

## **Introduction:**

San Mateo County Resource Conservation District (RCD) is the Grantee for the proposed Alpine Creek Fish Passage Project (FP 127). The project is an instream fish passage project that will provide access for salmonids to an additional >1 mile of perennial habitat above a road crossing with a failing fish ladder on Alpine Creek in coastal San Mateo County. The existing road-crossing culvert is to be modified, and existing Denil fish ladder with failed boulder weirs are to be removed. Passage will be achieved by reconstructing 300 feet of downstream channel with a roughened 4% rock ramp grade. The project is necessary to increase spawner distribution and overall production in the watershed by supplying additional habitat usage previously unavailable in upper Alpine Creek. NMFS Final recovery Plan for CCC coho salmon ESU (2012) identifies Adult Passage Flows in the San Gregorio Creek Watershed as "Poor". Access to the upper watershed is limited for migrating salmonids due to the flashy hydrology; therefore reducing passage constraints increases the likelihood of adult fish seeding upper tributaries in turn increasing recruitment. The project will follow established techniques outline in the California Salmonid Stream Habitat Restoration Manual (Part VII Project Implementation and Part XII Fish Passage Design and Implementation). The Grantee shall not proceed with on the ground implementation until all necessary permits, consultation, and/or Notice to Proceed are secured.

## **Objective:**

The main goal of the project is to restore fish passage at an established sever impediment. Passage will be achieved as designed by lowering the channel invert through the existing arch culvert, demolishing the existing non-functional Denil fish ladder and grouted rock weirs just downstream, and reconstructing approximately 300 linear feet of channel at an approximate 4% grade downstream of the culvert to enable unfettered access to upstream habitat. Successful project completion will allow access for both adult and juvenile salmonid passage to more than one mile of quality upstream spawning and rearing habitat over the full range of fish passage design flows.

## **Project Description:**

**Location:** The project site is entirely within coastal San Mateo County near the unincorporated community of La Honda. The project site is located where Pescadero Creek Road crosses Alpine Creek and includes the existing road culvert, culvert apron, fish ladder, and rock weirs. The site is located adjacent to the intersection of Pescadero Creek Road and Alpine Road, approximately 1.7 miles southeast of the community of La Honda in San Mateo County. The left bank of the project site is located within the boundary of San McDonald County Park, which is publicly owned and managed by San Mateo County. The right bank is lined by private residences. The project site is approximately 7.75 miles upstream of the mouth of San Gregorio Creek and approximately 1.00 mile upstream of La Honda Creek the nearest confluence. The approximate upstream end of the project is 37.29945000, -122.26530000; and the approximate downstream end of

the project is 37.30040000, -122.26620000 (Decimal Degrees, Geographic, NAD83).

**Project Set Up:** Task 1 will be performed by the RCD and Jim Robins of Alnus Ecological. RCD personnel involved will be the Executive Director, Finance Director, Natural Resource Specialist, Conservation Assistant and Program Assistant. Jim Robins of Alnus Ecological will provide support to the Natural Resource Specialist. Task 2 will be performed by the Natural Resource Specialist with assistance from the Conservation Assistant, the Executive Director and subcontractors. Task 3 will be accomplished by subcontractors Jim Robins and Mike Podlech of Alnus Ecological with support from RCD Natural Resource Specialist. Task 4 will be accomplished by yet to be determined licensed constructing contractor with assistance from the RCD, Alnus Ecological, San Mateo County and Waterways Consulting Inc.

**Materials:**

- Concrete to construct the rectangular channel between the existing footings including 9 concrete baffles and a concrete cutoff wall at the downstream end of the culvert
- Rebar
- Engineered Streambed Material (ESM)
- Weir Boulders
- Rock Slope Protection
- Plastic Piping
- Sandbags and/or gravel bags
- Plastic sheeting
- Pumps, filters, hoses
- Erosion Control Materials: Materials include but are not limited to silt fencing, weed/seed free straw waddles, erosion control mesh netting (e.g. coconut fiber), and weed free straw mulch.
- Construction Supplies: Including but not limited to framing boards, nails, bolts, batteries.
- Native Grass Seed
- Willow/Alder Stakes
- Exclusionary Fencing
- Dip nets

**Tasks:**

*Task 1: Project Management*

The RCD will take the lead in overall project management, including fiscal management. The RCD will develop and manage all contracts and subcontracts. In addition, the RCD will provide project support in terms of finalizing the work plan; leading interagency communications and coordination; convening project team meetings among consultants, partners, and stakeholders; interim and/or progress reporting to funders and regulatory agencies, budgeting and invoicing.

