

### Introduction:

The Pacific Coast Fish, Wildlife and Wetlands Restoration Association (PCFWWRA) will implement the Canon Creek Instream Habitat Improvement Project. Canon Creek supports populations of endangered coho salmon. The purpose of the project is to improve habitat in Canon Creek. Salmonid recovery plans recommend increasing stream habitat complexity in these streams by installing large woody debris (LWD). Adding LWD to Canon Creek will enhance pools, increase gravel sorting, and provide increased habitat complexity.

The Permittee shall not proceed with on the ground implementation until all necessary permits, consultations, and/or Notice to Proceed are secured. All habitat improvement(s) will follow techniques in the *California Salmonid Stream Habitat Restoration Manual* (Part VII <https://www.wildlife.ca.gov/Grants/FRGP/Guidance>).

### Objective(s):

This project will install 221 key pieces of wood in 2.25-miles of core salmonid recovery stream habitat in Canon Creek. This project will increase stream habitat complexity, pool frequency, pool depth, high-flow refugia, and over-summer rearing habitat for salmonids in the watershed.

### Project Description:

#### Location:

The confluence of Canon Creek with the Mad River is approximately 7 miles upstream of Blue Lake, CA. Much of Canon Creek is on Green Diamond Resource Company lands which encompass the majority of the 16.4 sq. mile watershed of Canon Creek. The project area stream restoration reach is located from Station 54+88 ft to Station 174+17 ft upstream from the Canon Creek/Mad River Confluence. Project coordinates are: 40.834436 North, 123.918383 West.

#### Project Set Up:

There are three fundamental tasks that need to be completed to accomplish this project: (1) Grant Oversight and Project Administration (2) Construction of the Large Woody Material (LWM) Features (3) Reporting.

Pacific Coast Fish, Wildlife and Wetlands Restoration Association will provide all contracting oversight and administration including but not limited to obtaining permits; securing contracts (grantors, subcontractors, and landowner); project scheduling; invoicing; report preparation; as well as facilitating agency and landowner communications.

PCFWWRA Personnel Categories - Project Manager (PM): Task 1-3: The Project Manager oversees all aspects of the project. This includes coordination and problem solving with agencies, landowner and subcontractors. Permits, landowner agreements and grant agreements are the Manager's responsibility to make they sure are in place and that they are followed. The PM regularly reviews the progress of the project and completed work with respect to the approved budget, as well as working regularly with technical consultants to make sure it is being done to the required standards. Evaluating information developed during the project and identifying realistic permitting strategies for implementation will be a task for the Project Manager. The PM will also expend time on tasks for compliance with requirements contained in the Agreement's Exhibit 1.b Non-Public Entities General Grant Provisions during the entire project. The PM is responsible for the review, editing, and submission of all invoices and reporting on projects. The Manager's time is split between the field, meetings and the office.

Administrative Assistant Manager (AAM): Task 1: The AAM drafts subcontracts, invoices, permit applications and reports, and works closely with the Project Manager. The AAM assists in tracking the project's budgets and progress. They communicate with partners, perform outreach as needed, and review/verify subcontractor invoicing. The Assistant position also expends time on tasks required for compliance with contained in the Agreement's Exhibit 1.b Non-Public Entities General Grant Provisions during the entire project. The AAM spends the majority of time in the office but also assists on-site as needed.

Bookkeeper/Office Manager: Task 1: Performs various financial bookkeeping, accounting, and administrative work as needed. These include payroll, accounts receivable and payable, financial statements, and maintaining accounting records for individual contracts. Other tasks are to maintain office functions, provide communications and perform site visits and support as needed. This position also tracks and completes tasks required for compliance contained in the Agreement's Exhibit 1.b Non-Public Entities General Grant Provisions during the entire project.

Plant Ecologist: Tasks 2 & 3: The Plant Ecologist performs botanical work. Tasks include performing a comprehensive floristic survey of the project site, inventorying and mapping any sensitive plants or natural communities found, photographing plants and habitats, preparing reports, and providing other supporting materials as needed for permit acquisition. Additionally, the Plant Ecologist will work with PWA staff to delineate wetlands prior to construction. The Plant Ecologist's time is split between the field and office.

GIS Specialist: Tasks 2 & 5: The GIS Specialist performs GIS work. Tasks include supporting field collection of botanical data and analyzing geospatial data. The GIS Specialist will prepare vegetation maps, sensitive plants and natural communities maps, wetland maps, and other maps needed for reporting

and permitting. The GIS Specialist spends the majority of time in the office but also assists on-site as needed.

