.

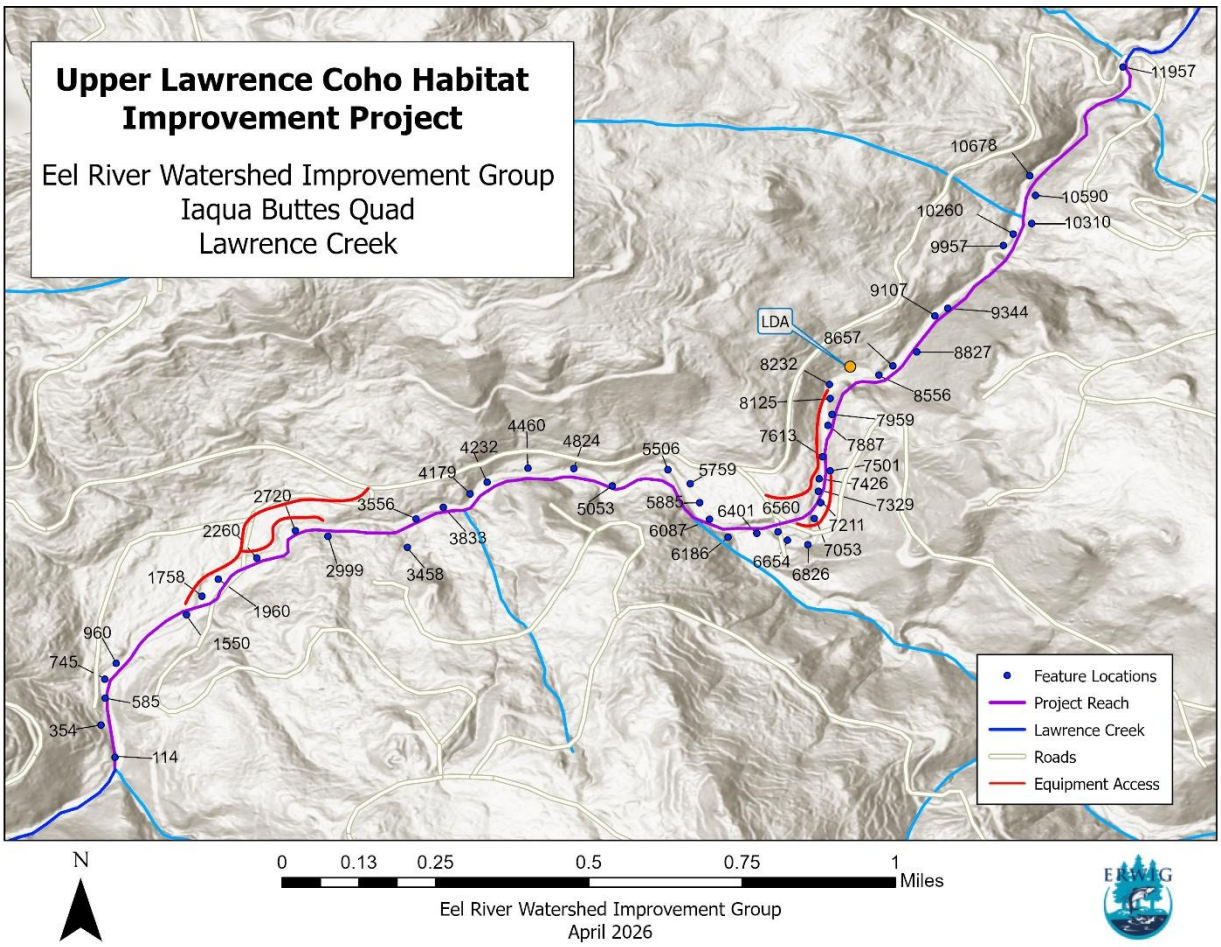
d. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.

e. USFWS Approved fisheries biologists will provide fish relocation data via the Grantee to the CDFW personnel on a form provided by CDFW.

Final structure design and placement will be determined by field consultation between the Grantee and the CDFW Personnel.

Planting of tree seedlings should take place after December 1 or when sufficient rainfall has occurred to ensure the best chance of survival of the seedlings.


Upper Lawrence Coho Habitat Improvement Project
Watershed Map
Humboldt County
Arcata Bay
Eureka
Murray Field
SIX RIVERS NATIONAL FOREST
Ryan Creek
Elk River
Kneeland Airport
HUMBOLDT COUNTY
Lawrence Creek
North Fork Yager Creek
Yager Creek
Fortuna
Rohnerville Airport
EEL WILD AND SCENIC RIVER
Rio Dell
36
101
254
Larabee Creek
Del Norte
Siskiyou
Humboldt
Trinity
Shasta
Tehama
Glenn
Mendocino
Lake
Trinity National Forest
Project Reach
Lawrence Creek
0 1 2 4 6 8
Miles
N
Eel River Watershed Improvement Group
June 2026
ERWIG


Upper Lawrence Coho Habitat Improvement Project
Eel River Watershed Improvement Group
Iaqua Buttes Quad
Lawrence Creek
11957
10678
10590
10260
10310
9957
9107
9344
LDA
8657
8827
8232
8556
8125
7959
7613
7887
7501
7426
7329
7211
7053
6826
6654
6186
6087
6401
6560
5885
5759
5506
5053
4824
4460
4232
4179
3838
3556
3458
2999
2720
2260
1960
1758
1550
960
745
585
354
114
Feature Locations
Project Reach
Lawrence Creek
Roads
Equipment Access
N
0
0.13
0.25
0.5
0.75
1
Miles
Eel River Watershed Improvement Group
April 2026