## *Task 2: Permitting, Bidding, and Contractor Selection*

Work with the FRGP Grant Manager to develop and finalize a Lake and Streambed Alteration Agreement (LSAA), and prepare any other necessary local permits or environmental compliance documents. This project is expected to be covered under FRGP's California Environmental Quality Act (CEQA) document and the Regional General Permit (RGP). The engineer staff with Waterways Consulting, Inc. will advise and assist in developing and reviewing the LSAA and other necessary permits to ensure consistency with project designs. The RGP provides compliance for Section 404 of the Clean Water Act, 401 certification from the Regional Water Quality Control Board, and all necessary compliance for the Federal Endangered Species Act (ESA). In addition to the necessary agency permits the RCD will obtain an encroachment permit or Memorandum of Understanding from San Mateo County to enable the RCD to construct the project on San Mateo County property. San Mateo County has committed to working with the RCD to facilitate this process. The RCD will obtain a Grading Permit Exemption from the San Mateo County Planning and Building Department. The RCD, with assistance from Jim Robins (Alnus Ecological) and Waterways, will coordinate with San Mateo County, the downstream landowners (David and Kathleen Bevin), and CDFW to develop a bid package and award a construction contract to the most competitive bidder for the project. The RCD will work with the selected contractor, San Mateo County, and CDFW to develop a construction schedule, review access and temporary closure needs, and review permit conditions.

## *Task 3: Biological Monitoring and Physical Surveys*

Work under this task includes monitoring for listed species, supporting the construction team on dewatering activities, performing fish relocation, conducting contractor training related to species protection, and general project oversight. Prior to the start of construction, the area will be monitored for the presence of listed species including California red-legged frog (CRLF), dusty footed woodrat, and western pond turtle. Any active woodrat nests will be clearly flagged with a construction buffer as per discussions with CDFW staff. Exclusion fencing will be placed around staging areas and stockpiles to avoid impacts to CRLF and terrestrial species. Sweeps of the staging area and equipment will be conducted prior to moving equipment or supplies in or out of the staging area. All fish will be relocated as per CDFW and NOAA standard protocols from the instream work zone prior to dewatering. Biologists Jim Robins and Mike Podlech will identify locations for cofferdams and work with contractors to locate the best areas for block nets as well as address any other dewatering related issues or concerns that may arise. Block nets will be installed using t-posts to ensure fish cannot access the site during construction using mesh smaller than 3/8" to prevent fish from entering the work area once relocation efforts are complete. Fish monitoring will also be conducted during dewatering to relocate any stranded fish that were not removed during pre-dewatering relocation efforts. Monitoring will continue during construction until project completion and the removal of cofferdams and block nets. This project will assume presence of marbled Murrelet (MAMU) as well as CLRF

and monitors will be on-site during construction to avoid impacts to this species. The RCD will be conduct MAMU surveys to determine presence or absence during 2016 and 2017. This would allow for an earlier project start date rather than September 16th if MAMU are present. Pre-construction survey protocols will be developed with the FRGP grant manager. The contractor staff will be trained in listed species concerns and protocols to help avoid any impacts of equipment or construction related activities. Post Construction Monitoring to be performed by Waterways and the RCD will take place in the spring/summer following construction and include the following: 1) Survey the long profile of the stream with a total station, beginning 200 feet upstream of the project and extending 300 feet downstream of the project, recording grades and water surface elevation. 2) Survey 5 cross sections within the project area at pre-determined locations to be monumented immediately post construction. 3) Photo monitor and prepare written evaluation of substrate gradation characteristics throughout the project area to evaluate trends. 4) Test project post construction at two life stage design flows (i.e. fall/winter flows for adult salmonids and summer base flows for juveniles) 5) Prepare report presenting results and overlaying them on design and asbuilt conditions

#### *Task 4: Construction*

This task includes all the restoration elements and implementation methods for the Alpine Fish Passage Project Site. Construction components described below include the following: A) preconstruction; B) water pollution control; C) dewatering; D) fish relocation; E) clearing and grubbing; F) downstream channel demolition; G) downstream channel construction; H) culvert excavation and demolition; I) culvert construction; J) site restoration; K) revegetation and erosion control; L) construction monitoring; and M) post-construction.. These subtasks are described in further detail below. This project is anticipated to take two years due to the complex nature of the project design and work window restrictions from sensitive species.

