Anderson Creek Habitat Enhancement for Coho Recovery - Phase IV

2019

Introduction:

The Eel River Watershed Improvement Group (ERWIG) will implement the Anderson Creek Habitat Enhancement Project for Coho Recovery Phase IV. Anderson Creek supports populations of endangered coho salmon (*Oncorhynchus kisutch*). The purpose of the project is to improve habitat in Anderson Creek. Salmonid recovery plans recommend increasing stream habitat complexity in these streams by installing large woody debris (LWD). Adding LWD to Anderson Creek will enhance pools, increase gravel sorting, and provide increased habitat complexity.

The Grantee 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):

The purpose of this project is to supplement ongoing efforts to provide short and long term benefits to salmonids through the placement of LWD. The placed LWD will enhance pools, increase gravel sorting, create cover and provide increased habitat complexity.

Project Description:

Location:

Anderson Creek is located northwest of Leggett, Mendocino County, California in Township 24 North, Range 19 West, Sections 13 & 24 of the Bear Harbor 7.5 Minute U.S. Geological Survey (USGS) Quadrangle map. Anderson Creek is a tributary to Indian Creek which is itself a tributary to the South Fork Eel River. The project reach contains 41 features within an approximately 1.9 mile stretch of stream starting approximately 2.5 miles from the confluence of Anderson Creek and Indian Creek and approximately 8.5 miles from the confluence of Indian Creek and South Fork Eel River. Project coordinates are: 39.554635 N and -123.552363 W at the Center of the project reach along upper Anderson Creek and 39.97177 N and -123.80074 W at the low water crossing over the South Fork Eel River.

Project Set Up:

There are six fundamental tasks that need to be completed to accomplish this project: (1) administration, (2) pre-implementation, (3) implementation, (4) post-implementation, (5) riparian planting and (6) reporting.
Administration (Task 1) - The project administration will be done by ERWIG staff who shall provide all contracting oversight and administration including but not limited to obtaining permits, securing contracts (grantors, subcontractors, and landowner), scheduling, implementation oversight, invoicing, manage budgeting, reporting and agency and landowner communications. This task will occur throughout the life of the project.

Pre-Implementation (Task 2) - The Pacific Watershed Associates (PWA) Associate Scientist, Staff Scientist, GIS staff, and Clerical staff will complete this task. The GIS staff will provide base maps for the project set up. PWA Engineering Geologist, Associate Scientist and Staff Scientist will conduct the required field work, feature layout, field reviews and meetings. RFFI and PWA Staff scientists will conduct the required pre-implementation field work for CEQA. The ERWIG Project Manager will assist with pre-project scheduling and set-up. The PWA Clerical staff will maintain work records and develop invoices.

Implementation (Task 3) - The PWA Staff Scientist will oversee day to day construction activities and the Associate Scientist will check all work apon completion. Rice Logging will be used for all construction needs throughout the implementation of this project including falling trees with a chainsaw, the installation of LWD structures and the installation and removal of the low water crossing over the South Fork Eel River. When needed, the California Conservation Corps (CCC) will grip-hoist LWD into position and if applicable hard anchor with rebar, nuts and plates. The PWA Associate Scientist, Staff Scientist and CCC Fish Habitat Specialist will be on-site to supervise final placement of each feature. ERWIG Project Manager will make sure LWD strucutures are meeting project goals. All structures will be placed and anchored in a manner consistent with procedures in the CDFW *California Salmonid Stream Habitat Restoration Manual*, Section VII (Flosi et. al, 2010). PWA GIS staff will create field and reporting maps, PWA Clerical staff will track budgets and create invoices, and a PWA Principal will oversee all PWA operations.Once the primary structural elements of the wood jams are in place, Corps members will pre-rack each feature with medium and small woody debris and brush, thereby providing additional cover and habitat complexity for salmonids. In addition to hand placing medium and small woody debris as pre-rack, Corps members will use this same material as erosion control by covering up any bare soil with said material.