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ascaphus truei	Pacific tailed frog	AAABA01010	None	None	SSC
Plethodon elongatus	Del Norte salamander	AAAAD12050	None	None	WL
Rana aurora	northern red-legged frog	AAABH01021	None	None	SSC
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	AAABH01051	None	None	SSC
Rhyacotriton variegatus	southern torrent salamander	AAAAJ01020	None	None	SSC
Accipiter striatus	sharp-shinned hawk	ABNKC12020	None	None	WL
Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP | WL
Astur atricapillus	American goshawk	ABNKC12061	None	None	SSC
Astur cooperii	Coopers hawk	ABNKC12040	None	None	WL
Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP
Brachyramphus marmoratus	marbled murrelet	ABNNN06010	Threatened	Endangered	-
Ardea herodias	great blue heron	ABNGA04010	None	None	-
Botaurus lentiginosus	American bittern	ABNGA01020	None	None	-
Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-
Anarhynchus montanus	mountain plover	ABNNB03100	None	None	SSC
Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	-
Antigone canadensis canadensis	lesser sandhill crane	ABNMK01011	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Antigone canadensis tabida	greater sandhill crane	ABNMK01014	None	Threatened	FP
Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-
Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC
Thalasseus elegans	elegant tern	ABNNM08040	None	None	WL
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Poecile atricapillus	black-capped chickadee	ABPAW01010	None	None	WL
Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC
Passerculus sandwichensis alaudinus	Bryants savannah sparrow	ABPBX99011	None	None	SSC
Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	-
Nannopterum auritum	double-crested cormorant	ABNFD01020	None	None	WL
Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC
Numenius americanus	long-billed curlew	ABNNF07070	None	None	WL
Asio flammeus	short-eared owl	ABNSB13040	None	None	SSC
Athene cunicularia	burrowing owl	ABNSB10010	None	Candidate Endangered	SSC
Strix nebulosa	great gray owl	ABNSB12040	None	Endangered	-
Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Acipenser medirostris pop. 1	green sturgeon - southern DPS	AFCAA01031	Threatened	None	SSC
Acipenser medirostris pop. 2	green sturgeon - northern DPS	AFCAA01032	None	None	SSC
Cottus asper ssp.	Clear Lake prickly sculpin	AFC4E02021	None	None	SSC
Eucyclogobius newberryi	tidewater goby	AFCQN04010	Endangered	None	SSC
Spirinchus thaleichthys	longfin smelt	AFCHB03010	None	Threatened	-
Thaleichthys pacificus	eulachon	AFCHB04010	Threatened	None	SSC
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Lampetra richardsoni	western brook lamprey	AFBAA02180	None	None	SSC
Oncorhynchus clarkii	coast cutthroat trout	AFCHA0208A	None	None	SSC
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-
Oncorhynchus mykiss irideus pop. 48	steelhead - northern California DPS summer-run	AFCHA0213P	Threatened	Endangered	-
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	AFCHA0213Q	Threatened	None	SSC
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Cicindela hirticollis gravida	sandy beach tiger beetle	IICOL02101	None	None	-
Scaphinotus behrensi	Behrens snail-eating beetle	IICOL4L070	None	None	-
Aplodontia rufa humboldtiana	Humboldt mountain beaver	AMAFA01017	None	None	-
Arborimus albipes	white-footed vole	AMAFF23010	None	None	SSC
Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC
Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-
Martes caurina humboldtensis	Humboldt marten	AMAJF01017	Threatened	Endangered	SSC
Pekania pennanti	Fisher	AMAJF01020	None	None	SSC
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Bassariscus astutus raptor	northern California ringtail	AMAJE01014	None	None	FP
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Myotis evotis	long-eared myotis	AMACC01070	None	None	-
Littorina subrotundata	Newcombs littorine snail	IMGASR3010	None	None	-
Margaritifera falcata	western pearlshell	IMBIV27020	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Anodonta californiensis	California floater	IMBIV04220	None	None	-
Actinemys marmorata	northwestern pond turtle	ARAAD02031	Proposed Threatened	None	SSC
North Central Coast Summer Steelhead Stream	North Central Coast Summer Steelhead Stream	CARA2634CA	None	None	-
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	CTT52110CA	None	None	-
Upland Douglas Fir Forest	Upland Douglas Fir Forest	CTT82420CA	None	None	-
Fissidens pauperculus	minute pocket moss	NBMUS2W0U0	None	None	-
Platismatia lacunosa	crinkled rag lichen	NLLEC2Q010	None	None	-
Usnea longissima	Methuselahs beard lichen	NLLEC5P420	None	None	-
Angelica lucida	sea-watch	PDAPI070G0	None	None	-
Sanicula tracyi	Tracys sanicle	PDAPI1Z0K0	None	None	-
Erigeron robustior	robust daisy	PDAST3M134	None	None	-
Hemizonia congesta ssp. tracyi	Tracys tarplant	PDAST4R067	None	None	-
Microseris borealis	northern microseris	PDAST6E030	None	None	-
Packera bolanderi var. bolanderi	seacoast ragwort	PDAST8H0H1	None	None	-
Wyethia longicaulis	Humboldt County wyethia	PDAST9X0A0	None	None	-
Cardamine angulata	seaside bittercress	PDBRA0K010	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Noccaea fendleri ssp. californica	Kneeland Prairie pennycress	PDBRA2P041	Endangered	None	-
Downingia willamettensis	Cascade downingia	PDCAM060E0	None	None	-
Spergularia canadensis var. occidentalis	western sand-spurrey	PDCAR0W032	None	None	-
Cornus unalaschkensis	bunchberry	PDCOR010F0	None	None	-
Sedum flavidum	pale yellow stonecrop	PDCRA0A0L2	None	None	-
Carex arcta	northern clustered sedge	PMCYP030X0	None	None	-
Carex lyngbyei	Lyngbyes sedge	PMCYP037Y0	None	None	-
Carex praticola	northern meadow sedge	PMCYP03B20	None	None	-
Eleocharis parvula	small spikerush	PMCYP091G0	None	None	-
Astragalus rattanii var. rattanii	Rattans milk-vetch	PDFAB0F7E2	None	None	-
Astragalus umbraticus	Bald Mountain milk-vetch	PDFAB0F990	None	None	-
Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-
Lathyrus glandulosus	sticky pea	PDFAB251A0	None	None	-
Lathyrus japonicus	seaside pea	PDFAB250C0	None	None	-
Thermopsis robusta	robust false lupine	PDFAB3Z0D0	None	None	-
Ribes laxiflorum	trailing black currant	PDGRO020V0	None	None	-
Calochortus uniflorus	pink star-tulip	PMLIL0D1F0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Erythronium oregonum	giant fawn lily	PMLIL0U0C0	None	None	-
Erythronium revolutum	coast fawn lily	PMLIL0U0F0	None	None	-
Fritillaria purdyi	Purdys fritillary	PMLIL0V0H0	None	None	-
Lilium kelloggii	Kelloggs lily	PMLIL1A0A0	None	None	-
Lilium occidentale	western lily	PMLIL1A0G0	Endangered	Endangered	-
Lilium rubescens	redwood lily	PMLIL1A0N0	None	None	-
Lilium washingtonianum ssp. purpurascens	purple-flowered Washington lily	PMLIL1A0R2	None	None	-
Lycopodium clavatum	running-pine	PPLYC01080	None	None	-
Iliamna bakeri	Bakers globe mallow	PDMAL0K010	None	None	-
Iliamna latibracteata	California globe mallow	PDMAL0K040	None	None	-
Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0	None	None	-
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	PDMAL110F9	None	None	-
Sidalcea oregana ssp. eximia	coast checkerbloom	PDMAL110K9	None	None	-
Monotropa uniflora	ghost-pipe	PDMON03030	None	None	-
Pityopus californicus	California pinefoot	PDMON05010	None	None	-
Lewisia kelloggii ssp. kelloggii	Kelloggs lewisia	PDPOR040M1	None	None	-
Montia howellii	Howells montia	PDPOR05070	None	None	-
Epilobium oreganum	Oregon fireweed	PDONA060P0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Epilobium septentrionale	Humboldt County fuchsia	PDONA06110	None	None	-
Neottia cordata	heart-leaved twayblade	PMORC1N060	None	None	-
Platanthera ephemerantha	white-flowered rein orchid	PMORC1X050	None	None	-
Platanthera stricta	slender bog-orchid	PMORC1Y0P0	None	None	-
Castilleja ambigua var. humboldtiensis	Humboldt Bay owls-clover	PDSCR0D402	None	None	-
Chloropyron maritimum ssp. palustre	Point Reyes salty birds-beak	PDSCR0J0C3	None	None	-
Glyceria grandis	American manna grass	PMPOA2Y080	None	None	-
Pleuropogon refractus	nodding semaphore grass	PMPOA4Y080	None	None	-
Collomia tracyi	Tracys collomia	PDPLM020B0	None	None	-
Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-
Navarretia leucocephala ssp. bakeri	Bakers navarretia	PDPLM0C0E1	None	None	-
Coptis laciniata	Oregon goldthread	PDRAN0A020	None	None	-
Sanguisorba officinalis	great burnet	PDROS1L060	None	None	-
Bensoniella oregona	bensoniella	PDSAX02010	None	Rare	-
Chrysosplenium glechomifolium	Pacific golden saxifrage	PDSAX07020	None	None	-
Mitellastra caulescens	leafy-stemmed mitrewort	PDSAX0N020	None	None	-
Tiarella trifoliata var. trifoliata	trifoliate laceflower	PDSAX10031	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Viola palustris	alpine marsh violet	PDVIO041G0	None	None	-

Mill Creek and Palmer Creek Instream Habitat Enhancement Implementation

(Project ID: 1736455) 2026

Introduction:

The Coast Range Watershed Institute (Grantee) will implement the Mill Creek and Palmer Creek Instream Habitat Enhancement Implementation project (Project) which will install 40 engineered large woody material (LWM) structures with 204 logs in Mill and Lower Palmer Cks plus 12 directly placed un-anchored pieces of LWM in Upper Palmer Ck. The increase in LWM will meet "very good" wood loading targets and promote deposition of gravel to enhance spawning habitat and provide velocity shelter for over-wintering juvenile coho. The project is expected to improve habitat complexity, activate adjacent low lying floodplain and increase pool habitat.

The Grantee shall not proceed with on-the-ground implementation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* Volume II, Sections I, VI, VII, and VIII.

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The project is located in the a 6,600 foot reach of the main stem of Mill Creek beginning 430 feet above its confluence with Palmer Creek. The project site includes 1,600 feet of Palmer Creek extending upstream of its confluence with Mill Creek. Large wood sites on Palmer Creek are confined to the lower 100 ft just above the confluence with Mill creek and the upper 150 ft near the northern project parcel boundary. Mill Creek is a tributary stream to Dry Creek with drains into the Russian River west of the city of Healdsburg in Sonoma County California The Project site is located 5.7 miles upstream of the confluence with Dry Creek.

From the Confluence with Dry Creek, the Russian River is located another 1.3 miles downstream.

Project central coordinates: 38.58521, -122.94071

Project Description:

This project will install a series of 40 engineered instream large woody material (LWM) habitat enhancement features containing 204 logs in Mill and Lower Palmer Creeks plus 12 directly placed un-anchored pieces of LWM in Upper Palmer Creek. Of the total 216 pieces of LWM, 107 will be acquired using accelerated wood recruitment (AWR) techniques. The project reach is defined as the reach of Mill Creek and Palmer Creek within the parcel owned by the cooperating landowner comprising approximately 8,200 feet (1.5 miles) or 35.5 acres of coho salmon habitat in Mill Creek which is tributary to Dry Creek and thence the Russian River in Sonoma County.

The project reach consists of about 6,600 ft of Mill Creek where 38 proposed LWM structures occupy 5,730 ft of that reach along with approximately 1,600 ft of Palmer Creek, a tributary that enters in the upper end of the Mill Creek reach. Two proposed LWM structures are located within the lower 100 ft of the Palmer Creek Reach and 12 AWR trees located in the upper portion of the Palmer Creek reach are planned to be installed using equipment assisted placement. Within the 216 pieces of LWM proposed to be installed 53 met key piece sizing criteria in Mill Creek while 12 logs proposed for upper Palmer are key piece sized. The addition of these key pieces will elevate both the Mill Creek and Palmer creeks above the "very good" habitat threshold based on a minimum key piece count of 3 per 330 ft as stated in Fish Bulletin 184 (Flossi et. al., 2024).

At present, the limited abundance of large woody material (LWM) in the project reach is believed to significantly affect streambed conditions and habitat quality for coho salmon. The process-based habitat enhancement strategy for the project reach is to introduce large quantities of LWM in complex structures designed to be stable and to interact with a wide range of streamflow. A significant portion of LWM to be installed in Mill Creek will be obtained from second growth conifer stands in the riparian zone and adjacent hillsides and is considered accelerated wood recruitment (AWR). AWR trees have been selected to minimize potential loss of overstory canopy benefiting stream habitat and will be directionally felled away from the stream and moved into place with heavy equipment. LWM that is not provided by AWR for the Mill Creek project reach will be purchased from the project parcel's landowner and harvested from locations remote from the Mill and Palmer Creek project site according to terms of the landowner's Non-industrial Timber Management Plan. The landowner will harvest the LWM and stockpile it on landings and other locations on the property to be transported later to locations needed by the project contractor.

The process-based strategy to significantly increase LWM abundance is expected to promote deposition and sorting of gravel that will significantly enhance spawning habitat and encourage development of pools. The pools and LWM will provide velocity shelter for over-wintering juvenile coho salmon and summer rearing habitat and shelter from predators in summer. In addition, this strategy is expected to improve habitat complexity and shelter quality of pool habitat. The large increase in abundance of stable LWM structures in Mill Creek will greatly increase the capacity of the project reach to accumulate LWM (and smaller woody material) entering the project reach from adjacent riparian forest stands and from upstream sources.