Geologic Subcontractor (Construction layout/stakeout and technical oversight, construction management, monitoring and reporting) Pacific Watershed Associates, INC. (PWA), Personnel will support PCFWWRA with heavy equipment contractor selection, project implementation, construction supervision/management and will perform a pre/post-construction monitoring and as-built surveys for the construction of instream habitat structures. In addition, PWA will provide PCFWWRA with assistance in oversight of contractor activities during construction, evaluation and selection of construction materials, and conduct summary reporting pursuant to FRGP contract deliverables. Task 2. Construction of the Large Woody Material (LWM) Features Task 2 Setup (PWA): Construction of LWM features will be designed and led by a Pacific Watershed Associates, under the responsible charge of Associate Geologist William (Randy) Lew (Professional Geologist) and a PWA Principal Scientist. PWA Technical staff will provide project layout and construction oversight. The PWA Project Manager (Associate Geologist/PG) will manage project layout, construction oversight, monitoring, and reporting. PWA Technical Staff will conduct surveys, layout, construction oversight, pre-, during-, and post-construction monitoring, and any data entry. PWA GIS staff will provide field layout maps, digitize layout and as-built project data, and develop report maps. PWA Biologists will conduct pre- and post-conditions habitat inventories to evaluate project effectiveness as required by the FRGP. The PWA Wetlands Scientist will work with alongside the PCFWWRA Plant Ecologist to identify, map, and flag the boundaries of any wetlands for equipment exclusion that are present within the proposed project site construction zone prior to construction. Additional tasks for the PWA Wetland Scientist include preparing reports, and providing other supporting materials as needed for permit acquisition. The Wetlands Scientist's time is split between the field and office. PWA Clerical staff will track and monitor hours and create invoices during the project. The PWA Senior Scientist will conduct the paleontology review for CEQA. All PWA work elements will be supervised by a PWA Principal Scientist.

Heavy Equipment & Labor Contractor - The equipment and labor contractor will construct the project. Additionally, the equipment contractor will maintain temporary fish barriers and any flow diversion during construction, as necessary. Personnel categories include: Excavator, Dozer, Loader, Dump Truck, Laborer (Sawyer) and Laborer (General). The Heavy Equipment and Labor Contractor will only be considered for the project if they are a State licensed General Engineering Contractor and/or a Licensed Timber Operator (LTO) with demonstrated successful experience on projects of a similar nature and approved by Green Diamond Resource Company (landowner). The contractor will be determined through a rigorous selection process after the grant contract is signed.

Archeological CEQA Subcontractor (William Rich and Associates, WRA): Task 2. This subcontractor will be responsible for performing sensitive cultural resource surveys prior to construction.

Wildlife Biologist CEQA Subcontractor: Task 2. A qualified biologist will be selected to perform spotted owl, willow flycatcher, and/or any other sensitive bird surveys if necessary prior to construction. Task 3 ReportingAn interim cultural resource survey, botanical resource report and a paleontological report to CDFW prior to implementation. The final reporting of the project will be done by the PWA Professional Geologist with assistance from PWA Technical Staff and oversight from PCFWWRA Project Manager. The final summary report will include project accomplishments such as the final project budget, photographic monitoring, as-built site information, and other project information as required by the grant contract.

## **Materials:**

Trees (planting): Approximately 280 trees will be planted by laborers.Large Woody Material (LWM): GDRC will be providing 107 LWM pieces and the grant will purchase another 144 (avg. length 70' x 1.75' diameter) of Douglas fir and redwood.Straw: Approximately 28 bales of weed-free straw mulch will be provided by the subcontractor.Seed: Approximately 6 pounds of seed. PCFWWRA will procure the seed for spreading by the Equipment and Labor Contractor.Generator/hole hawg/drill bits (Equipment and Labor Contractor): Materials required for structure anchoring (including extension cord and gasoline for a portable generator)Rebar, nuts, plates (Equipment and Labor Contractor): Materials required for anchoring structuresPorta band (Equipment and Labor Contractor): Blades required for structure installationLog tongs (Equipment and Labor Contractor/PWA): PWA or the equipment contractor will provide log tong excavator attachments to facilitate the process of LWM installation.Pressure Washer (Equipment and Labor Contractor): A (hot water) pressure washer is used to decontaminate heavy equipment between each use in different waterbodies and watersheds to prevent the spread of invasive species as per the equipment decontamination methods stated in the PCFWWRA decontamination protocol. It will be the responsibility of the equipment sub-contractor to decontaminate all heavy equipment prior to entering the project areaPWA Mileage: PWA staff require mileage, to accommodate travel needs to visit the site, conduct project work tasks, and meet with partners.PCFWWRA Mileage: Project Manager requires mileage reimbursement for trips to the project site.PWA Field and Office Supplies: Field materials may include, but are not limited to flagging, tablet rental, metal identification tags, nails, rite-in-the rain paper, gloves, spray paint, cameras, and measuring field tapes. Office supplies used to complete the project include photo duplication for final reports, copying/binding for final reports, large format report maps, laminating and postage.PCFWWRA Supplies: Includes costs associated with field supplies, meeting materials, and supporting supplies such as flagging, measuring tapes,

wooden stakes, rite-in-the-rain paper, notebooks and notepads, writing utensils, charting pads, envelopes, poster board, and fastening supplies. PCFWWRA Permit Fee: Required for securing CDFW Section 1602 Lake or Streambed Alteration Agreement (LSAA) for the project.