Post-Implementation (Task 4) - PWA Associate Scientist, Physical Scientist and ERWIG Project Manager will conduct all the post-implementation field work and field reviews.

Riparian Planting (Task 5) - Woodbenders will plant trees and native shrubs along the project reach.

Reporting (Task 6) - The annual and final reporting of the project will be done by the PWA Associate Scientist, Physical Scientist and Principal with assistance and oversight from ERWIG's Project Manager. The PWA GIS staff will finalize all mapping needs for the final report. The annual reports will happen every year of the project and the final report will be conducted at the end of the project.

Materials:

Trees/Shrubs (Woodbenders): Four hundred trees and native shrubs will be planted by the specialized revegetation sub-contractor Woodbenders. Native understory and overstory vegetation will be planted in the riparian zone. This will facilitate the restoration of existing riparian zones, in areas disturbed by restoration activities and will be consistent with the local native riparian vegetation and succession. RFFI will be providing the local native trees for replanting as an in-kind donation. The shrubs will be purchased by ERWIG.

Large Woody Debris (ERWIG): 119 logs will be required to build the 41 features. These logs will be in-kind donation by the landowner, RFFI.

Fuel (All): Implementation of the proposed project is estimated to require the use of approximately 586 gallons of gasoline for operating pick-up trucks and approximately 370 gallons of diesel that will be used to conduct the restoration activities.

Miscellaneous field and office supplies (PWA): Many small field and office supplies will be used to complete the project including: photographic supplies, flagging, wood stakes, field maps, mylar overlays for field maps, photo duplication for final reports, copying/binding/CD for final reports, report maps, phone, fax, and postage. PWA will be responsible for procurement of these materials.

Mileage (ERWIG): ERWIG Project Manager requires mileage reimbursement for round trips to the project site.

Contractor Mileage (Rice Logging, Woodbenders, ERWIG): Two-way contractor mileage is required for transportation costs to get the contractors to the project site on a daily basis.

Sub-Contractor Mileage and Per Diem (PWA): PWA staff require mileage, lodging and per diem to accommodate travel needs to visit the site and meet with partners.

Field/Office Supplies (ERWIG, PWA): Supplies that will be required for ERWIG and PWA staff members to assist contractors with project site monitoring and assessments and pre-construction layout, as well as materials needed for ERWIG to complete grant administration tasks such as hosting meetings, scheduling, and managing budgets. These may include (but are not limited to): flagging, measuring tapes, wooden stakes, rite-in-the-rain paper, notebooks and notepads, writing implements, charting pads, envelopes, poster board, and fastening supplies. ERWIG and PWA will be purchasing these materials.

Printing/Duplication (ERWIG, PWA): Supplies that are required for printing items related to grant and project administration, such as reports, invoices, meeting handouts, and maps. These items may include (but are not limited to): paper, ink, and toner. This item also includes costs associated with external printing or copying services that may be required to produce reporting and meeting materials. ERWIG and PWA will be purchasing these materials.

Postage (ERWIG, PWA): This includes supplies and costs for sending or shipping grant administration items such as reports, permit applications, invoices, and contracts. ERWIG and PWA will be purchasing these materials.

Griphhoists (ERWIG): TU-32 Tractel griphoists will be purchased to move logs into final position.

Mainline Cable (ERWIG): Used in griphoists to pull logs.

Misc Gripping Materials (ERWIG): items in maintenance kit such as sheer pins and handle presses.

Blocks/Pulley (ERWIG): Used during gripping for change of directions.

Chainsaw (ERWIG): Used when needed to trim tree branches and cut down dead hazard or obstacle trees.

Tasks:

Task 1 – Administration
ERWIG personnel will provide all contracting oversight and grant administration as pursuant to grant and regulatory guidelines. This includes but is not limited to obtaining permits, securing contracts (grantors, subcontractors, landowner), scheduling, invoicing, reporting and agency and landowner communications. Upon Final execution of the Grant and prior to receiving a Final Notice to Proceed, ERWIG personnel will deliver the landowner access agreements, subcontracts, and assure all permits are finalized. This task will occur throughout

the life of the project. Materials Required: Field/office supplies, postage, and travel expenses.