A. Preconstruction. A staging area will be established nearby the construction site where equipment and materials will be mobilized. Construction staking and layout will be performed by the selected construction contractor and inspected by the consulting engineers (Waterways). A pre-construction meeting will be held with RCD, consulting engineers (Waterways), Jim Robins (Alnus Ecological), San Mateo County and CDFW to walk through the construction schedule and finalize roles and responsibilities.

B. Water Pollution Control. To protect water quality, the contractor will be required to adhere to the erosion control measures included in the designs and specifications. A dewatering plan will be prepared by the contractor and approved by the RCD, consulting engineers (Waterways), and CDFW. Pollution control techniques are anticipated to include temporary silt fencing around the access route, stockpiles and other highly disturbed areas. Any additional measures

provided by CDFW through the Regional General Permit and CEQA. Construction will be implemented during the summer and early fall when the stream flows are at a minimum.

C. Dewatering. A water diversion structure is required to dewater the project site, facilitate in-stream construction, and reduce potential impacts to water quality downstream of the project site. Placement of the diversion structure, fish and other sensitive species relocation will be carried out by qualified biologists with Alnus Ecological. Discharge of water from the dewatered construction site, either by gravity or pumping, will be performed in a manner that will prevent excessively turbid water from discharging back into the creek. Pumped water will be pre-filtered with a sand/gravel pack around the pump for subsurface flows and a silt fence or hay bales around the pump for surface flows. Pumped water will be discharged into isolated depressions, filter bags, settling (Baker) tanks, or temporary sediment basins, as necessary to meet water quality requirements.

D. Fish Relocation. Fish relocation will be conducted by Alnus Ecological (Jim Robins and Mike Podlech) with assistance from the RCD staff (Natural Resource Specialist, Conservation Assistant) as per CDFW and NMFS guidelines. We expect to electrofish the site until zero salmonids are observed and conduct site inspections to ensure that if fish have not reentered the site. A fish screen meeting CDFW/NMFS standards will be required to avoid fish entering any the pumps.

E. Clearing and Grubbing. The area around the existing structure where a temporary access road will be installed will be cleared and grubbed.

F. Downstream Channel Demolition: Prior to constructing the downstream channel, the three failing boulder weirs, a portion of the fish ladder and a portion of the concrete sacked wall will be demolished.

G. Downstream Channel Construction. The channel downstream of the arch culvert will be composed of ESM and constructed as a series of rock ramps interrupted by resting pools. A boulder weir is included at the upstream end of each resting pool to provide grade control and to promote pool scour. Rock slope protection will be placed along the right bank immediately downstream of the bridge at Alpine Road to arrest existing erosion occurring along the bank.

H. Culvert floor excavation and demolition. The existing structure will be excavated. Approximately 130cy of existing Portland cement concrete will be removed and off-hauled. The project geotechnical engineer (CMAG) has evaluated the site, local geologic maps, and the original culvert designs. Based on the findings from the geotechnical investigation, the geotechnical engineer has determined that the site is suitable for the proposed project and has provided a recommended construction phasing plan, as outlined in section 7.3.2 of the geotechnical. The phasing is recommended to minimize the effects of caving during excavation with the culvert. Excavation length along the footings is limited

to 6 feet at time within the alluvial/colluvial soils and 12 feet within bedrock, requiring that the concrete work be performed in sections. All excavation should be performed under the observation of the geotechnical engineer.

I. Culvert construction. Structural modifications to the existing culvert will include constructing a new concrete rectangular channel between the existing concrete footings and a concrete cutoff wall at the downstream end of the culvert. The concrete channel will be overlain with an Engineered Streambed Material (ESM) at a 4% longitudinal profile grade. Concrete baffles will be installed to help lock in the substrate.