### **Tasks:**

#### **Task 1 – Grant Oversight and Project Administration**

PCFWWRA personnel will provide all contracting oversight and administration as pursuant to grant and regulatory guidelines. This includes but is not limited to, obtaining permits, securing contracts, scheduling, implementation oversight, invoicing, reporting, and agency and landowner communications. Upon final execution of the Grant and prior to receiving a Final Notice to Proceed, PCFWWRA personnel will deliver the landowner access agreements, subcontracts, and assure all permits are finalized. Additionally, PCFWWRA personnel will be available to assist with invoicing and vendor payment. This task will occur throughout the life of the project.

#### **Task 2.1 – Construction of the LWM features**

PWA staff will be responsible for facilitating and directing technical project implementation and providing direct construction management and oversight of the equipment contractor. The heavy equipment and labor contractor will complete equipment operation and labor tasks.

#### **Task 2.2: Pre-project layout & surveys**

Following approval by CDFW of site-specific designs, PWA will flag heavy equipment access routes and construction boundaries, layout equipment exclusion areas for sensitive biologic assessments and identified wetlands, cultural resources, and LWD staging areas. They will also document the existing conditions at the proposed LWM feature locations and establish photo point monitoring stations at the construction locations for final reporting. Pre-construction monitoring will be performed by PWA in a manner consistent with CDFW guidelines and as required by the FRGP. Once the project disturbance areas have been flagged, scientists from PWA and GDRC, as well as the contract archeologists from WRA will conduct their respective surveys to assure environmental and cultural resource protection.

#### **Task 2.3: Environmental compliance and CEQA surveys**

PWA will coordinate with PCFWWRA, CDFW, and GDRC to conduct the appropriate surveys for cultural resources, migratory songbirds, botanical resources, paleontological resources, and special status species, as necessary. PCFWWRA will prepare and submit the CDFW LSAA 1600 notification and fee needed for project authorization. The PCFWWRA Plant Ecologist will conduct a special status plant survey and will work with the PWA Staff Wetlands Scientist to perform a wetland identification survey of the proposed disturbance areas. WRA will conduct archeology surveys. The results of these surveys and any required



mitigation measures will be included in draft technical memos and delivered to the CDFW project manager prior to start of implementation. Final reports will be submitted to the CDFW Project Manager as per requirements of the grant agreement.

## **Task 2.4: Construction of LWM features**

Most of the LWM features will be constructed using heavy equipment but, in some locations, the features will be constructed by direct falling of trees by a professional tree faller. In general, the excavator and bulldozer will be used to create low impact access routes to the proposed LWM features and construct the LWM structures. The features will be constructed with an excavator with a log tong attachment. To install the LWM features, the excavator and bulldozer will create an access route to the streamside area and the excavator will install the logs while the dozer will deliver logs to the construction site from the adjacent road. The excavator will grapple each log with the log tongs and, to the extent feasible, weave them through the existing riparian forest with the intention of wedging the log through the riparian trees such that the existing riparian forest provides natural anchoring for the features. In some locations, where equipment access is limited, trees will be placed into the creek by direct falling by an LTO supervised tree faller. Where prudent, small, and medium sized tree fragments that do not meet the criteria for "key logs" will be incorporated into the spider jams as pre-racked and loose material. These racked and loose logs/branches will reduce each spider jam's porosity and more closely mimic naturally developed wood features. Once the primary architecture (key logs) of the features has been completed, PWA in coordination with the CDFW Project Manager will determine if hard anchor points will be required at each of the constructed features. Hard anchor points will be installed by the Contractor. Possible anchor locations have been provided in the included feature sketches in the supplemental information. After the CDFW Project Manager approves of the final configuration and anchoring of each equipment access route will be winterized by decompacting the disturbed ground surface and mulching all bare areas with wood slash and or weed-free straw. Native seed will be spread in the bare soil areas to provide short to medium term erosion control and native trees (mostly redwoods) will be planted for long term riparian succession and future LWM recruitment to the stream system.