Task 2 – Pre-Implementation
PWA will coordinate with ERWIG, CDFW, and RFFI to conduct the appropriate surveys for special status species and cultural resources when necessary. RFFI staff will conduct the archeological and botanical assessments and surveys and will write the reports. PWA will complete the paleontological assessments/surveys. PWA will flag heavy equipment access routes and construction boundaries (layout) as well as low water crossing site, equipment exclusion areas for biological or cultural resource protection, and LWD staging areas. They will also document the existing conditions at the proposed feature locations and setup 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 FRGP.

Task 3 – Implementation
Low bed trucks will be used to move heavy equipment in and out of the project area at the beginning and end of the work season, these will require a pilot car to move through the road system. Decontamination protocols will be employed prior to move-in. An excavator and bulldozer will be used to install and remove the low water crossing bridge. A gasoline powered water pump will be used to protect water quality during installation of temporary crossings if prudent; these will be managed by a laborer. LWD features will be constructed using a chainsaw by a feller. Once LWD has been fallen, CCC crews will adjust and anchor LWD when needed. PWA will be providing 100% oversight at each feature. Where prudent, small and medium sized tree fragments will be incorporated into the spider jams as pre-racked and loose material. These racked and loose logs/branches will reduce the spider jams porosity and more closely mimic naturally developed wood features. Once the primary architecture of the features has been completed, PWA and ERWIG, in coordination with the CDFW project, manager will determine if hard anchor points will be required at each of the constructed features. This task may begin as early as July 2020, if pre-implementation surveys are feasible in that year. Otherwise construction activities will occur during low flow periods of 2021 or 2022.

Task 4 – Post-Implementation
Post-construction monitoring, including photographic monitoring, and documentation of as-built conditions, will be performed by PWA consistent with the CDFW guidelines and as required by FRGP. Field reviews with partners and CDFW Grant Manager will be conducted. Woodbenders will conduct revegetation throughout the 1.9 mile reach where disturbance has happened as a result of implementation.

Task 5 – Reporting
PWA, working closely with ERWIG, will develop the annual and final reports consistent with CDFW FRGP requirements. This task will be conducted throughout the life of the grant.

Task 6 – Riparian Planting
In the winter following construction of LWD structures, Woodbenders will plant 400 trees and native shrubs. Approximately 300 Douglas firs (*Psuedotsuga menziesii*) and/or redwood (*Sequoia sempervirens*) will be planted along with approximately 100 native shrubs. Native shrubs may include the following: evergreen huckleberry (*Vaccinium ovatum*), thimbleberry (*Rubus parviflorus*), red elderberry (*Sambucus racemosa*), and cascara buckthorn (*Frangula purshiana*). Trees and shrubs will be planted in areas disturbed by the project and areas lacking sufficient canopy.

Deliverables:

Task 1 – Administration
Landowner Access Agreements; Copies of Subcontracts; copies of permits; progress reports and invoices.

Task 2 – Pre-Implementation
Initial layout and pre-construction existing conditions of all LWD features and flagged staging areas and equipment exclusion zones. Final 100% designs for 41 LWD features. Botanical, Paleontological and Cultural Resource Reports.

Task 3 – Implementation
Construction of 41 LWD features throughout the 1.9 mile stream section in Anderson Creek. Installation of hard anchor points where required. Erosion control Best Management Practices on all streamside access areas and disturbed ground.

Task 4 – Post-Implementation
As-built documentation of the project site, before and after photographs of each feature, and other documentation as required by FRGP. Revegetation on disturbed areas.

Task 5 – Reporting
Annual reports in pdf format. Draft report in pdf format and final report in pdf and hard copy formats.

Task 6 – Riparian Planting
A list of species planted and number of each species.