Materials:

For engineered structures in Mill Creek and Lower Palmer Creek reaches:

- individual logs (anchored),
- logs fastened together (complex feature),
- logs with roots attached (root wads)
- rocks/boulders (fastened or anchored)

Upper Palmer Creek reach non engineered key piece placements:

- individual logs (unanchored)

Individual Logs (unanchored) totalling:

Mill Creek:

- 59 AWR logs - Donated by landowner
- 36 AWR logs with rootwad - Donated by landowner
- 92 offsite logs - harvested from Max Property under an NTMP and sold to project
- 7 offsite logs with rootwad harvested from Max Property under NTMP and sold to project

Palmer Creek

- 11 AWR logs - Donated by landowner
- 1 AWR log with rootwad - Donated by landowner
- 9 offsite logs - harvested from Max Property under NTMP and sold to project
- 1 offsite log with rootwad - harvested from Max Property under NTMP and sold to project

Erosion control materials including:

- Seed free straw mulch
- Straw wattles
- Wooden stakes
- Permanent Erosion control seed mix

Tasks, Deliverables, and Timelines:

All in-water work will comply with seasonal work windows. Generally, in-water work will be between June 15 to October 31, unless there is a species-specific work window.

Task Name	Start Date	Activity Description	Deliverables
Task 1. Project Management and Administration	4/15/2027	CRWI staff will perform overall project administration and coordination and be responsible for communication with the landowners and coordination with subcontractors, permitting agencies, CDFW and NOAA staff. CRWI is responsible for grant management and administration including invoicing and reporting required per FRGP grant terms. CRWI will receive invoices from contractors and submit invoices and progress reports periodically (at least as often as quarterly) to FRGP. Additional time for communication and/or site visits outside of deliverables review has also been included in the budget.	Progress Reports and Invoices at least quarterly. Final reporting Due 6/15/2031
Task 2. Outreach - Tribal and Community	7/15/2026	This task includes communications to neighbors to the project by CRWI and O'Connor Environmental Inc. (OEI.) Communications will be via email or mail and during onsite or possibly virtual meetings with community members. The intent of these communications will be to help them understand the project goals discuss designs and anticipated impacts and avoidance measures to be taken during and after construction and to address any questions or concerns related to those topics. Signage with a description of the project will be created and posted along the side of Mill Creek above at least one of the highly visible worksites as well as an information sheet (PDF)describing the project. Communications with local tribal representatives will occur as a part of the Cultural resources survey work performed by PCI. Communications will be via email and during onsite	Deliverables include a summary pamphlet PDF and signage posted near project site in one or more locations. These will be completed by 5/15/2027

		or possibly virtual meetings to ensure the project will not be impacting sensitive sites. This will include discussion of findings of archeological survey work performed by PCI and their contractors. Portions of this work will be funded by Sonoma Water funds anticipated to arrive early July 2026.	
Task 3. Permitting	7/15/2026	PCI Ecological will coordinate with agencies in collaboration with CRWI and OEI to obtain necessary permits for project implementation. This will include completing applications, and coordination with State, County and Federal agencies. The project intends to take advantage of CDFW programmatic permits. Below are main permitting work that will occur under this activity. - Provide information for 404 and 401 programmatic permit documentation - California Department of Fish and Wildlife restoration management permit - Sonoma County Riparian Use Permit for work in the riparian corridor, including additional CEQA compliance tasks - Sonoma County Roiling Permit for work in streams - Sonoma County Grading Permit - Sonoma County Encroachment Permit OEI and PCI engineering staff will engage with agencies at meetings and respond to requests and questions regarding technical inquires as needed.	All Approved permits listed above are expected to be acquired by spring 2027 Project permitting information table with actual / final values will be provided in final report at close of grant 6/15/2031

		This work will begin as soon as promised Matching funds from Sonoma Water become available. Anticipated date for this is early July 2026.	
Task 4. Special Studies Resource Review	4/15/2026	Cultural Resources Site Assessment and Tribal Monitor. PCI will hire ALTA Archaeological Consulting to conduct an archaeological background literature review, complete field surveys, and prepare an Archaeological Survey Report in accordance with the standard guidelines in Archaeological Resource Management Reports. Biological Resources Evaluation. PCI biology staff will complete a literature and database review to determine the potential for presence of special-status wildlife and plant species. PCI will conduct a site visit to evaluate and map aquatic and terrestrial habitats, create maps and figures to illustrate the resources present, and prepare a Biological Resources Evaluation Report for use during permitting and the CEQA evaluation. The special-status species likely to require consideration include northern spotted owls, bats, foothill yellow-legged frog, nesting birds, newts, California giant salamander, and salmonids. Other species may be evaluated during the assessment. The evaluation will identify potential benefits and impacts from the project, and protection measures to minimize negative impacts. This work will begin as soon as promised Matching funds from Sonoma Water become available. Anticipated date for this is early July 2026.	Archaeological Survey Report Due date 11/1/2026 Biological Resources Evaluation Report Due date 11/1/2026
Task 5. Construction	6/15/2027	Construction of this project will be performed in Phases. All construction work will be performed by Blencowe Watershed management and their subcontractors. Phase 1 includes the initial felling of AWR trees. Wintertime	In the Mill Creek reach 38 engineered LWM structures containing 194 logs, 53 of these will be key-piece sized thus elevating the treated reach to

		harvest and felling and staging of AWR trees to avoid sensitive species and fire risks. The time window when nesting is not a concern is during November and December. Trees will be felled in place typically uphill and away from the Creek in late 2026 or early 2027 and left until construction begins in the summer of 2027. Phase 2 of construction will complete a portion of structures in the summer of 2027. Approximately ½ of the 40 structures will be targeted for completion. Sites that are anticipated to capture existing mobile LWM will be prioritized including those in work Areas M1 and M5. Phase 3 of construction will complete the remainder of structures and include placement of un-anchored key pieces of LWM in Upper palmer Creek in the summer of 2028. The construction task includes subtasks for construction coordination, oversite and monitoring by design staff OEI and engineering support staff at PCI Ecological: 5a. Pre-construction phase field coordination: Work to relocate and possibly re-establish elevation control points, confirm AWR tree locations to assist in AWR felling	a "very good" wood loading per Fish Bulletin 184 (Flossi et. al, 2024) Estimated partial completion of Phase 1 and 2 by 10/15/2027 Estimated full completion by 10/15/2028 In the Palmer creek reach two engineered LWM structures containing 10 logs will be built in Lower Palmer, plus 12 un-anchored LWM pieces, all key piece sized, will be placed in Upper Palmer Creek The addition of the 12 key pieces will elevation the treated reach (1,600ft) to a "very good" wood loading per Fish Bulletin 184 (Flossi et. al, 2024) Est. completion by 10/15/28 As built plans of constructed structures in Mill and Lower Palmer plus final placements of key piece unanchored LWM in Upper Palmer Creek reach. Plans will include scaled plan view drawings final quantities and sizes of materials installed and note any design changes.

		phase of work, address access to Palmer Creek site by engaging with Palmer Creek Rd Association. 5b. Construction Kickoff meetings and ongoing coordination: This includes communications and coordination by OEI and PCI and with main contractor Blencowe Watershed Management and other subcontractors. 5c. Construction oversight daily by OEI with PCI site visits at intervals corresponding to completion of work in work areas. This oversight will ensure log structures are constructed to meet required stability conditions. This includes checking log layouts, depth and extent of log burial where soil ballast is used or verifying boulder ballast meets required sizing. 5d.Construction phase engineering In the event that a structure cannot be built to plan specifications due to a change in site conditions re-evaluation of engineering stability calculations will be performed by PCI engineering staff and adjustments to plans will be made as necessary. 5e. As-Built Plan Development	Est. completion of as-builts: 2/15/29

		Once Construction is complete a set of as-built plans will be generated by OEI staff. Construction tasks will begin as soon as permits have been secured. Matching funds from Sonoma Water are expected to become available in early July 2026 after which permitting work will begin. No construction work (i.e. log installations) is planned until summer 2027. Pre-construction work as described above, including pre-construction surveys and permitting, will commence sooner, when matching funds from Sonoma Water become available. See budget and permitting sections of this application for further detail.	
Task 6. Post Construction Monitoring and Adaptive Management	10/15/2027	6a. Annual survey work performed in fall includes photo monitoring (pre-construction photos will be included) and Geomorphic surveys to observe and document changes in erosion and sedimentation. Site completion survey similar to Project site completion surveys described in CA Salmonid Stream Habitat Restoration Manual Part VIII. 6b. Post project long profile and cross section surveys in Mill Creek reach of selected sites (25% of all structure sites). Year 1 (Fall 2027) limited profile near completed work areas	Annual monitoring reports of survey observations and measurements will include profile and cross section comparisons as described above as well as adaptive management considerations described above. Report delivery dates are listed below. Due 6-15-2028 (Year 1 initial

		plus selected cross sections. Year 2 (Fall 2028) after completed installations, full profile of treated reaches plus selected cross sections. Year 3 (Fall 2029) Limited profile and cross sections at selected sites of interest. Year 4 Fall 2030 after two winter seasons full profile plus repeats of selected cross section. 6c. Annual reporting of observations and measurements including first winter observations reports, water quality monitoring reports if deemed necessary. Monitoring activities described for 6a, 6b and 6c are intended to support these adaptive management considerations and objectives: - Re-evaluation of representative examples of LWM stability calculations under changed conditions using Factor of Safety calculations by the project design team. - Assessment of potentially significant geomorphic changes at representative locations where erosion and/or sedimentation and/or changes in channel pattern might cause significant undesirable effects. - Assessment of changes in channel conditions with respect to coho salmon spawning and rearing habitat potentially including hydraulic model revisions to simulate winter rearing habitat conditions; include fishery monitoring data collected by Sonoma Water that typically includes spawner surveys, snorkel surveys and other data describing fish use of	installations and surveys) Due 6-15-2029 (Year 2 observations) Due 6-15-2030 (Year 3 observations) Due 4-15-2031 (Year 4 observations)

		habitat. - Recommendations for adaptive management measures to mitigate potential risks to infrastructure or private property and to improve performance of LWM structures. 6d. Identify and describe circumstances where indications of potential adverse conditions have been observed. 6e. Re-evaluate LWM stability calculations for representative sites where changes have occurred that could significantly affect LWM stability. 6f. Describe potential adaptive management measures and assess costs and permitting requirements.	