## **Task 2.5: Post construction documentation**

Post-construction documentation, including before and after photographs, and documentation of as-built conditions, will be performed by PWA consistent with the CDFW guidelines and as required by the FRGP. As built drawings will include structure placement and alignment, representative cross sections and longitudinal profiles, and the sizes and quantity of materials added. In addition, once the fish habitat improvement structures have been constructed, a post-implementation habitat inventory will be conducted to quantify the habitat improvements and the remediation of the limiting factors identified in the previous

surveys. All methods will follow the methodologies as discussed in Part II and Part III of the CA Restoration Manual.

### **Task 3 - Reporting**

PCFWWRA and PWA will develop project reports (annual reports and a final project report), based on CDFW grant agreement requirements, which documents work completed and the total costs to implement the project. Reports will be submitted annually by November 15, and a Final Project Report will be prepared and submitted prior to grant close-out (including Final Project Budget and Final Invoice). Annual and final reports will include summaries of the following information as required: (1) general grant information, (2) location of work, (3) project access, (4) participating landowners name and address, (5) a description and analysis of the restoration and planning person hours expended, (6) a quantified description of the results of the project, including as-built site information, (7) dates of work and the number of person hours expended, (8) labeled before-and-after photos of constructed sites, (9) GIS generated maps and shapefiles of the project area, and (10) monitoring checklists, databases, spreadsheets and any other data products produced during the grant term.

### **Deliverables:**

Task 1 – Project deliverables will include the information listed below as well as everything that will be delivered to the CDFW Project Manager during the life of the project: Final Landowner Access Agreements (prior to receiving Notice to Proceed); Executed subcontractor agreements (prior to receiving the Notice to Proceed), and Invoices & Progress Reports (submitted at least quarterly).

Task 2 – Installation of 58 LWM jams over a 2.25-mile stream reach, containing approximately 221 pieces of wood. Wood will be woven into the existing riparian corridor. Hardware anchors will be used where required.

Task 2.2 – Initial layout and pre-construction documentation of existing conditions of all LWM features and flagged staging areas and equipment exclusion zones; Final layout and design of LWD features and access routes.

Task 2.3 – Interim cultural resource, botanical, biological (aquatic, avian, etc.) and paleontological reports (completed prior to receiving Notice to Proceed); Final Cultural resource, botanical, and paleontological reports (to be completed prior to project Final Report); Preparation and payment of CDFW LSAA/1600 Agreement application and fee (prior to receiving Notice to Proceed). Initial layout and pre-construction existing conditions of all LWM features and flagged staging areas and equipment exclusion zones; Final layout and conceptual designs of LWD features based on feedback from the CDFW Project Manager, biologists, paleontologists, and archeologists.

Task 2.4 – Installation of 58 LWM jams over a 2.25-mile stream reach, containing approximately 221 pieces of wood. Wood will be woven into the existing riparian

corridor. Hardware anchors will be used where required. Planting of 280 redwood trees in disturbed areas.

Task 2.5 – Actual performance measures by site, as-built drawings, before and after photographs, habitat inventory survey data, representative post-project longitudinal profiles and cross sections of LWM feature sites.

Task 3 – Progress Reports (pdf format); Annual Reports (pdf format); and Final Grant Report (cd and hard copy), including all pre-and post-project data produced as a part of the project; Final Invoice and Final Budget.

### **Timelines:**

Task 1 – 3/1/2021 to 3/31/2024

Task 2 – 6/1/2021 to 10/31/2023

Task 2.2 – 6/15/2021 to 7/1/2022

Task 2.3 – 3/1/2021 to 7/1/2022

Task 2.4 – 6/15/2021 to 10/31/2023

Task 2.5 – 6/15/2023 to 3/24/2024

Task 3 – 6/15/2021 to 3/25/2024

### **Additional Requirements:**

The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured and a “notice to proceed” letter has been received from the Grantor Project Manager. 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 Grantor.

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 when there is a threat of heavy rains which will cause flooding.