Timelines:

Task 1 – Administration – 4/1/2020 to 3/31/2023

Task 2 – Pre-Implementation – 4/1/2020 to 7/1/2020

Task 3 – Implementation – 7/1/2020 to 10/15/2022

Task 4 – Post-Implementation – 12/1/2020 to 3/1/2023

Task 5 – Reporting – 3/31/2020 to 3/31/2023

Task 6 – Riparian Planting – 12/1/2021 to 2/28/2023

Additional Requirements:

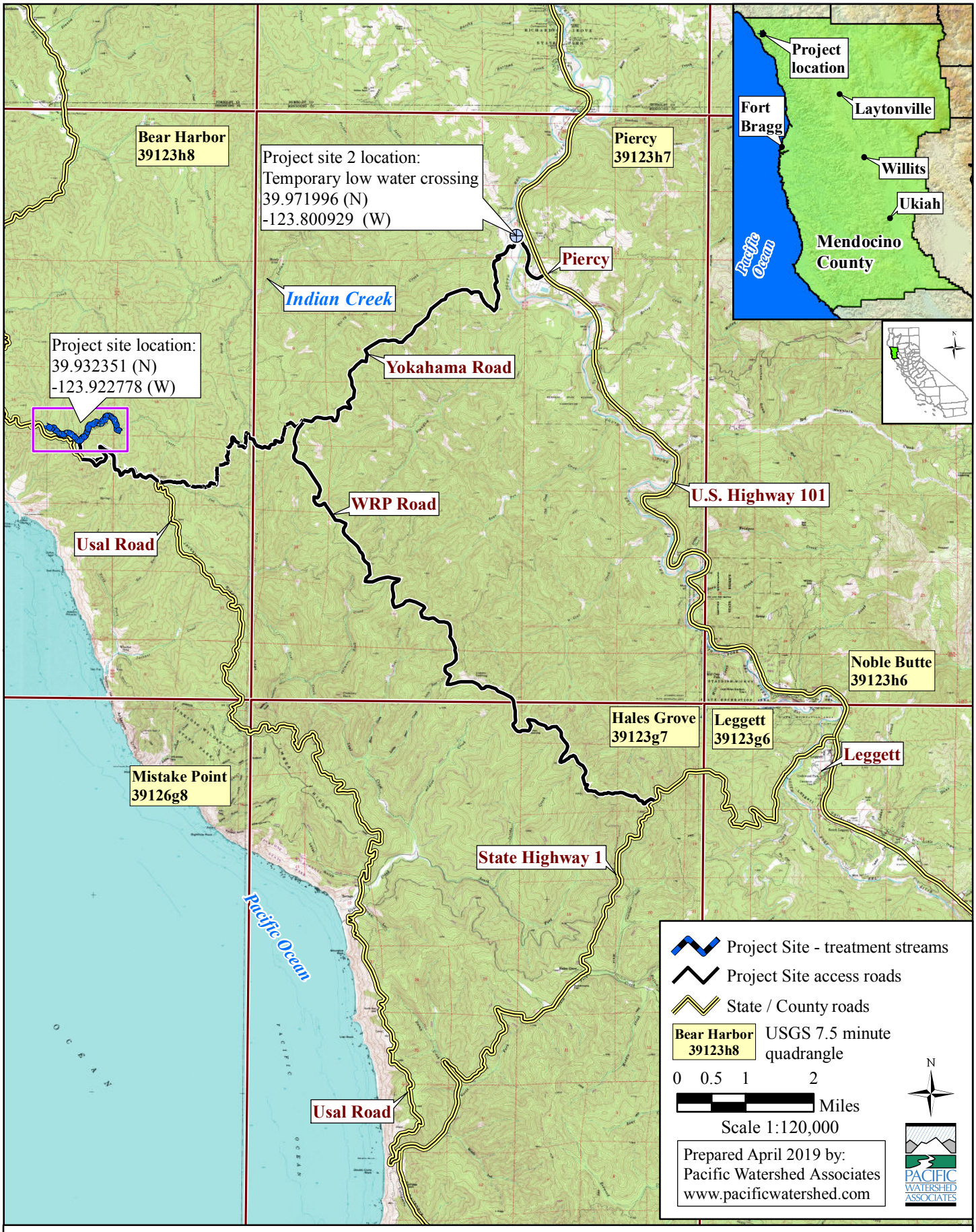
The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured and a "notice to proceed" letter has been received from the Grantor Project Manager. Work in flowing streams is restricted per the Army Corp of Engineers Regional General Permit. Actual 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 Anderson Creek Habitat Enhancement Project for Coho Recovery, Phase IV, Mendocino County, California. Grantee: Eel River Watershed Improvement Group