J. Site restoration. These construction activities will result in the disturbance of soils and vegetation estimated at approximately 16,775 square feet (this includes all areas of disturbance except for the stockpile/staging area located on Alpine Road). Erosion control and revegetation are included in the restoration elements to stabilize soils and revegetate the site with native plants immediately following construction. Potential species to be planted include arroyo willow (*Salix lasiolepis*), red alder (*Alnus rubra*), coltsfoot (*Petasites frigidus*), and sedge (*Carex sp.*). Any bare soil or disturbed areas within the access and staging areas will also be restored to their pre-construction condition through surface re-grading, planting, material replacement, and any other means necessary.

K. Revegetation and Erosion Control. The majority of the project footprint is located in the entrenched stream channel bounded by bedrock on both banks. Riparian vegetation is limited in this area because there is limited planting substrate and low light penetration due to a high canopy of redwood trees. Revegetation of the site will mostly be limited to installing an erosion control seed mix and straw mulch on disturbed slope areas not receiving rock. Live alder or willow poles will be installed in the rock and the rehabilitated access road between the two culverts.

L. Construction Monitoring. Due to the variability of materials and sensitive site conditions, this project will require regular construction observation by consultant engineers and biological handlers and/or monitors with Alnus Ecological and the RCD. Observations by the engineers will help to ensure that the pattern of the channel thalweg, cross section geometry, pool dimensions, jetting operations, concrete forming, and other tasks are completed to satisfy the intent of the designs.

## **Deliverables:**

### Task 1: Project Management

- Signed grant agreement
- Progress and final reports including measurable performance measurements in the QA/QC checklist to be developed by the RCD, Alnus Ecological, Waterways and CDFW. 28

- Invoices
- Post project information on the Clearinghouse for Dam Removal

## Task 2: Permitting, Bidding, and Contractor Selection

- Authorization from FRGP that the project is covered under FRGP's programmatic permit
- San Mateo County Encroachment permit
  - Section 1600 permit
- Final construction specifications
- Bid package, if requested
- Construction award and contract, if requested

## Task 3: Biological Monitoring and Physical Surveys

- Protocols for frog and woodrat monitoring
  - Reports from subcontractors on survey results
  - Copies of training materials, if requested
  - Post project photo monitoring reports and physical surveys for a minimum of two years
- ## Task 4: Construction
- Meeting notes from construction manager
  - QA/QC completed checklist
  - Interagency correspondence, if required
  - Pre and during construction photo documentation
  - Red-lined drawings and/or as-builts including post project longitudinal profile.

## **Timelines:**

Project Start Date: June 1, 2019

### Task 1: Project Management June 1, 2018 to March 31, 2021

- Signed grant agreement – June 1, 2018
- Progress and final reports – March 31, 2021
- Invoices – March 31, 2021
- Post project information on the Clearinghouse for Dam Removal - March, 31 2020

### Task 2: Permitting, Bidding, and Contractor Selection: June 1, 2019 to June 30, 2020

- Authorization from FRGP that the project is covered under FRGP's programmatic permit – March 31, 2018
- San Mateo County Encroachment permit – June 30, 2018
- Section 1600 permit – June 30, 2018
- Final construction specifications – Included in this proposal
- Bid package – December 31, 2018
- Construction award and contract – August 31, 2019

### Task 3: Biological Monitoring and Physical Surveys June 1, 2017 to March 31, 2018

- Protocols for frog and woodrat monitoring – March 31, 2018

- Reports from subcontractors on fish relocation and biological survey results – December 31, 2019 and 2020
- Copies of training materials March 31, 2018
- Post project photo monitoring reports and physical surveys for a minimum of two years - March 31, 2019 and 2020

Task 4. Construction Two year construction timeframe: September 16, 2019 to October 31, 2019 and September 16, 2020 to October 31, 2020

- QA/QC completed checklist – March 31, 2018
- Interagency correspondence, if required - March 31, 2018
- Pre and during construction photo documentation - December 31, 2019 and 2020
- Red-lined drawings and/or as-builts - December 31, 2020

**Additional Requirements:** The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured. Work in flowing streams is restricted per the Army Corp of Engineers Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife.

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. Any and 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 California Department of Fish & Wildlife 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.

The Grantee shall notify the Grantor Project Manager a minimum of five working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for Grantor 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 NMFS Biological Opinion.
- d. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service, 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 Grant Manager 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 California Department of Fish and Wildlife (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 California Department of Fish and Wildlife engineers prior to commencement of work.