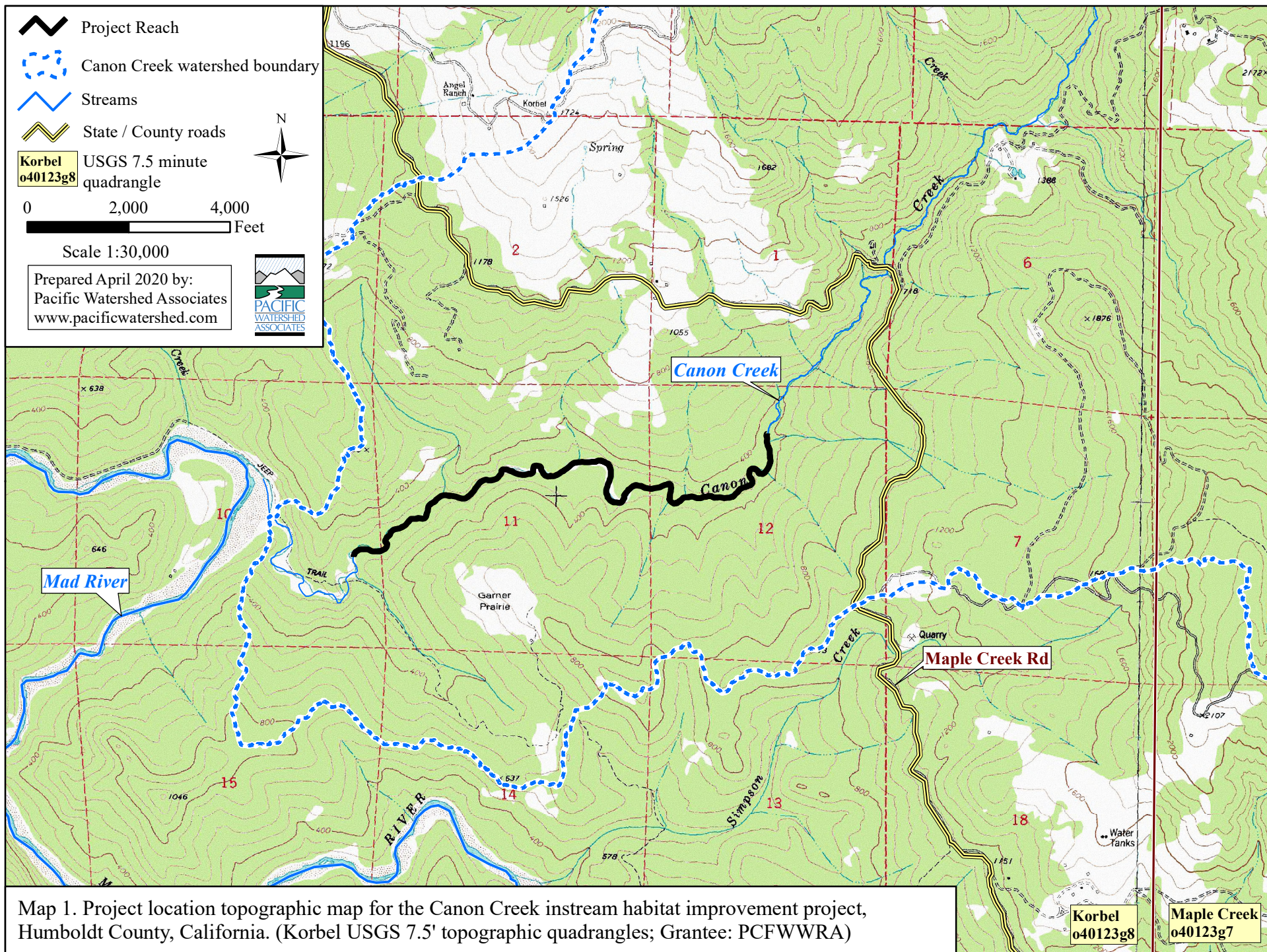
All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the California Department of Fish & Wildlife *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.