Additional Requirements:

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured, including cultural and biological surveys. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife (CDFW).

No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the streambed and flood plain areas at the end of each workday.

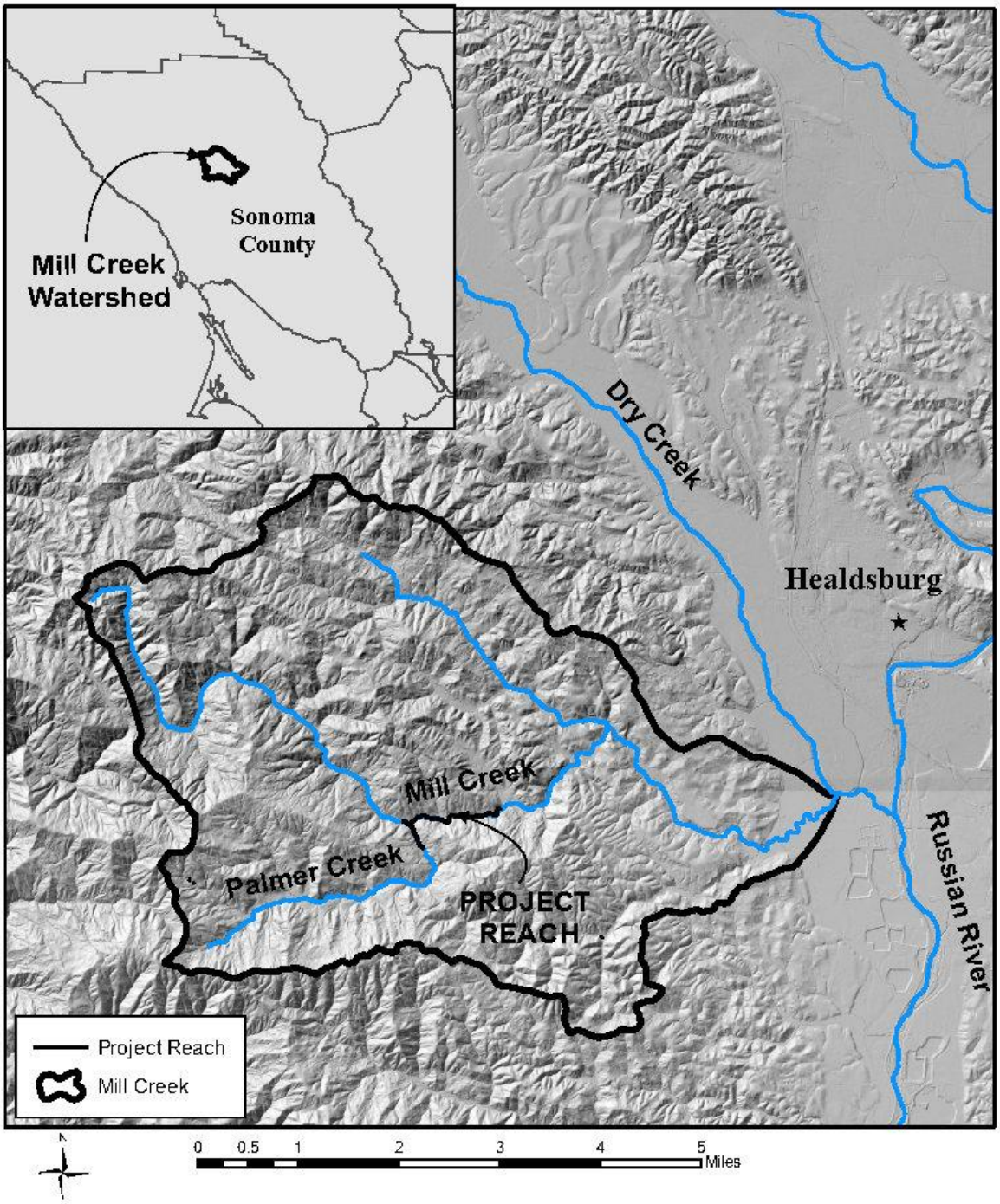
All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW Aquatic Invasive Species Decontamination Protocol.

During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual, 4th Edition (CA Restoration Manual)* or *other approved guidelines and manuals for salmon and steelhead habitat restoration*.

Final structure design and placement will be determined by field consultation between the Grantee and the CDFW Personnel.