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Piercy (3912387) OR Sherwood Peak (3912355) OR Harris (4012316) OR Noble Butte (3912386) OR Leggett (3912376) OR Hales Grove (3912377) OR Mistake Point (3912378) OR Bear Harbor (3912388) OR Briceland (4012318) OR Garberville (4012317) OR Laytonville (3912364) OR Longvale (3912354) OR Burbeck (3912344) OR Northspur (3912345) OR Noyo Hill (3912346) OR Dutchmans Knoll (3912356) OR Lincoln Ridge (3912366) OR Cahto Peak (3912365))

Possible species within the Piercy and Sherwood Peak and their surrounding quads for 3067 Anderson Creek Habitat Enhancement for Coho Recover - Phase IV, Mendocino County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Accipiter gentilis northern goshawk	ABNKC12060	None	None	G5	S3	SSC
Accipiter striatus sharp-shinned hawk	ABNKC12020	None	None	G5	S4	WL
Alisma gramineum grass alisma	PMALI01010	None	None	G5	S3	2B.2
Anodonta californiensis California floater	IMBIV04020	None	None	G3Q	S2?	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Arabis mcdonaldiana McDonald's rockcress	PDBRA06150	Endangered	Endangered	G3	S3	1B.1
Arborimus pomo Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
Arctostaphylos nummularia ssp. mendocinoensis pygmy manzanita	PDERI04280	None	None	G3?T1	S1	1B.2
Arctostaphylos stanfordiana ssp. raichei Raiche's manzanita	PDERI041G2	None	None	G3T2	S2	1B.1
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Ascaphus truei Pacific tailed frog	AAABA01010	None	None	G4	S3S4	SSC
Astragalus agnicidus Humboldt County milk-vetch	PDFAB0F080	None	Endangered	G2	S2	1B.1
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	None	G2G3	S1	
Brachyramphus marmoratus marbled murrelet	ABNNN06010	Threatened	Endangered	G3G4	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Brasenia schreberi watershield	PDCAB01010	None	None	G5	S3	2B.3
Calamagrostis foliosa leafy reed grass	PMPOA170C0	None	Rare	G3	S3	4.2
Campanula californica swamp harebell	PDCAM02060	None	None	G3	S3	1B.2
Cardamine angulata seaside bittercress	PDBRA0K010	None	None	G4G5	S3	2B.1
Carex lenticularis var. limnophila lagoon sedge	PMCYP037A7	None	None	G5T5	S1	2B.2
Carex lyngbyei Lyngbye's sedge	PMCYP037Y0	None	None	G5	S3	2B.2
Carex saliniformis deceiving sedge	PMCYP03BY0	None	None	G2	S2	1B.2
Castilleja litoralis Oregon coast paintbrush	PDSCR0D012	None	None	G3	S3	2B.2
Castilleja mendocinensis Mendocino Coast paintbrush	PDSCR0D3N0	None	None	G2	S2	1B.2
Ceanothus foliosus var. vineatus Vine Hill ceanothus	PDRHA040D6	None	None	G3T1	S1	1B.1
Clarkia amoena ssp. whitneyi Whitney's farewell-to-spring	PDONA05025	None	None	G5T1	S1	1B.1
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Coptis laciniata Oregon goldthread	PDRAN0A020	None	None	G4?	S3?	4.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Entosphenus tridentatus Pacific lamprey	AFBAA02100	None	None	G4	S4	SSC
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Eriogonum kelloggii Kellogg's buckwheat	PDPGN083A0	None	Endangered	G2	S2	1B.2
Erythronium revolutum coast fawn lily	PMLIL0U0F0	None	None	G4G5	S3	2B.2
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC