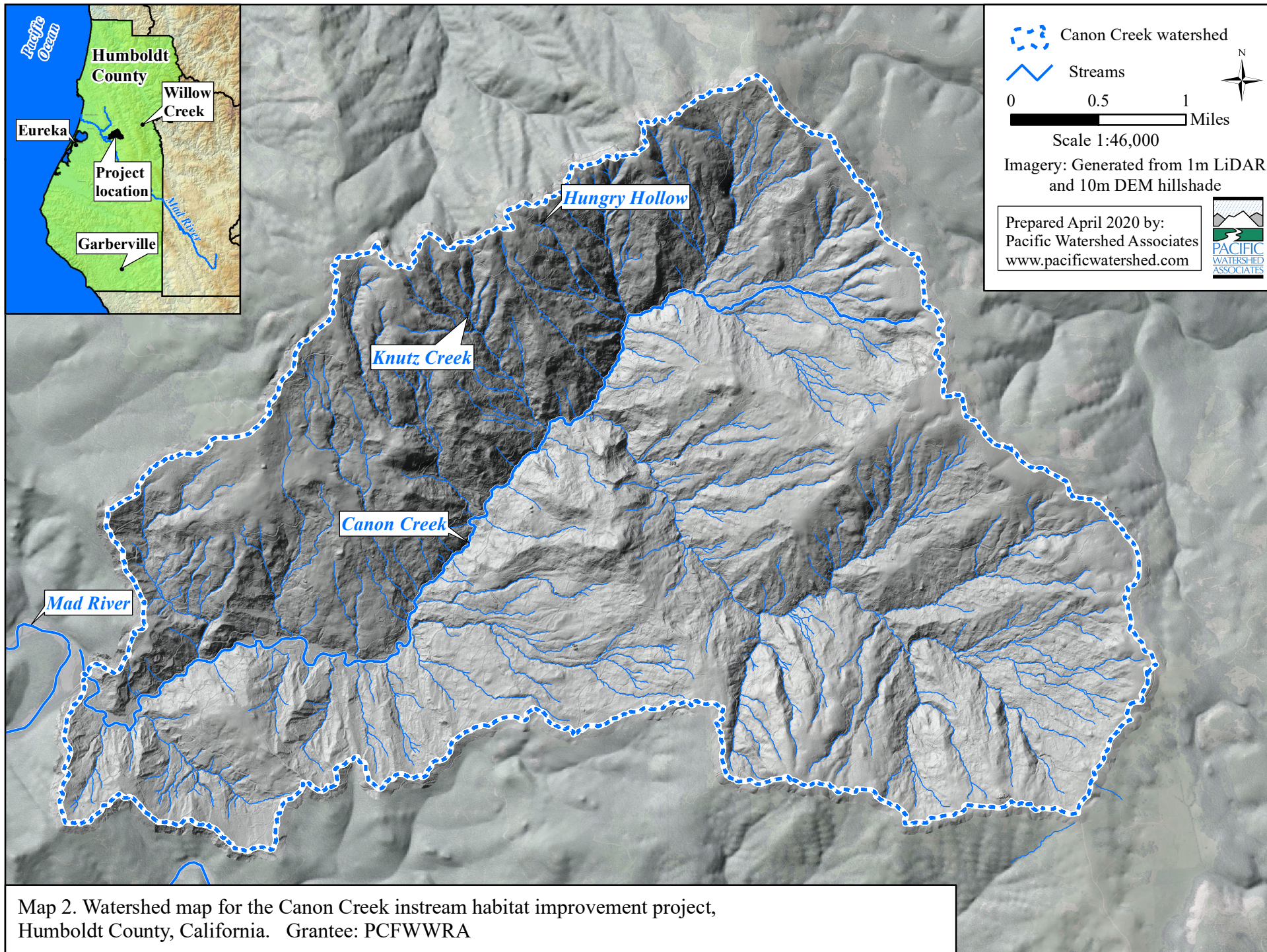
Final structure design and placement will be determined by field consultation between the Grantee and the Grantor Project Managers. All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual*.





Map 1. Project location topographic map for the Canon Creek instream habitat improvement project, Humboldt County, California. (Korbel USGS 7.5' topographic quadrangles; Grantee: PCFWWRA)





Map 2. Watershed map for the Canon Creek instream habitat improvement project, Humboldt County, California. Grantee: PCFWWRA





## Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



**Query Criteria:** Quad< IS </span>(Korbel (4012378)<span style='color:Red'> OR </span>Laqua Buttes (4012368)<span style='color:Red'> OR </span>McWhinney Creek (4012461)<span style='color:Red'> OR </span>Arcata South (4012471)<span style='color:Red'> OR </span>Arcata North (4012481)<span style='color:Red'> OR </span>Blue Lake (4012388)<span style='color:Red'> OR </span>Lord-Ellis Summit (4012387)<span style='color:Red'> OR </span>Maple Creek (4012377)<span style='color:Red'> OR </span>Mad River Buttes (4012367))