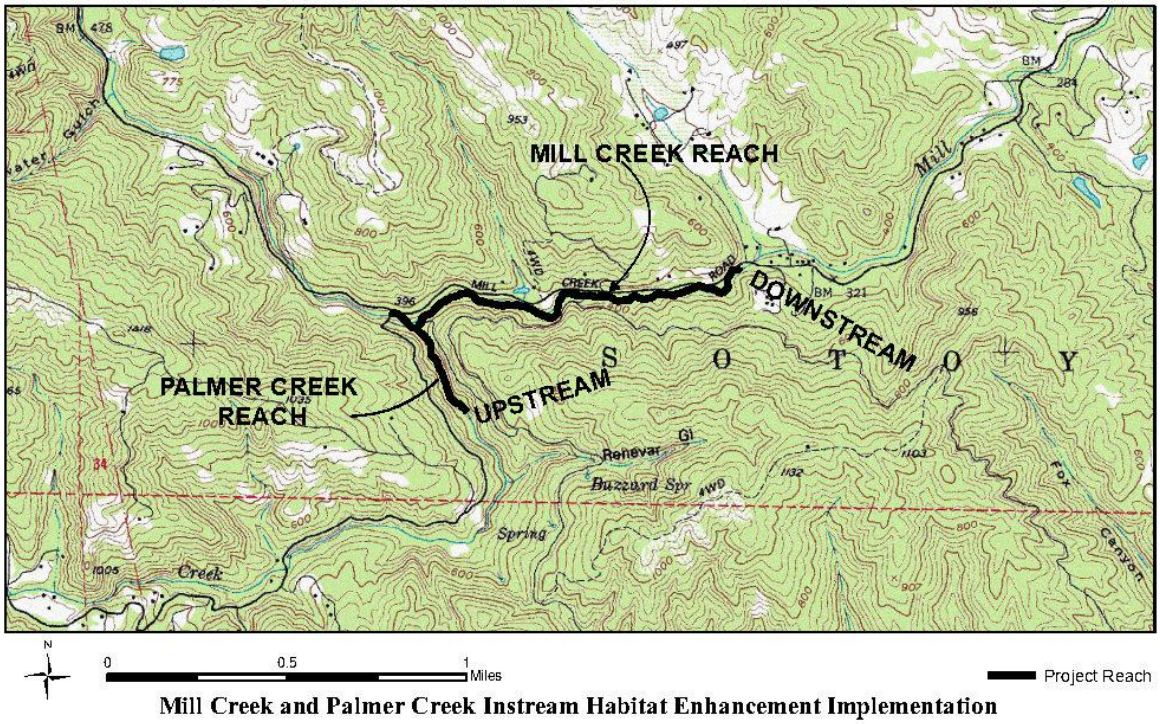
Mill Creek Watershed



Mill Creek and Palmer Creek Instream Habitat Enhancement Implementation

Coast Range Watershed Institute and O'Connor Environmental

Project Location Topographic Map



Mill Creek and Palmer Creek Instream Habitat Enhancement Implementation

Coast Range Watershed Institute and O'Connor Environmental

USGS 7.5 min Topographic Quadrangles included:
Guerneville

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ambystoma californiense pop. 3	California tiger salamander - Sonoma County DPS	AAAAA01183	Endangered	Threatened	WL
Dicamptodon ensatus	California giant salamander	AAAAH01020	None	None	SSC
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	AAABH01051	None	None	SSC
Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC
Taricha rivularis	red-bellied newt	AAAAF02020	None	None	SSC
Accipiter striatus	sharp-shinned hawk	ABNKC12020	None	None	WL
Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP | WL
Astur cooperii	Coopers hawk	ABNKC12040	None	None	WL
Buteo swainsoni	Swainsons hawk	ABNKC19070	None	Threatened	-
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP
Chaetura vauxi	Vauxs swift	ABNUA03020	None	None	SSC
Ardea alba	great egret	ABNGA04040	None	None	-
Ardea herodias	great blue heron	ABNGA04010	None	None	-
Egretta thula	snowy egret	ABNGA06030	None	None	-
Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-
Progne subis	purple martin	ABPAU01010	None	None	SSC
Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-
Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC
Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC
Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Pandion haliaetus	osprey	ABNKC01010	None	None	WL
Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC
Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC
Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	-
Nannopterum auritum	double-crested cormorant	ABNFD01020	None	None	WL
Melanerpes lewis	Lewis woodpecker	ABNYF04010	None	None	-
Asio otus	long-eared owl	ABNSB13010	None	None	SSC
Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-
Selasphorus rufus	rufous hummingbird	ABNUC51020	None	None	-
Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC
Syncaris pacifica	California freshwater shrimp	ICMAL27010	Endangered	Endangered	-
Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-
Archoplites interruptus	Sacramento perch	AFCQB07010	None	None	SSC
Hesperoleucus symmetricus symmetricus	central California roach	AFCJB19021	None	None	SSC
Hesperoleucus venustus navarroensis	northern coastal roach	AFCJB19031	None	None	SSC
Lavinia exilicauda exilicauda	Sacramento hitch	AFCJB19012	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Mylopharodon conocephalus	hardhead	AFCJB25010	None	None	SSC
Hysterocarpus traskii pomo	Russian River tule perch	AFCQK02011	None	None	SSC
Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-
Spirinchus thaleichthys	longfin smelt	AFCHB03010	None	Threatened	-
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Lampetra ayresii	western river lamprey	AFBAA02030	None	None	SSC
Lampetra richardsoni	western brook lamprey	AFBAA02180	None	None	SSC
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	-
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	SSC
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	SSC
Andrena blennospermatis	Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	-
Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-
Bombus crotchii	Crotchs bumble bee	IIHYM24480	None	Candidate Endangered	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Bombus pensylvanicus	American bumble bee	IIHYM24260	None	None	-
Dubiraphia giulianii	Giulianis dubiraphian riffle beetle	IICOL5A020	None	None	-
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	Proposed Threatened	None	-
Speyeria zerene behrensii	Behrens silverspot butterfly	IILEPJ6088	Endangered	None	-
Speyeria zerene myrtleae	Myrtles silverspot butterfly	IILEPJ608C	Endangered	None	-
Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC
Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-
Enhydra lutris nereis	southern sea otter	AMAJF09012	Threatened	None	FP
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Lasiurus frantzii	western red bat	AMACC05080	None	None	SSC
Myotis evotis	long-eared myotis	AMACC01070	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Myotis thysanodes	fringed myotis	AMACC01090	None	None	-
Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-
Anodonta californiensis	California floater	IMBIV04220	None	None	-
Gonidea angulata	western ridged mussel	IMBIV19010	None	None	-
Actinemys marmorata	northwestern pond turtle	ARAAD02031	Proposed Threatened	None	SSC
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	-
Coastal Brackish Marsh	Coastal Brackish Marsh	CTT52200CA	None	None	-
Coastal Terrace Prairie	Coastal Terrace Prairie	CTT41100CA	None	None	-
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-
Northern Vernal Pool	Northern Vernal Pool	CTT44100CA	None	None	-
Fissidens pauperculus	minute pocket moss	NBMUS2W0U0	None	None	-
Usnea longissima	Methuselahs beard lichen	NLLEC5P420	None	None	-
Chlorogalum pomeridianum var. minus	dwarf soaproot	PMLIL0G042	None	None	-
Lomatium repostum	Napa lomatium	PDAPI1B1M0	None	None	-
Perideridia gairdneri ssp. gairdneri	California Gairdners yampah	PDAPI1N062	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Asclepias solanoana	serpentine milkweed	PDASC021R0	None	None	-
Blennosperma bakeri	Sonoma sunshine	PDAST1A010	Endangered	Endangered	-
Centromadia parryi ssp. parryi	pappose tarplant	PDAST4R0P2	None	None	-
Erigeron biolettii	streamside daisy	PDAST3M5H0	None	None	-
Erigeron greenei	Greenes narrow-leaved daisy	PDAST3M5G0	None	None	-
Erigeron serpentinus	serpentine daisy	PDAST3M5M0	None	None	-
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	PDAST4R0W1	None	None	-
Hesperevax caulescens	hogwallow starfish	PDASTE5020	None	None	-
Hesperevax sparsiflora var. brevifolia	short-leaved evax	PDASTE5011	None	None	-
Lasthenia burkei	Burkes goldfields	PDAST5L010	Endangered	Endangered	-
Lasthenia californica ssp. bakeri	Bakers goldfields	PDAST5L0C4	None	None	-
Lasthenia californica ssp. macrantha	perennial goldfields	PDAST5L0C5	None	None	-
Lessingia arachnoidea	Crystal Springs lessingia	PDAST5S0C0	None	None	-
Lessingia hololeuca	woolly-headed lessingia	PDAST5S030	None	None	-
Microseris paludosa	marsh microseris	PDAST6E0D0	None	None	-
Cryptantha dissita	serpentine cryptantha	PDBOR0A0H2	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Erysimum concinnum	bluff wallflower	PDBRA160E3	None	None	-
Erysimum franciscanum	San Francisco wallflower	PDBRA160A0	None	None	-
Streptanthus barbiger	bearded jewelflower	PDBRA2G040	None	None	-
Streptanthus brachiatus ssp. hoffmanii	Freeds jewelflower	PDBRA2G071	None	None	-
Streptanthus glandulosus ssp. hoffmanii	Hoffmans bristly jewelflower	PDBRA2G0J4	None	None	-
Streptanthus morrisonii ssp. hirtiflorus	Dorrs Cabin jewelflower	PDBRA2G0S2	None	None	-
Streptanthus morrisonii ssp. morrisonii	Morrisons jewelflower	PDBRA2G0S3	None	None	-
Downingia pusilla	dwarf downingia	PDCAM060C0	None	None	-
Eastwoodiella californica	swamp harebell	PDCAM02060	None	None	-
Legenere limosa	legenere	PDCAM0C010	None	None	-
Viburnum ellipticum	oval-leaved viburnum	PDCPR07080	None	None	-
Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	PDCON04032	None	None	-
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	PDCON040D2	None	None	-
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	PDCUS01111	None	None	-
Carex comosa	bristly sedge	PMCYP032Y0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Eriophorum gracile	slender cottongrass	PMCYP0A080	None	None	-
Rhynchospora alba	white beaked-rush	PMCYP0N010	None	None	-
Rhynchospora californica	California beaked-rush	PMCYP0N060	None	None	-
Rhynchospora capitellata	brownish beaked-rush	PMCYP0N080	None	None	-
Rhynchospora globularis	round-headed beaked-rush	PMCYP0N0W0	None	None	-
Arctostaphylos bakeri ssp. bakeri	Bakers manzanita	PDERI04221	None	Rare	-
Arctostaphylos bakeri ssp. sublaevis	Cedars manzanita	PDERI04222	None	Rare	-
Arctostaphylos densiflora	Vine Hill manzanita	PDERI040C0	None	Endangered	-
Arctostaphylos hispidula	Howells manzanita	PDERI04230	None	None	-
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	PDERI041G4	None	None	-
Amorpha californica var. napensis	Napa false indigo	PDFAB08012	None	None	-
Astragalus breweri	Brewers milk-vetch	PDFAB0F1J0	None	None	-
Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-
Lupinus tidestromii	Tidestroms lupine	PDFAB2B3Y0	Endangered	Endangered	-
Trifolium amoenum	two-fork clover	PDFAB40040	Endangered	None	-
Trifolium buckwestiorum	Santa Cruz clover	PDFAB402W0	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-
Iris longipetala	coast iris	PMIRI092E0	None	None	-
Monardella viridis	green monardella	PDLAM180Q2	None	None	-
Calochortus raichei	Cedars fairy-lantern	PMLIL0D1L0	None	None	-
Calochortus uniflorus	pink star-tulip	PMLIL0D1F0	None	None	-
Erythronium helenae	St. Helena fawn lily	PMLIL0U060	None	None	-
Fritillaria liliacea	fragrant fritillary	PMLIL0V0C0	None	None	-
Lilium pardalinum ssp. pitkinense	Pitkin Marsh lily	PMLIL1A0H3	Endangered	Endangered	-
Limnanthes vinculans	Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	-
Hesperolinon congestum	Marin western flax	PDLIN01060	Threatened	Threatened	-
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	PDMAL11012	None	None	-
Sidalcea malviflora ssp. purpurea	purple-stemmed checkerbloom	PDMAL110FL	None	None	-
Clarkia imbricata	Vine Hill clarkia	PDONA050K0	Endangered	Endangered	-
Cypripedium californicum	California ladys-slipper	PMORC0Q040	None	None	-
Cypripedium montanum	mountain ladys-slipper	PMORC0Q080	None	None	-
Platanthera ephemerantha	white-flowered rein orchid	PMORC1X050	None	None	-
Platanthera leptopetala	narrow-petaled rein orchid	PMORC1X100	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-
Castilleja uliginosa	Pitkin Marsh paintbrush	PDSCR0D380	None	Endangered	-
Cordylanthus tenuis ssp. brunneus	serpentine birds-beak	PDSCR0J0S1	None	None	-
Cordylanthus tenuis ssp. capillaris	Pennells birds-beak	PDSCR0J0S2	Endangered	Rare	-
Kopsiopsis hookeri	small groundcone	PDORO01010	None	None	-
Erythranthe nudata	bare monkeyflower	PDSCR1B200	None	None	-
Agrostis blasdalei	Blasdales bent grass	PMPOA04060	None	None	-
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	PMPOA07012	Endangered	None	-
Calamagrostis bolanderi	Bolanders reed grass	PMPOA17010	None	None	-
Calamagrostis crassiglumis	Thurbers reed grass	PMPOA17070	None	None	-
Calamagrostis ophitidis	serpentine reed grass	PMPOA170V0	None	None	-
Elymus californicus	California bottle-brush grass	PMPOA2H0W0	None	None	-
Pleuropogon hooverianus	North Coast semaphore grass	PMPOA4Y070	None	Threatened	-
Collomia diversifolia	serpentine collomia	PDPLM02020	None	None	-
Gilia capitata ssp. chamissonis	blue coast gilia	PDPLM040B3	None	None	-
Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Gilia capitata ssp. tomentosa	woolly-headed gilia	PDPLM040B9	None	None	-
Leptosiphon aureus	bristly leptosiphon	PDPLM09010	None	None	-
Leptosiphon jepsonii	Jepsons leptosiphon	PDPLM09140	None	None	-
Navarretia leucocephala ssp. bakeri	Bakers navarretia	PDPLM0C0E1	None	None	-
Navarretia leucocephala ssp. plieantha	many-flowered navarretia	PDPLM0C0E5	Endangered	Endangered	-
Chorizanthe valida	Sonoma spineflower	PDPGN040V0	Endangered	Endangered	-
Eriogonum cedrorum	Cedars buckwheat	PDPGN087A0	None	None	-
Eriogonum ternatum	ternate buckwheat	PDPGN085R0	None	None	-
Delphinium bakeri	Bakers larkspur	PDRAN0B050	Endangered	Endangered	-
Delphinium luteum	golden larkspur	PDRAN0B0Z0	Endangered	Rare	-
Ranunculus lobbii	Lobbs aquatic buttercup	PDRAN0L1J0	None	None	-
Ceanothus confusus	Rincon Ridge ceanothus	PDRHA04220	None	None	-
Ceanothus foliosus var. vineatus	Vine Hill ceanothus	PDRHA040D6	None	None	-
Ceanothus gloriosus var. exaltatus	glory brush	PDRHA040F4	None	None	-
Ceanothus purpureus	holly-leaved ceanothus	PDRHA04160	None	None	-

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Holodiscus discolor var. cedrorum	Cedars oceanspray	PDROS0V041	None	None	-
Horkelia tenuiloba	thin-lobed horkelia	PDROS0W0E0	None	None	-
Brodiaea leptandra	narrow-anthered brodiaea	PMLIL0C022	None	None	-

Little Sur River Fish Passage Dam Removal Alternative Design Project - Pico Blanco Dam *(Project ID: 1736463) 2026*

Introduction:

The Little Sur River Fish Passage Dam Removal Alternative Design Project – Pico Blanco Dam (Project) will conduct a planning effort which identifies and selects a preferred alternative and then develops the 100% design package to remove the Pico Blanco Dam, a temporal barrier with a non-functioning fishway, which spans the Little Sur River. The Project will improve conditions for federally threatened south-central California coast steelhead.