Gentiana setigera Mendocino gentian	PDGEN060S0	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Gilia capitata ssp. pacifica Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
Gilia millefoliata dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
Hesperocyparis pygmaea pygmy cypress	PGCUP04032	None	None	G1	S1	1B.2
Hesperolinon adenophyllum glandular western flax	PDLIN01010	None	None	G2G3	S2S3	1B.2
Horkelia marinensis Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Limnanthes bakeri Baker's meadowfoam	PDLIM02020	None	Rare	G1	S1	1B.1
Lupinus milo-bakeri Milo Baker's lupine	PDFAB2B4E0	None	Threatened	G1Q	S1	1B.1
Lycopodium clavatum running-pine	PPLYC01080	None	None	G5	S3	4.1
Margaritifera falcata western pearlshell	IMBIV27020	None	None	G4G5	S1S2	
Mitellastra caulescens leafy-stemmed mitrewort	PDSAX0N020	None	None	G5	S4	4.2
Montia howellii Howell's montia	PDPOR05070	None	None	G3G4	S2	2B.2
Myotis evotis long-eared myotis	AMACC01070	None	None	G5	S3	
Myotis thysanodes fringed myotis	AMACC01090	None	None	G4	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
North Central Coast Fall-Run Steelhead Stream North Central Coast Fall-Run Steelhead Stream	CARA2631CA	None	None	GNR	SNR	
Northern Interior Cypress Forest Northern Interior Cypress Forest	CTT83220CA	None	None	G2	S2.2	
Oncorhynchus kisutch pop. 2 coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	G4T2Q	S2?	
Oncorhynchus kisutch pop. 4 coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G4	S2?	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Oncorhynchus mykiss irideus pop. 16 steelhead - northern California DPS	AFCHA0209Q	Threatened	None	G5T2T3Q	S2S3	
Oncorhynchus mykiss irideus pop. 36 summer-run steelhead trout	AFCHA0213B	None	None	G5T4Q	S2	SSC
Packera bolanderi var. bolanderi seacoast ragwort	PDAST8H0H1	None	None	G4T4	S2S3	2B.2
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Pekania pennanti fisher - West Coast DPS	AMAJF01021	None	Threatened	G5T2T3Q	S2S3	SSC
Piperia candida white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
Pleuropogon hooverianus North Coast semaphore grass	PMPOA4Y070	None	Threatened	G2	S2	1B.1
Potamogeton epihydrus Nuttall's ribbon-leaved pondweed	PMPOT03080	None	None	G5	S2S3	2B.2
Progne subis purple martin	ABPAU01010	None	None	G5	S3	SSC
Ramalina thrausta angel's hair lichen	NLLEC3S340	None	None	G5	S2?	2B.1
Rana aurora northern red-legged frog	AAABH01021	None	None	G4	S3	SSC
Rana boylii foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Rhyacotriton variegatus southern torrent salamander	AAAAJ01020	None	None	G3G4	S2S3	SSC
Sedum laxum ssp. eastwoodiae Red Mountain stonecrop	PDCRA0A0L1	None	None	G5T2	S2	1B.2
Sidalcea malachroides maple-leaved checkerbloom	PDMAL110E0	None	None	G3	S3	4.2
Silene campanulata ssp. campanulata Red Mountain catchfly	PDCAR0U0A2	None	Endangered	G5T3Q	S3	4.2
Taricha rivularis red-bellied newt	AAAAF02020	None	None	G4	S2	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thermopsis robusta robust false lupine	PDFAB3Z0D0	None	None	G2	S2	1B.2
Upland Douglas Fir Forest Upland Douglas Fir Forest	CTT82420CA	None	None	G4	S3.1	
Usnea longissima Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Viburnum ellipticum	PDCPR07080	None	None	G4G5	S3?	2B.3
oval-leaved viburnum						

Record Count: 81