Possible species within the Korbel and surrounding quads for 1723397 - Canon Creek Instream Habitat Improvement Project, Humboldt County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Abronia umbellata</i> var. <i>breviflora</i></b> pink sand-verbena	PDNYC010N4	None	None	G4G5T2	S2	1B.1
<b><i>Accipiter cooperii</i></b> Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
<b><i>Accipiter striatus</i></b> sharp-shinned hawk	ABNKC12020	None	None	G5	S4	WL
<b><i>Acipenser medirostris</i></b> green sturgeon	AFCAA01030	Threatened	None	G3	S1S2	SSC
<b><i>Anodonta californiensis</i></b> California floater	IMBIV04020	None	None	G3Q	S2?	
<b><i>Aplodontia rufa humboldtiana</i></b> Humboldt mountain beaver	AMAF01017	None	None	G5TNR	SNR	
<b><i>Aquila chrysaetos</i></b> golden eagle	ABNKC22010	None	None	G5	S3	FP
<b><i>Arborimus albipes</i></b> white-footed vole	AMAFF23010	None	None	G3G4	S2	SSC
<b><i>Arborimus pomo</i></b> Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
<b><i>Ardea herodias</i></b> great blue heron	ABNGA04010	None	None	G5	S4	
<b><i>Ascaphus truei</i></b> Pacific tailed frog	AAABA01010	None	None	G4	S3S4	SSC
<b><i>Astragalus umbraticus</i></b> Bald Mountain milk-vetch	PDFAB0F990	None	None	G4	S2	2B.2
<b><i>Atractelmis wawona</i></b> Wawona riffle beetle	IICOL58010	None	None	G3	S1S2	
<b><i>Bensoniella oregona</i></b> bensoniella	PDSAX02010	None	Rare	G3	S2	1B.1
<b><i>Bombus caliginosus</i></b> obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
<b><i>Bombus occidentalis</i></b> western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
<b><i>Brachyramphus marmoratus</i></b> marbled murrelet	ABNNN06010	Threatened	Endangered	G3G4	S1	
<b><i>Cardamine angulata</i></b> seaside bittercress	PDBRA0K010	None	None	G4G5	S3	2B.1



# Selected Elements by Scientific Name

## California Department of Fish and Wildlife

### California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b>Carex arcta</b> northern clustered sedge	PMCYP030X0	None	None	G5	S1	2B.2
<b>Carex lyngbyei</b> Lyngbye's sedge	PMCYP037Y0	None	None	G5	S3	2B.2
<b>Carex praticola</b> northern meadow sedge	PMCYP03B20	None	None	G5	S2	2B.2
<b>Castilleja ambigua var. humboldtiensis</b> Humboldt Bay owl's-clover	PDSCR0D402	None	None	G4T2	S2	1B.2
<b>Charadrius alexandrinus nivosus</b> western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
<b>Charadrius montanus</b> mountain plover	ABNNB03100	None	None	G3	S2S3	SSC
<b>Chloropyron maritimum ssp. palustre</b> Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
<b>Cicindela hirticollis gravida</b> sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
<b>Cleptes humboldti</b> Humboldt cuckoo wasp	IIHYM67010	None	None	G1G2	S1S2	
<b>Coptis laciniata</b> Oregon goldthread	PDRAN0A020	None	None	G4?	S3?	4.2
<b>Cornus canadensis</b> bunchberry	PDCOR01040	None	None	G5	S2	2B.2
<b>Corynorhinus townsendii</b> Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
<b>Coturnicops noveboracensis</b> yellow rail	ABNME01010	None	None	G4	S1S2	SSC
<b>Elanus leucurus</b> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<b>Emys marmorata</b> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<b>Entosphenus tridentatus</b> Pacific lamprey	AFBAA02100	None	None	G4	S4	SSC
<b>Epilobium oreganum</b> Oregon fireweed	PDONA060P0	None	None	G2	S2	1B.2
<b>Erethizon dorsatum</b> North American porcupine	AMAFJ01010	None	None	G5	S3	
<b>Erythronium oregonum</b> giant fawn lily	PMLIL0U0C0	None	None	G4G5	S2	2B.2
<b>Erythronium revolutum</b> coast fawn lily	PMLIL0U0F0	None	None	G4G5	S3	2B.2
<b>Eucyclogobius newberryi</b> tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC





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<b><i>Fissidens pauperculus</i></b> minute pocket moss	NBMUS2W0U0	None	None	G3?	S2	1B.2
<b><i>Gilia capitata ssp. pacifica</i></b> Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
<b><i>Glyceria grandis</i></b> American manna grass	PMPOA2Y080	None	None	G5	S3	2B.3
<b><i>Haliaeetus leucocephalus</i></b> bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
<b><i>Iliamna latibracteata</i></b> California globe mallow	PDMAL0K040	None	None	G2G3	S2	1B.2
<b><i>Lampetra richardsoni</i></b> western brook lamprey	AFBAA02090	None	None	G4G5	S3S4	SSC
<b><i>Lathyrus japonicus</i></b> seaside pea	PDFAB250C0	None	None	G5	S2	2B.1
<b><i>Lilium occidentale</i></b> western lily	PMLIL1A0G0	Endangered	Endangered	G1	S1	1B.1
<b><i>Lycopodium clavatum</i></b> running-pine	PPLYC01080	None	None	G5	S3	4.1
<b><i>Margaritifera falcata</i></b> western pearlshell	IMBIV27020	None	None	G4G5	S1S2	
<b><i>Martes caurina humboldtensis</i></b> Humboldt marten	AMAJF01012	Proposed Threatened	Endangered	G5T1	S1	SSC
<b><i>Microseris borealis</i></b> northern microseris	PDAST6E030	None	None	G5	S1	2B.1
<b><i>Mitellastra caulescens</i></b> leafy-stemmed mitrewort	PDSAX0N020	None	None	G5	S4	4.2
<b><i>Monotropa uniflora</i></b> ghost-pipe	PDMON03030	None	None	G5	S2	2B.2
<b><i>Montia howellii</i></b> Howell's montia	PDPOR05070	None	None	G3G4	S2	2B.2
<b><i>Myotis evotis</i></b> long-eared myotis	AMACC01070	None	None	G5	S3	
<b><i>Noccaea fendleri ssp. californica</i></b> Kneeland Prairie pennycress	PDBRA2P041	Endangered	None	G5?T1	S1	1B.1
<b>Northern Coastal Salt Marsh</b> Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
<b><i>Nycticorax nycticorax</i></b> black-crowned night heron	ABNGA11010	None	None	G5	S4	
<b><i>Oenothera wolfii</i></b> Wolf's evening-primrose	PDONA0C1K0	None	None	G2	S1	1B.1
<b><i>Oncorhynchus clarkii clarkii</i></b> coast cutthroat trout	AFCHA0208A	None	None	G4T4	S3	SSC