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual*, Volume I, and Volume II Part XI and Part XII. The Grantee/landowner will maintain the new crossing, inspect the crossing in a timely manner and remove debris as necessary during the storm season.



**Selected Elements by Common Name**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



**Query Criteria:** Quad (La Honda (3712233) OR Half Moon Bay (3712244) OR Woodside (3712243) OR Palo Alto (3712242) OR San Gregorio (3712234) OR Mindogo Hill (3712232) OR Pigeon Point (3712224) OR Franklin Point (3712223) OR Big Basin (3712222))

Possible species within the La Honda quadrangle and surrounding quads for 725597 Alpine Creek Fish Passage Project, T07S R04W S26, San Mateo County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b>Alameda song sparrow</b> <i>Melospiza melodia pusillula</i>	ABPBXA301S	None	None	G5T2?	S2S3	SSC
<b>American badger</b> <i>Taxidea taxus</i>	AMAJF04010	None	None	G5	S3	SSC
<b>American peregrine falcon</b> <i>Falco peregrinus anatum</i>	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
<b>Anderson's manzanita</b> <i>Arctostaphylos andersonii</i>	PDERI04030	None	None	G2	S2	1B.2
<b>arcuate bush-mallow</b> <i>Malacothamnus arcuatus</i>	PDMAL0Q0E0	None	None	G2Q	S2	1B.2
<b>bald eagle</b> <i>Haliaeetus leucocephalus</i>	ABNKC10010	Delisted	Endangered	G5	S3	FP
<b>bank swallow</b> <i>Riparia riparia</i>	ABPAU08010	None	Threatened	G5	S2	
<b>Bay checkerspot butterfly</b> <i>Euphydryas editha bayensis</i>	IILEPK4055	Threatened	None	G5T1	S1	
<b>Ben Lomond spineflower</b> <i>Chorizanthe pungens var. hartwegiana</i>	PDPGN040M1	Endangered	None	G2T1	S1	1B.1
<b>black swift</b> <i>Cypseloides niger</i>	ABNUA01010	None	None	G4	S2	SSC
<b>Blasdale's bent grass</b> <i>Agrostis blasdalei</i>	PMPOA04060	None	None	G2	S2	1B.2
<b>Bonny Doon manzanita</b> <i>Arctostaphylos silvicola</i>	PDERI041F0	None	None	G1	S1	1B.2
<b>Butano Ridge cypress</b> <i>Hesperocyparis abramsiana var. butanoensis</i>	PGCUP04082	Threatened	Endangered	G1T1	S1	1B.2
<b>California black rail</b> <i>Laterallus jamaicensis coturniculus</i>	ABNME03041	None	Threatened	G3G4T1	S1	FP
<b>California giant salamander</b> <i>Dicamptodon ensatus</i>	AAAAH01020	None	None	G3	S2S3	SSC
<b>California least tern</b> <i>Sternula antillarum browni</i>	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
<b>California red-legged frog</b> <i>Rana draytonii</i>	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<b>California Ridgway's rail</b> <i>Rallus obsoletus obsoletus</i>	ABNME05016	Endangered	Endangered	G5T1	S1	FP