The Project includes: biological, cultural, and paleontological surveys; permit application preparation (for geotechnical investigation(s)); geotechnical investigation(s); and engineered design planning up to 100% design level. The Project will be designed in a manner which follows techniques in the *California Salmonid Stream Habitat Restoration Manual* protocol XII. Fish Passage Design and Implementation.

Trout Unlimited, Inc. (Grantee) shall not proceed with on-the-ground implementation of the geotechnical investigation until all necessary permits, consultations, and/or Notices to Proceed are secured.

Does the project involve the construction of beaver dam analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The Project site is located in the Santa Lucia mountain range on the Little Sur River, approximately 12 miles upstream from confluence with Pacific Ocean.

Access to the Project site from Highway 1 south of Carmel is Palo Colorado Rd to the end at Bottchers Gap, through locked gate six miles down a dirt road to Camp Pico Blanco.

The Project is centered at approximately: 36.33278, -121.79722

Project Description:

The Pico Blanco Dam impedes passage for all life stages of steelhead in the Little Sur River. Removing or modifying instream fish passage impediments, including dams and diversions, to allow steelhead natural rates of migration to upstream spawning and rearing habitats, and passage of smolts and kelts downstream to the estuary and ocean is noted as a Critical Recovery Action for the Little Sur River in the NOAA South-Central Coast Steelhead Recovery Plan (Task LS SCCCS-3.2).

The 13-foot-high dam spans the river and is supported on the downstream end by a concrete apron, approximately 17-feet long with concrete walls that focus flow through the 10-foot dam opening, along a concrete slab.

In 2005, a bi-directional fish ladder was constructed adjacent to the existing flashboard dam facility and consisted of a series of step pools designed to allow all size classes of juvenile steelhead to move freely in the upstream and downstream direction. That fish ladder was constructed and managed for a period of time, but is no longer feasible to maintain.

Modification or removal of this barrier and fish ladder will reduce energy expenditure and delays for migrating adult steelhead, improve post-spawning survival of adults, facilitate access to areas of high-quality spawning

habitat and perennially watered rearing areas in the upper watershed and provide full migration opportunities for juvenile volitional upstream and downstream migration.

This Project is the design phase. Deliverables will include: permitting (for geotechnical investigation(s); CEQA surveys; full assessment of current conditions; alternative analysis; and up to 100% civil, structural and geotechnical engineering plans.

Materials:

The Project will not utilize materials.

Tasks, Deliverables, and Timelines:

Below tasks, deliverables, and timelines have been proposed by the Grantee. CDFW may make modifications or additions to the table below.

Task Name	Start Date	Activity Description	Deliverables
Task 1 Project Management and Administration	6/1/2027	Grantee will provide technical and administrative services associated with implementation of the Project, including managing the grant, assuring all permits are finalized, securing Project site access, administrating subcontracts, invoicing and payment, drafting and finalizing progress and final reports and managing data.	a) Quarterly invoices and progress reports due 10 days following calendar quarter b) Copies of subcontracts due 8/1/27 c) Final landowner access agreements due 7/11/27 d) Draft final Progress Report due 7/15/29

			e) Final Progress Report and Final Invoice due 8/15/29
Task 2 Site Investigation	8/3/2027	An investigation of existing conditions and potential alternative treatments will be conducted by subcontractor Waterways Consulting Inc. (Waterways), and subsequently Waterways with landowner, CDFW, and Grantee will meet to review field conditions and discuss potential alternative treatments.	Report of findings due 11/31/27
Task 3 Environmental Compliance and Permitting	8/3/2027	During design tasks, Grantee, Waterways, and sub-contractors Resource Conservation District of Monterey County (RCD) and Alnus Ecological will investigate local, state and federal permitting needs that may apply to the geotechnical investigation(s). A Fish and Game Code section 1602 Lake and Streambed Alteration notification will be submitted, if required for the geotechnical investigation(s). RCD will sub-contract with the Esselen Tribe of Monterey County to consult regarding cultural resources and cultural monitoring during the geotechnical investigation. TU will sub-contract with Alnus Ecological for assistance with permits and any other biological resource-related needs. RCD will coordinate with the County of Monterey concerning permits, and to estimate cost and time for local planning and building permits associated with future construction. RCD and Alnus will develop a report on permits pathways for permits for future construction. RCD will sub-contract with a qualified consultant to conduct CEQA-compliant cultural resource investigations and create an associated report. RCD and Alnus will conduct biological surveys and create an associated report.	a) Copies of CEQA Exemption and 1602 notification for geotechnical investigations (if needed) due 9/1/2027. b) Cultural, archeological, paleontological resource investigation report due 7/1/2028. d) Biological Resource Report due 12/1/2027. e) Investigation of permit conditions and permits pathways for future implementation (considering FRGP funding or no FRGP funding for Implementation) due 12/1/4/1/2029.

Task 4 Topographic Mapping	9/1/2027	Waterways will survey the project site and prepare a detailed topographic map, profile & cross section survey of the anticipated project area and adjacent areas of potential impact.	Topographic basemap due 12/1/27
Task 5 Hydrology and Hydraulic Modeling	10/1/2027	Waterways will perform a hydrologic analysis to determine the peak flow rates at the Project site for several return intervals of interest (e.g., 2-, 10-, and 100-year). The work will consist of a flood-frequency analysis based upon adjacent gauged watersheds or regional regression equation calculations. Waterways will prepare a hydraulic model of the channel and floodplain through the Project extents, under existing and proposed conditions, using HEC-RAS modeling software. Fish passage flows will be analyzed, and calculations will be provided to demonstrate passage conditions under proposed conditions, using methodologies and design criteria approved by CDFW.	Results of the modeling will be included in the various submittals of the basis of design reports outlined below.
Task 6 Concept Level Plans & Alternatives Analysis	9/1/2027	Waterways will lead the development of concept-level designs and cost estimates for two alternatives. Under either dam removal alternative, we assume all concrete would be removed. Alternatives will likely consider different levels of sediment excavation and different modes of demolition (e.g., explosives vs. impact hammer). A Technical Memorandum will be prepared to support the concept design submittal and alternatives ranking. The Memorandum will provide descriptions of the proposed improvements, methodology, and findings. Results of the hydraulic analysis will be presented in tabular form, with model details presented as an appendix.	a) Concept level plans due 12/31/27 b) Engineer's cost estimate due 12/31/27 c) Technical Memorandum with due 12/31/27

		The alternatives will be evaluated and ranked by the landowners, Grantee, Waterways and CDFW. The selected preferred alternative will serve as the basis for further design development.	
Task 7 Geotechnical Investigation	9/1/2027	CMAG Engineering will conduct a geotechnical investigation as a subcontractor to Waterways, and prepare an associated report of their findings.	Geotechnical investigation report due 6/1/28
Task 8 35% Level Plans and Cost Estimate	2/1/2028	Waterways will advance the preferred alternative to a 35% level of engineered design, and will create a more detailed cost estimate for the preferred alternative. Design details will be compiled in a technical memorandum.	a) 35% Design Plan due 6/1/2028 b) Cost estimate due 6/1/2028 c) Technical memorandum due 6/1/2028
Task 9 65% Designs	7/1/2028	Waterways will advance the 35% level of engineered design to 65% level engineered design, in a manner which is considerate of comments from CDFW, landowner, and others. Waterways will also create a 65% cost estimate, and a basis of design report.	a) 65% Design Plan due 12/1/2028 b) 65% Cost estimate due 12/1/2028 c) 65% Basis of design report due 12/1/2028
Task 10 90% Designs, Specifications and Cost Estimate	1/1/2029	Waterways will review comments received from TU, landowners, CDFW, and permitting agencies on the 65% Drawings and will incorporate revisions into the 90% plans, cost estimate, and basis of design, where appropriate. The 90% Plans will be at a suitable level to competitively bid and construct the Project.	a) 90% Design drawings due 4/1/2029 b) 90% Cost Estimate due 4/1/2029 c) 90% Basis of Design due 4/1/2029
Task 6.7 100% Designs	5/2/2029	Waterways will review comments received from CDFW, the Grantee, the permitting agencies, and landowners on the 90% submittal and will incorporate this input into the 100% submittal. The 100% submittal will be suitable for competitive bidding and construction of the project.	a) 100% Design Plan due 7/1/2029 b) 100% Cost estimate due 7/1/2029 c) 100% Basis of design report due 7/1/20289

Additional Requirements:

Geotechnical investigation start and end dates are at the discretion of CDFW.

No equipment maintenance will be performed within or near the stream where pollutants (such as petroleum products) from the equipment may enter the stream via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the stream (including floodplain areas) at the end of each workday. All trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly.