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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Oncorhynchus kisutch</i> pop. 2</b> coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	G4T2Q	S2?	
<b><i>Oncorhynchus mykiss irideus</i> pop. 16</b> steelhead - northern California DPS	AFCHA0209Q	Threatened	None	G5T2T3Q	S2S3	
<b><i>Oncorhynchus mykiss irideus</i> pop. 36</b> summer-run steelhead trout	AFCHA0213B	None	Candidate Endangered	G5T4Q	S2	SSC
<b><i>Packera bolanderi</i> var. <i>bolanderi</i></b> seacoast ragwort	PDAST8H0H1	None	None	G4T4	S2S3	2B.2
<b><i>Pandion haliaetus</i></b> osprey	ABNKC01010	None	None	G5	S4	WL
<b><i>Pekania pennanti</i></b> fisher - West Coast DPS	AMAJF01021	Endangered	Threatened	G5T2T3Q	S2S3	SSC
<b><i>Phalacrocorax auritus</i></b> double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
<b><i>Piperia candida</i></b> white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
<b><i>Plethodon elongatus</i></b> Del Norte salamander	AAAAD12050	None	None	G4	S3	WL
<b><i>Rana aurora</i></b> northern red-legged frog	AAABH01021	None	None	G4	S3	SSC
<b><i>Rana boylei</i></b> foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
<b><i>Rhyacotriton variegatus</i></b> southern torrent salamander	AAAAJ01020	None	None	G3G4	S2S3	SSC
<b><i>Riparia riparia</i></b> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<b><i>Sanguisorba officinalis</i></b> great burnet	PDROS1L060	None	None	G5?	S2	2B.2
<b><i>Sanicula tracyi</i></b> Tracy's sanicle	PDAP11Z0K0	None	None	G4	S4	4.2
<b><i>Sedum laxum</i> ssp. <i>flavidum</i></b> pale yellow stonecrop	PDCRA0A0L2	None	None	G5T3Q	S3	4.3
<b><i>Sidalcea malachroides</i></b> maple-leaved checkerbloom	PDMAL110E0	None	None	G3	S3	4.2
<b><i>Sidalcea malviflora</i> ssp. <i>patula</i></b> Siskiyou checkerbloom	PDMAL110F9	None	None	G5T2	S2	1B.2
<b><i>Sidalcea oregana</i> ssp. <i>eximia</i></b> coast checkerbloom	PDMAL110K9	None	None	G5T1	S1	1B.2
<b><i>Spergularia canadensis</i> var. <i>occidentalis</i></b> western sand-spurrey	PDCAR0W032	None	None	G5T4	S1	2B.1
<b><i>Spirinchus thaleichthys</i></b> longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	



Selected Elements by Scientific Name  
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California Natural Diversity Database



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<b><i>Thaleichthys pacificus</i></b> eulachon	AFCHB04010	Threatened	None	G5	S3	
<b><i>Thermopsis robusta</i></b> robust false lupine	PDFAB3Z0D0	None	None	G2	S2	1B.2
<b><i>Trichodon cylindricus</i></b> cylindrical trichodon	NBMUS7N020	None	None	G4G5	S2	2B.2
<b><i>Upland Douglas Fir Forest</i></b> Upland Douglas Fir Forest	CTT82420CA	None	None	G4	S3.1	
<b><i>Usnea longissima</i></b> Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2
<b><i>Viola palustris</i></b> alpine marsh violet	PDVIO041G0	None	None	G5	S1S2	2B.2

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