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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b>California tiger salamander</b> <i>Ambystoma californiense</i>	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
<b>chaparral ragwort</b> <i>Senecio aphanactis</i>	PDAST8H060	None	None	G3	S2	2B.2
<b>Choris' popcornflower</b> <i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>	PDBOR0V061	None	None	G3T2Q	S2	1B.2
<b>coastal marsh milk-vetch</b> <i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	PDFAB0F7B2	None	None	G2T2	S2	1B.2
<b>coho salmon - central California coast ESU</b> <i>Oncorhynchus kisutch</i>	AFCHA02034	Endangered	Endangered	G4	S2?	
<b>Congdon's tarplant</b> <i>Centromadia parryi</i> ssp. <i>congdonii</i>	PDAST4R0P1	None	None	G3T2	S2	1B.1
<b>Crotch bumble bee</b> <i>Bombus crotchii</i>	IIHYM24480	None	None	G3G4	S1S2	
<b>Crystal Springs fountain thistle</b> <i>Cirsium fontinale</i> var. <i>fontinale</i>	PDAST2E161	Endangered	Endangered	G2T1	S1	1B.1
<b>Crystal Springs lessingia</b> <i>Lessingia arachnoidea</i>	PDAST5S0C0	None	None	G2	S2	1B.2
<b>Dudley's lousewort</b> <i>Pedicularis dudleyi</i>	PDSCR1K0D0	None	Rare	G2	S2	1B.2
<b>Edgewood blind harvestman</b> <i>Calicina minor</i>	ILARA13020	None	None	G1	S1	
<b>Edgewood Park micro-blind harvestman</b> <i>Microcina edgewoodensis</i>	ILARA47010	None	None	G1	S1	
<b>foothill yellow-legged frog</b> <i>Rana boylei</i>	AAABH01050	None	Candidate Threatened	G3	S3	SSC
<b>fragrant fritillary</b> <i>Fritillaria liliacea</i>	PMLIL0V0C0	None	None	G2	S2	1B.2
<b>Franciscan onion</b> <i>Allium peninsulare</i> var. <i>franciscanum</i>	PMLIL021R1	None	None	G5T1	S1	1B.2
<b>Franciscan thistle</b> <i>Cirsium andrewsii</i>	PDAST2E050	None	None	G3	S3	1B.2
<b>great blue heron</b> <i>Ardea herodias</i>	ABNGA04010	None	None	G5	S4	
<b>hoary bat</b> <i>Lasiurus cinereus</i>	AMACC05030	None	None	G5	S4	
<b>Hoover's button-celery</b> <i>Eryngium aristulatum</i> var. <i>hooveri</i>	PDAPI0Z043	None	None	G5T1	S1	1B.1
<b>Jepson's coyote-thistle</b> <i>Eryngium jepsonii</i>	PDAPI0Z130	None	None	G2	S2	1B.2
<b>Kellman's bristle moss</b> <i>Orthotrichum kellmanii</i>	NBMUS56190	None	None	G2	S2	1B.2



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<b>Kellogg's horkelia</b> <i>Horkelia cuneata</i> var. <i>sericea</i>	PDROS0W043	None	None	G4T1?	S1?	1B.1
<b>Kings Mountain manzanita</b> <i>Arctostaphylos regismontana</i>	PDERI041C0	None	None	G2	S2	1B.2
<b>legenere</b> <i>Legenere limosa</i>	PDCAM0C010	None	None	G2	S2	1B.1
<b>long-eared owl</b> <i>Asio otus</i>	ABNSB13010	None	None	G5	S3?	SSC
<b>longfin smelt</b> <i>Spirinchus thaleichthys</i>	AFCHB03010	Candidate	Threatened	G5	S1	SSC
<b>lost thistle</b> <i>Cirsium praeteriens</i>	PDAST2E2B0	None	None	GX	SX	1A
<b>marbled murrelet</b> <i>Brachyramphus marmoratus</i>	ABNNN06010	Threatened	Endangered	G3G4	S1	
<b>Marin western flax</b> <i>Hesperolinon congestum</i>	PDLIN01060	Threatened	Threatened	G1	S1	1B.1
<b>marsh microseris</b> <i>Microseris paludosa</i>	PDAST6E0D0	None	None	G2	S2	1B.2
<b>Methuselah's beard lichen</b> <i>Usnea longissima</i>	NLLEC5P420	None	None	G4	S4	4.2
<b>mimic tryonia (=California brackishwater snail)</b> <i>Tryonia imitator</i>	IMGASJ7040	None	None	G2	S2	
<b>minute pocket moss</b> <i>Fissidens pauperculus</i>	NBMUS2W0U0	None	None	G3?	S2	1B.2
<b>monarch - California overwintering population</b> <i>Danaus plexippus</i> pop. 1	IILEPP2012	None	None	G4T2T3	S2S3	
<b>Monterey pine</b> <i>Pinus radiata</i>	PGPIN040V0	None	None	G1	S1	1B.1
<b>Monterey Pine Forest</b> <i>Monterey Pine Forest</i>	CTT83130CA	None	None	G1	S1.1	
<b>Myrtle's silverspot butterfly</b> <i>Speyeria zerene myrtleae</i>	IILEPJ608C	Endangered	None	G5T1	S1	
<b>N. Central Coast Calif. Roach/Stickleback/Steelhead Stream</b> <i>N. Central Coast Calif. Roach/Stickleback/Steelhead Stream</i>	CARA2633CA	None	None	GNR	SNR	
<b>North Central Coast Drainage Sacramento Sucker/Roach River</b> <i>North Central Coast Drainage Sacramento Sucker/Roach River</i>	CARA2623CA	None	None	GNR	SNR	
<b>North Central Coast Short-Run Coho Stream</b> <i>North Central Coast Short-Run Coho Stream</i>	CARA2632CA	None	None	GNR	SNR	
<b>North Central Coast Steelhead/Sculpin Stream</b> <i>North Central Coast Steelhead/Sculpin Stream</i>	CARA2637CA	None	None	GNR	SNR	