Little Sur River Fish Passage Dam Removal Alternative
Design Project – Pico Blanco Dam
Proposal Number: 1736463 Proposal Type: Plan/Design

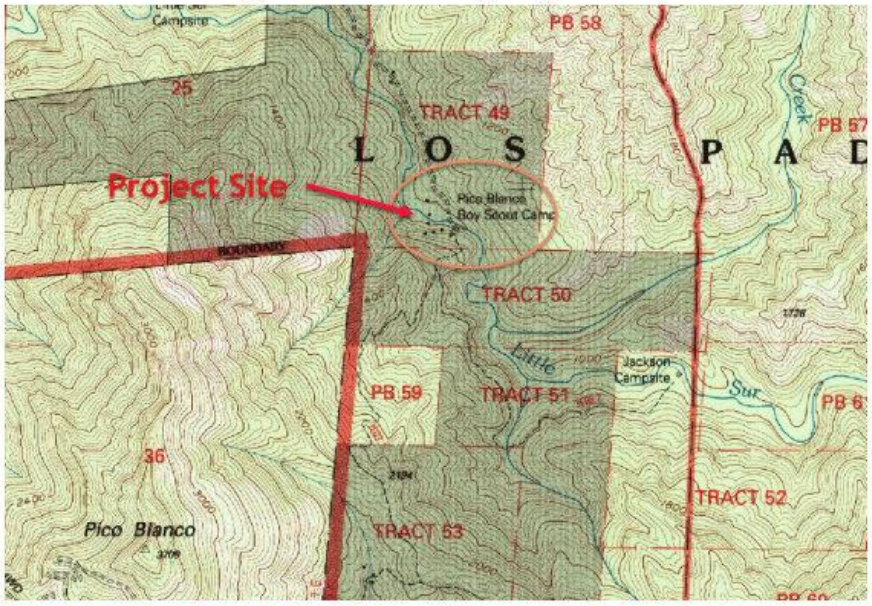
Supplemental Information
Location and Watershed Map



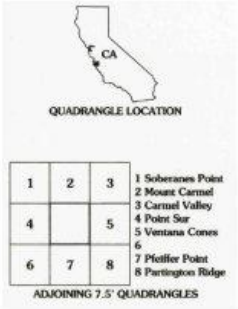
Camp Pico Blanco is located in unincorporated southwest Monterey County, on the North Fork of the Little Sur River (a tributary to the Pacific Ocean), approximately 12 miles inland from State Route 1 on the Big Sur Coast of California. Currently, access is restricted due to County and private road closures.

Little Sur River Fish Passage Dam Removal Alternative
Design Project – Pico Blanco Dam
Proposal Number: 1736463 Proposal Type: Plan/Design

Supplemental Information
Project Location/Topo Map



Project shown on USGS 7.5 minute Big Sur, Ca 1995 quad.
Non-Federal In-holdings within Los Padres National Forest shown as shaded



Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Rana boylii pop. 6	foothill yellow-legged frog - south coast DPS	AAABH01056	Endangered	Endangered	-
Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC
Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC
Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP | WL
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Gymnogyps californianus	California condor	ABNKA03010	Endangered	Endangered	FP
Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Oncorhynchus mykiss irideus pop. 9	steelhead - south-central California coast DPS	AFCHA0209H	Threatened	None	SSC
Bombus crotchii	Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	-
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	Proposed Threatened	None	-
Neotoma macrotis luciana	Monterey dusky-footed woodrat	AMAFF08083	None	None	-
Taxidea taxus	American badger	AMAJF04010	None	None	SSC
Sorex ornatus salarius	Monterey shrew	AMABA01105	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Anniella pulchra	northern legless lizard	ARACC01020	None	None	SSC
Actinemys pallida	southwestern pond turtle	ARAAD02032	Proposed Threatened	None	SSC
Thamnophis hammondii	two-striped gartersnake	ARADB36160	None	None	SSC
Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC
North Central Coast Fall-Run Steelhead Stream	North Central Coast Fall-Run Steelhead Stream	CARA2631CA	None	None	-
Dacryophyllum falcifolium	tear drop moss	NBMUS8Z010	None	None	-
Malacothamnus lucianus	Arroyo Seco bushmallow	PDMAL0Q0B2	None	None	-
Abies bracteata	bristlecone fir	PGPIN01030	None	None	-
Pinus radiata	Monterey pine	PGPIN040V0	None	None	-
Ceanothus rigidus	Monterey ceanothus	PDRHA04067	None	None	-

San José Creek Weir Removal Plan *(Project ID: 1736481) 2026*

Introduction:

The San José Creek Weir Removal Plan (Project) includes the planning of an Implementation-ready project to remove a concrete weir in San José Creek, which is a total barrier for all life stages of south-central California coast steelhead. The Project includes: assessments of biological and cultural resources onsite; permit acquisition; geotechnical investigation(s); engineered design planning up to the 100% level; and CEQA assessments and platform preparation (for future implementation). Once the barrier is removed, steelhead will experienced improved access to migration, spawning, and rearing habitat in the upper four miles of San Jose Creek and improved passage of smolts to the estuary and ocean.

The Grantee shall not proceed with on-the-ground implementation of the geotechnical investigation until all necessary permits, consultations, and/or Notices to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* protocol XII. Fish Passage Design and Implementation.

Does the project involve the construction of beaver analogs?

Yes ☐ or No ☒

Is the project located in a tidally influenced California coastal zone?

Yes ☐ or No ☒

Project Description:

Location:

The Project site lies on the mainstem of San Jose Creek, just downstream from Van Winkley's Canyon, approximately 18.5 miles upstream from the estuary of Monastery/San Jose Beach. The subject barrier is an abandoned USGS stream gage cement weir, 34 feet long with a 7.5-foot wide and four-foot deep V notch.

The Project is centered at approximately: 36.48742, -121.86298

Project Description:

According to CDFW's 2024 Region 4 Barrier Assessment, the existing abandoned USGS stream gage, a concrete weir, creates a vertical jump barrier ranging from approximately 2.3 to 4.3 feet under evaluated passage flows and is classified as a total barrier to both adult and juvenile salmonids. The assessment identified the structure as a priority fish passage impediment and specifically recommended complete removal of the weir. The structure currently impounds sediment upstream, creating an approximately 147-foot-long sediment wedge containing an estimated 270 cubic yards of accumulated material.

Removal of the weir will reconnect upstream habitat, restore natural sediment transport, improve channel continuity, eliminate hydraulic discontinuities, and enhance access to spawning and rearing habitat throughout the San Jose Creek watershed.

Materials:

The Project will not utilize materials.

Tasks, Deliverables, and Timelines:

Below tasks, deliverables, and timelines have been proposed by the Grantee – organized chronologically by start date. CDFW may make modifications or additions to the table below.

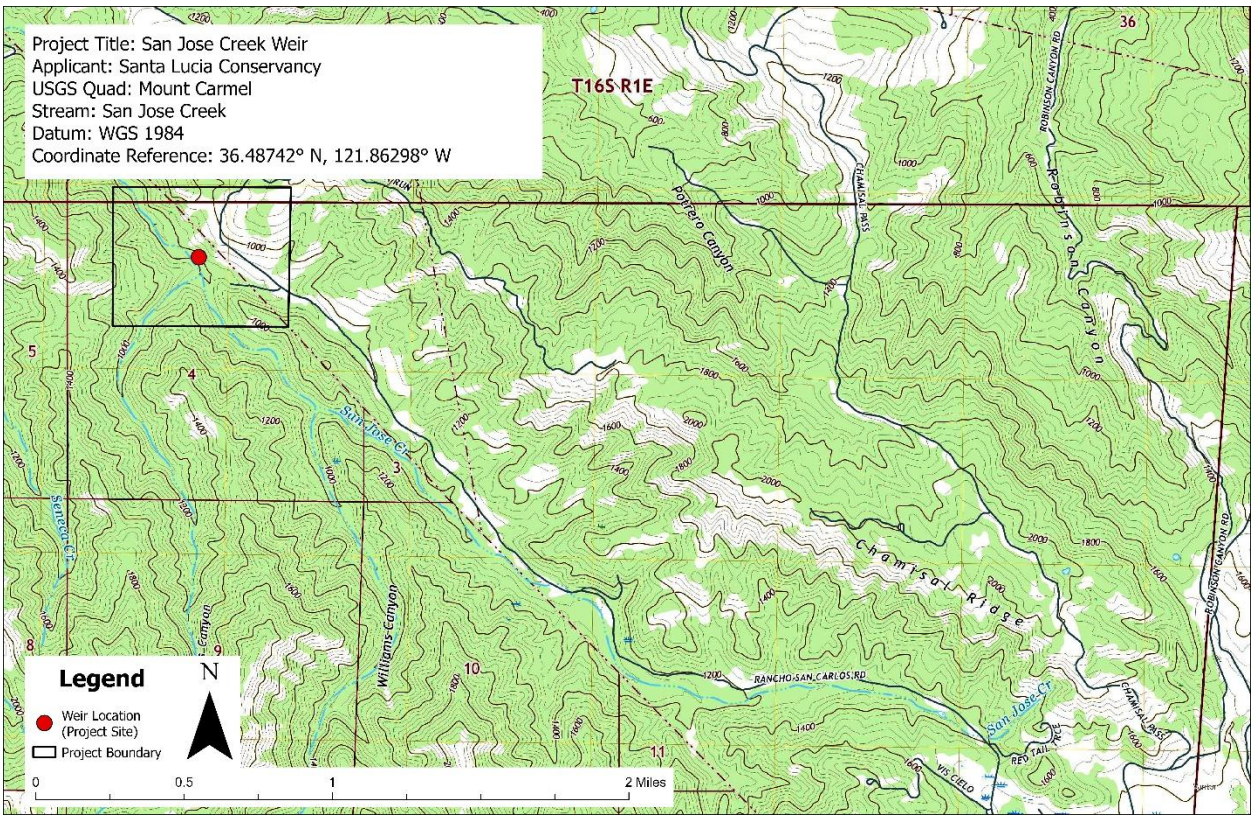
Task Name	Start Date	Activity Description	Deliverables
Project Management and Grant Administration	3/1/2027	Grantee will provide overall project management, consultant oversight, budget tracking, invoicing, grant administration, agency coordination, and reporting. Grantee will prepare and submit all required FRGP progress reports and reimbursement requests.	Quarterly progress reports Quarterly invoices Final project report Final invoice
Existing Conditions Assessment and Topographic Survey	3/1/2027	Whitson Engineers will collect and review existing site information, conduct field reconnaissance, and prepare a detailed topographic survey of the Project area. Survey data will be used to develop a project base map and support hydraulic analyses, engineering design, environmental review, and permit preparation. The consultant will identify existing access routes, potential construction staging areas, utility constraints, environmentally sensitive areas, and other site conditions that may influence Project design and implementation.	Topographic survey Existing conditions map Access and staging area map CAD base mapping files
Biological Surveys and Technical Reports	5/1/2027	Denise Duffy & Associates (DD&A) will conduct biological field surveys, wetland delineation, focused botanical surveys, and special-status species evaluations. Information collected will be used to prepare technical reports supporting CEQA compliance and state and federal permit applications.	Biological Resources Report Wetland Delineation Report
Geotechnical Investigation	5/1/2027	Whitson Engineers will conduct a geotechnical evaluation of site conditions to inform design.	Geotechnical memorandum
Hydraulic and Hydrologic Analysis	5/1/2027	Whitson Engineers will conduct hydrologic and hydraulic analyses of San Jose Creek to evaluate existing conditions, streamflow characteristics, channel geometry, sediment transport considerations, and anticipated effects of weir removal. Analyses will support engineering design and permit applications.	Hydraulic and hydrologic technical memorandum
Cultural Resources Investigation	6/1/2027	A qualified cultural resources consultant will conduct records searches, field surveys, and preparation of a Cultural Resources Inventory to identify and evaluate	Cultural Resources Report