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<b>Northern Coastal Salt Marsh</b> <i>Northern Coastal Salt Marsh</i>	CTT52110CA	None	None	G3	S3.2	
<b>Northern Interior Cypress Forest</b> <i>Northern Interior Cypress Forest</i>	CTT83220CA	None	None	G2	S2.2	
<b>obscure bumble bee</b> <i>Bombus caliginosus</i>	IIHYM24380	None	None	G4?	S1S2	
<b>Ohlone manzanita</b> <i>Arctostaphylos ohloneana</i>	PDERI042Y0	None	None	G1	S1	1B.1
<b>pallid bat</b> <i>Antrozous pallidus</i>	AMACC10010	None	None	G5	S3	SSC
<b>perennial goldfields</b> <i>Lasthenia californica ssp. macrantha</i>	PDAST5L0C5	None	None	G3T2	S2	1B.2
<b>Point Reyes meadowfoam</b> <i>Limnanthes douglasii ssp. sulphurea</i>	PDLIM02038	None	Endangered	G4T1	S1	1B.2
<b>red-bellied newt</b> <i>Taricha rivularis</i>	AAAAF02020	None	None	G4	S2	SSC
<b>Ricksecker's water scavenger beetle</b> <i>Hydrochara rickseckeri</i>	IICOL5V010	None	None	G2?	S2?	
<b>rose leptosiphon</b> <i>Leptosiphon rosaceus</i>	PDPLM09180	None	None	G1	S1	1B.1
<b>round-headed Chinese-houses</b> <i>Collinsia corymbosa</i>	PDSCR0H060	None	None	G1	S1	1B.2
<b>round-leaved filaree</b> <i>California macrophylla</i>	PDGER01070	None	None	G4	S4	1B.2
<b>Sacramento-San Joaquin Coastal Lagoon</b> <i>Sacramento-San Joaquin Coastal Lagoon</i>	CALA1360CA	None	None	GNR	SNR	
<b>saltmarsh common yellowthroat</b> <i>Geothlypis trichas sinuosa</i>	ABPBX1201A	None	None	G5T3	S3	SSC
<b>salt-marsh harvest mouse</b> <i>Reithrodontomys raviventris</i>	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
<b>salt-marsh wandering shrew</b> <i>Sorex vagrans halicoetes</i>	AMABA01071	None	None	G5T1	S1	SSC
<b>San Francisco campion</b> <i>Silene verecunda ssp. verecunda</i>	PDCAR0U213	None	None	G5T1	S1	1B.2
<b>San Francisco collinsia</b> <i>Collinsia multicolor</i>	PDSCR0H0B0	None	None	G2	S2	1B.2
<b>San Francisco dusky-footed woodrat</b> <i>Neotoma fuscipes annectens</i>	AMAFF08082	None	None	G5T2T3	S2S3	SSC
<b>San Francisco gartersnake</b> <i>Thamnophis sirtalis tetrataenia</i>	ARADB3613B	Endangered	Endangered	G5T2Q	S2	FP
<b>San Francisco popcornflower</b> <i>Plagiobothrys diffusus</i>	PDBOR0V080	None	Endangered	G1Q	S1	1B.1