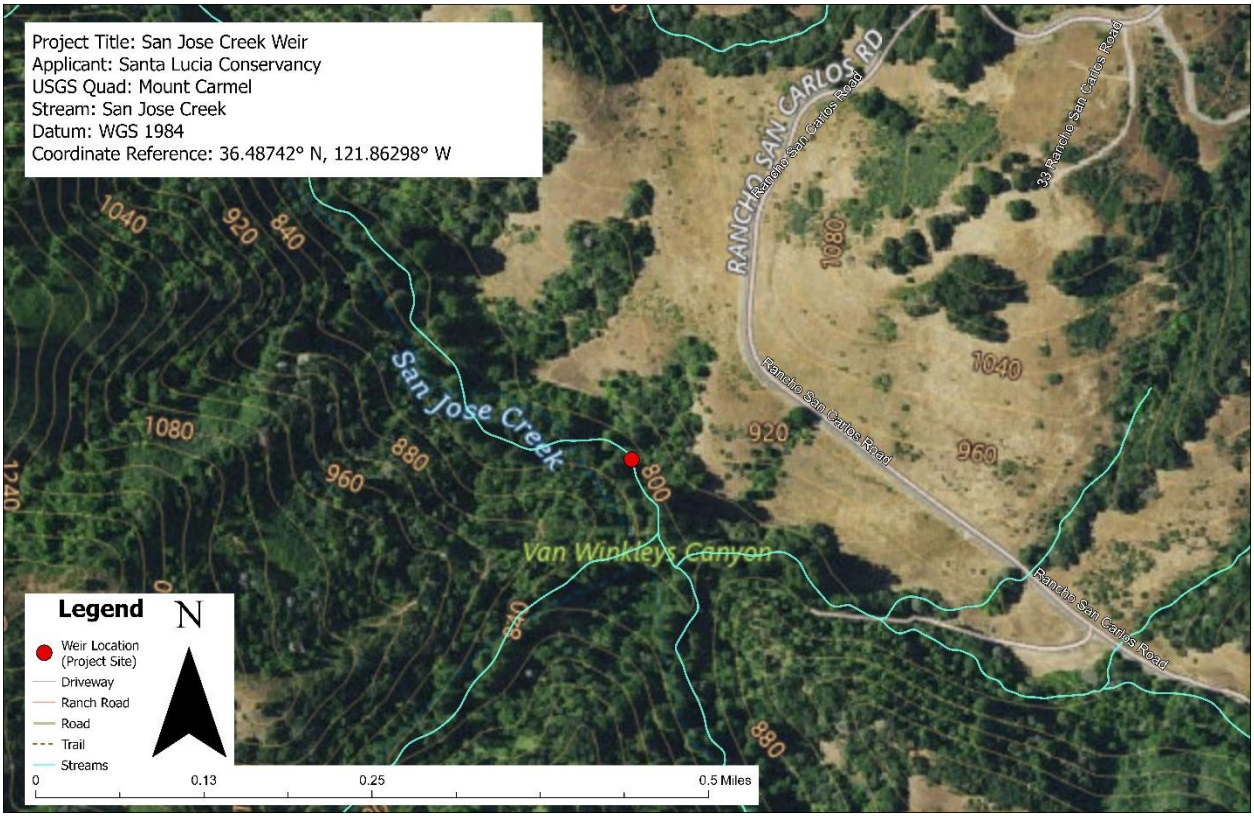
		archaeological and historical resources within the Project area.	
Preliminary Engineering Design (30%)	7/1/2027	Whitson Engineers will prepare preliminary engineering designs for removal of the concrete weir and restoration of the channel. The design package will establish project limits, identify restoration measures, evaluate construction approaches, and develop a preliminary construction cost estimate. Preliminary plans will include conceptual access routes, equipment staging areas, temporary stream diversion and dewatering concepts, erosion and sediment control measures, and site restoration requirements necessary to support environmental review and permit applications.	30% design package Conceptual access and staging plan Preliminary dewatering concept Preliminary construction cost estimate
Intermediate Engineering Design (65% and 90%)	12/1/2027	Willett Engineers will advance project designs to 65% and 90%. Design packages will incorporate findings from biological, cultural, hydraulic, and geotechnical investigations and will be refined through agency and stakeholder review.	65% design package 90% design package Draft dewatering plan Draft access and staging plans Agency review comments and responses
CEQA Compliance and Permit Acquisition	12/1/2027	DD&A will prepare CEQA documentation and permit applications required for (future) project implementation. Activities include agency coordination, permit application preparation, responses to agency requests, and support for consultation processes with CDFW, RWQCB, USACE, NMFS, and USFWS.	CEQA documentation Permit applications Agency consultation records Biological Mitigation Plan Permit approvals and authorizations
Final Engineering Design and PS&E Package	7/1/2028	Whitson Engineers will prepare final plans, specifications, engineer's estimate, and bid-ready construction documents. Final designs will incorporate permit conditions and agency requirements, resulting in a fully permitted, shovel-ready project.	Final Plans, Specifications and Estimate (PS&E) Final Dewatering Plan

Additional Requirements:

Geotechnical investigation start and end dates are at the discretion of CDFW.

No equipment maintenance will be performed within or near the stream where pollutants (such as petroleum products) from the equipment may enter the stream via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. All equipment will be removed from the stream (including floodplain areas) at the end of each workday. All trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly.


Project Title: San Jose Creek Weir
Applicant: Santa Lucia Conservancy
USGS Quad: Mount Carmel
Stream: San Jose Creek
Datum: WGS 1984
Coordinate Reference: 36.48742° N, 121.86298° W
T16S R1E
Portrero Canyon
Robinson Canyon
Chamisal Ridge
San Jose Cr.
Seneca Cr.
Williams Canyon
RANCHO SAN CARLOS RD
ROBINSON CANYON RD
CHAMISAL PASS
RED TAIL RET
VIS CIELO
Legend
Weir Location (Project Site)
Project Boundary
N
0
0.5
1
2 Miles


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Coordinate Reference: 36.48742° N, 121.86298° W
RANCHO SAN CARLOS RD
Rancho San Carlos Road
33 Rancho San Carlos Road
San Jose Creek
Van Winkleys Canyon
Rancho San Carlos Road
Rancho San Carlos Road
1040
920
840
1080
960
880
800
1240
Legend
N
Weir Location (Project Site)
Driveway
Ranch Road
Road
Trail
Streams
0
0.13
0.25
0.5 Miles

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Ambystoma californiense pop. 1	California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	WL
Batrachoseps luciae	Santa Lucia slender salamander	AAAAD02160	None	None	-
Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC
Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC
Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP | WL
Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP
Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC
Oncorhynchus mykiss irideus pop. 9	steelhead - south-central California coast DPS	AFCHA0209H	Threatened	None	SSC
Bombus crotchii	Crotchs bumble bee	IIHYM24480	None	Candidate Endangered	-
Bombus occidentalis	western bumble bee	IIHYM24252	None	Candidate Endangered	-
Euphilotes enoptes smithi	Smiths blue butterfly	IILEPG2026	Endangered	None	-
Neotoma macrotis luciana	Monterey dusky-footed woodrat	AMAFF08083	None	None	-
Sorex ornatus salarius	Monterey shrew	AMABA01105	None	None	SSC
Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC
Corynorhinus townsendii	Townsends big-eared bat	AMACC08010	None	None	SSC

Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status
Lasiurus cinereus	hoary bat	AMACC05032	None	None	-
Actinemys pallida	southwestern pond turtle	ARAAD02032	Proposed Threatened	None	SSC
North Central Coast Fall-Run Steelhead Stream	North Central Coast Fall-Run Steelhead Stream	CARA2631CA	None	None	-
Monterey Cypress Forest	Monterey Cypress Forest	CTT83150CA	None	None	-
Monterey Pine Forest	Monterey Pine Forest	CTT83130CA	None	None	-
Hesperocyparis macrocarpa	Monterey cypress	PGCUP04060	None	None	-
Arctostaphylos hookeri ssp. hookeri	Hookers manzanita	PDERI040J1	None	None	-
Pinus radiata	Monterey pine	PGPIN040V0	None	None	-