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<b>San Mateo thorn-mint</b> <i>Acanthomintha duttonii</i>	PDLAM01040	Endangered	Endangered	G1	S1	1B.1
<b>San Mateo woolly sunflower</b> <i>Eriophyllum latilobum</i>	PDAST3N060	Endangered	Endangered	G1	S1	1B.1
<b>sand-loving wallflower</b> <i>Erysimum ammophilum</i>	PDBRA16010	None	None	G2	S2	1B.2
<b>Santa Clara red ribbons</b> <i>Clarkia concinna ssp. automixa</i>	PDONA050A1	None	None	G5?T3	S3	4.3
<b>Santa Cruz black salamander</b> <i>Aneides niger</i>	AAAAD01070	None	None	G3	S3	SSC
<b>Santa Cruz cypress</b> <i>Hesperocyparis abramsiana var. abramsiana</i>	PGCUP04081	Threatened	Endangered	G1T1	S1	1B.2
<b>Santa Cruz kangaroo rat</b> <i>Dipodomys venustus venustus</i>	AMAFD03042	None	None	G4T1	S1	
<b>Santa Cruz microseris</b> <i>Stebbinsoseris decipiens</i>	PDAST6E050	None	None	G2	S2	1B.2
<b>Santa Cruz Mountains beardtongue</b> <i>Penstemon rattanii var. kleei</i>	PDSCR1L5B1	None	None	G4T2	S2	1B.2
<b>Santa Cruz Mountains pussypaws</b> <i>Calyptridium parryi var. hesseae</i>	PDPOR09052	None	None	G3G4T2	S2	1B.1
<b>Schreiber's manzanita</b> <i>Arctostaphylos glutinosa</i>	PDERI040G0	None	None	G1	S1	1B.2
<b>Serpentine Bunchgrass</b> <i>Serpentine Bunchgrass</i>	CTT42130CA	None	None	G2	S2.2	
<b>short-leaved evax</b> <i>Hesperevax sparsiflora var. brevifolia</i>	PDASTE5011	None	None	G4T3	S2	1B.2
<b>slender silver moss</b> <i>Anomobryum julaceum</i>	NBMUS80010	None	None	G5?	S2	4.2
<b>slender-leaved pondweed</b> <i>Stuckenia filiformis ssp. alpina</i>	PM POT03091	None	None	G5T5	S3	2B.2
<b>steelhead - central California coast DPS</b> <i>Oncorhynchus mykiss irideus</i>	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
<b>tidewater goby</b> <i>Eucyclogobius newberryi</i>	AFCQN04010	Endangered	None	G3	S3	SSC
<b>Toren's grimmia</b> <i>Grimmia torenii</i>	NBMUS32330	None	None	G2	S2	1B.3
<b>Townsend's big-eared bat</b> <i>Corynorhinus townsendii</i>	AMACC08010	None	None	G3G4	S2	SSC
<b>two-fork clover</b> <i>Trifolium amoenum</i>	PDFAB40040	Endangered	None	G1	S1	1B.1
<b>unsilvered fritillary</b> <i>Speyeria adiaсте adiaсте</i>	IILEPJ6143	None	None	G1G2T1	S1	



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<b>vaginulate grimmia</b> <i>Grimmia vaginulata</i>	NBMUS32340	None	None	G2G3	S1	1B.1
<b>Valley Needlegrass Grassland</b> <i>Valley Needlegrass Grassland</i>	CTT42110CA	None	None	G3	S3.1	
<b>Valley Oak Woodland</b> <i>Valley Oak Woodland</i>	CTT71130CA	None	None	G3	S2.1	
<b>western bumble bee</b> <i>Bombus occidentalis</i>	IIHYM24250	None	None	G2G3	S1	
<b>western leatherwood</b> <i>Dirca occidentalis</i>	PDTHY03010	None	None	G2	S2	1B.2
<b>western pearlshell</b> <i>Margaritifera falcata</i>	IMBIV27020	None	None	G4G5	S1S2	
<b>western pond turtle</b> <i>Emys marmorata</i>	ARAAD02030	None	None	G3G4	S3	SSC
<b>western snowy plover</b> <i>Charadrius alexandrinus nivosus</i>	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
<b>white-flowered rein orchid</b> <i>Piperia candida</i>	PMORC1X050	None	None	G3	S3	1B.2
<b>white-rayed pentachaeta</b> <i>Pentachaeta bellidiflora</i>	PDAST6X030	Endangered	Endangered	G1	S1	1B.1
<b>woodland woollythreads</b> <i>Monolopia gracilens</i>	PDAST6G010	None	None	G3	S3	1B.2

Record Count: 112

Project Location Topographic Map

