

Aikens Creek Instream Habitat Enhancement Project

2019

Introduction:

The Mid Klamath Watershed Council will implement the Aikens Creek Instream Habitat Enhancement Project. The project will enhance 0.6 mile of stream with 24 large wood structures. These wood structures will increase rearing and spawning habitat for coho salmon (*Oncorhynchus kisutch*). This project will benefit salmonids by addressing limiting conditions identified in Final Recovery Plan for the Southern Oregon/Northern California Coast Evolutionarily Significant Unit of Coho Salmon (2014) National Marine Fisheries Service. The SONCC Plan lists increasing large woody debris, boulders, or other instream structures as the highest priority actions for recovering the Middle Klamath River coho population.

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* <https://www.wildlife.ca.gov/Grants/FRGP/Guidance>.

Objective(s):

This project will create 24 large woody debris structures within 2,100 feet of Aikens Creek, consisting of 49 logs, all key pieces. These structures will enhance spawning and rearing habitat by increasing and sorting spawning gravel, creating velocity and temperature refugia, and increasing aggradation leading to floodplain connectivity.

Project Description:

Location:

The project is located in Aikens Creek, a tributary to the Klamath River at River Mile 48.9, between the towns of Weitchpec and Orleans, California, Humboldt County. The project reach is within the first 0.6 miles of Aikens Creek, all downstream of the Highway 96 bridge. See project location map. Project coordinates are: Latitude 41.228025 and Longitude -123.65304.

Project Set Up:

Fisheries Program Co-Director I will provide oversight with project administration, and technical management of the Project.

Fisheries Program Co-Director II will complete the following tasks: project reporting, implementation planning, secure subcontractor agreements and regulatory permitting, wood procurement.

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Project Coordinator will complete the following tasks: permitting compliance, project logistics, construction management, subcontractor oversight, pre/post project monitoring, progress reporting.

Plants Coordinator will implement and oversee compliance of the Aikens Creek Invasive Species Prevention and Revegetation Plan.

Senior Field Techs I and II will provide labor for wood structure installation, pre and post construction monitoring, traffic control, erosion control, install project information signage.

Plant Field Techs I and II will implement the Aikens Creek Invasive Species Prevention and Revegetation Plan

Summer Interns will provide labor for riparian planting, vegetation maintenance, erosion control, monitoring.

Materials:

All materials will be purchased by the applicant, the Mid Klamath Watershed Council. The following is a list of materials that will be used for this project:

- 1) 49 logs with root wads, lengths of logs vary between 25 and 60 feet long, with a minimum diameter (dbh) of 18". The purpose of these logs are to be the key log pieces in 24 wood structures. The logs will slow the creek down, creating conditions for gravel deposition.
- 2) Approximately 240 cubic yards of rack material will be used in this project. Rack material is wood material ranging in length from 5 to 20 feet with an average diameter of 6 inches. The rack material will be placed under or between key logs to expedite the structures' desired physical functions.
- 3) Native plants, weed free mulch, grass seed, t-posts and planting cages and weed free straw will be used to prevent erosion and minimize the spread of invasive weeds in the project footprint.
- 4) Silt fences will be purchased to prevent erosion into the creek while installing the wood structures.
- 5) Hard hats and gloves will be used for safety.
- 6) Signs for the wood structures will be used to prevent log theft and also inform the public on the purpose of the wood structures.

- 7) Informational booth board, signs and brochures will be used to inform the public about the project. The project site is at a campground and Klamath River access so it is anticipated that there will be a lot of public traffic.
- 8) The Trimble RTK and Total Station will be used to collect post-project information including longitudinal and cross section surveys.

Tasks:

Task 1: Project Management; Grantee will provide technical and administrative services associated with the Project. Secure all permits, administer subcontracts, project tracking, invoicing and payments, submit progress, quarterly and final reports.

Task 2: Project Planning and Coordination; Grantee will secure subcontract agreements with Technical Contractor, Heavy Equipment Contractor, Log Contractor and Cultural Resource Monitor for project implementation. Grantee will complete all required regulatory documentation including securement of necessary permits and CEQA surveys for construction. Grantee will develop and submit a task detailed implementation plan.

Task 3: Site Preparation; Grantee will identify and flag equipment access trails to each of the site locations, establish pre-project photo documentation, and finalizing the site designs for approval by the CDFW Grant Manager. Prepare sites for implementation, areas for equipment storage, re-fuel, maintenance. Identify staging sites for material storage and install pre-construction erosion control measures. Procure logs and woody material for structure implementation.

Task 4: Log Wood Structures; Twenty-four log structures will be constructed in accordance with the Six Rivers National Forest Service - Six Rivers National Forest Aquatic Restoration Action Plan and CDFW's *California Salmonid Stream Habitat Restoration Manual*. Forty-Nine (49) key log pieces with woody vegetation material will be installed in a 2,100 foot section of Aikens Creek.

Task 5: Riparian Planting; Grantee will implement the Aikens Creek Invasive Species Prevention and Revegetation Plan. Native trees, shrubs, and grasses will be planted in the treatment area, invasive vegetation will be removed. Riparian plants will be irrigated and maintained throughout the term of the grant agreement.

Task 6: Post Construction Monitoring; Grantee will conduct post implementation surveys for the following: longitudinal channel profile with cross-

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sections, as-built drawings, pre- & post-construction photo documentation, total number of logs installed. Project monitoring data will be included in the project's final report.

Task 7: Reporting; Grantee will write and deliver Annual Progress Reports, and a Draft and Final Report to CDFW Grant Manager.

Deliverables:

Task 1: Project Management; Subcontractor Contracts, Access Agreements, Invoices, Invoice Progress Reports.

Task 2: Project Planning and Coordination; CEQA Surveys, LSAA Permit, Subcontractor Agreements, Implementation Schedule

Task 3: Site Preparation; Identify Access Lanes and Staging Areas, Pre-project metrics and photos, Finalize Site Design, Log Procurement

Task 4: Log Wood Structure; Install 49 Log Pieces with Root Wads and 240 cubic yards of Woody Material. Construct 24 Wood Structures

Task 5: Riparian Planting; Plant Native Vegetation, Remove Invasive Vegetation, Irrigate, Maintain Riparian Plantings

Task 6: Post Construction Monitoring; As-Built Plan, Longitudinal Channel Profile, Post Monitoring Metrics and Photos

Task 7: Reporting; Annual Reports, Quarterly Reports, Draft and Final Report

Timelines:

Task 1: Project Administration and Management – 03/01/2020 to 12/31/2023

Task 2: Project Planning and Coordination – 03/01/2020 to 08/01/2020

Task 3: Site Preparation – 03/01/2020 to 10/15/2020

Task 4: Log Wood Structures – 08/17/2020 to 11/01/2020

Task 5: Riparian Planting – 03/16/2020 to 11/15/2023

Task 6: Post Construction Monitoring – 11/01/2020 to 11/01/2023

Task 7: Reporting – 11/01/2020 to 12/31/2023

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*.

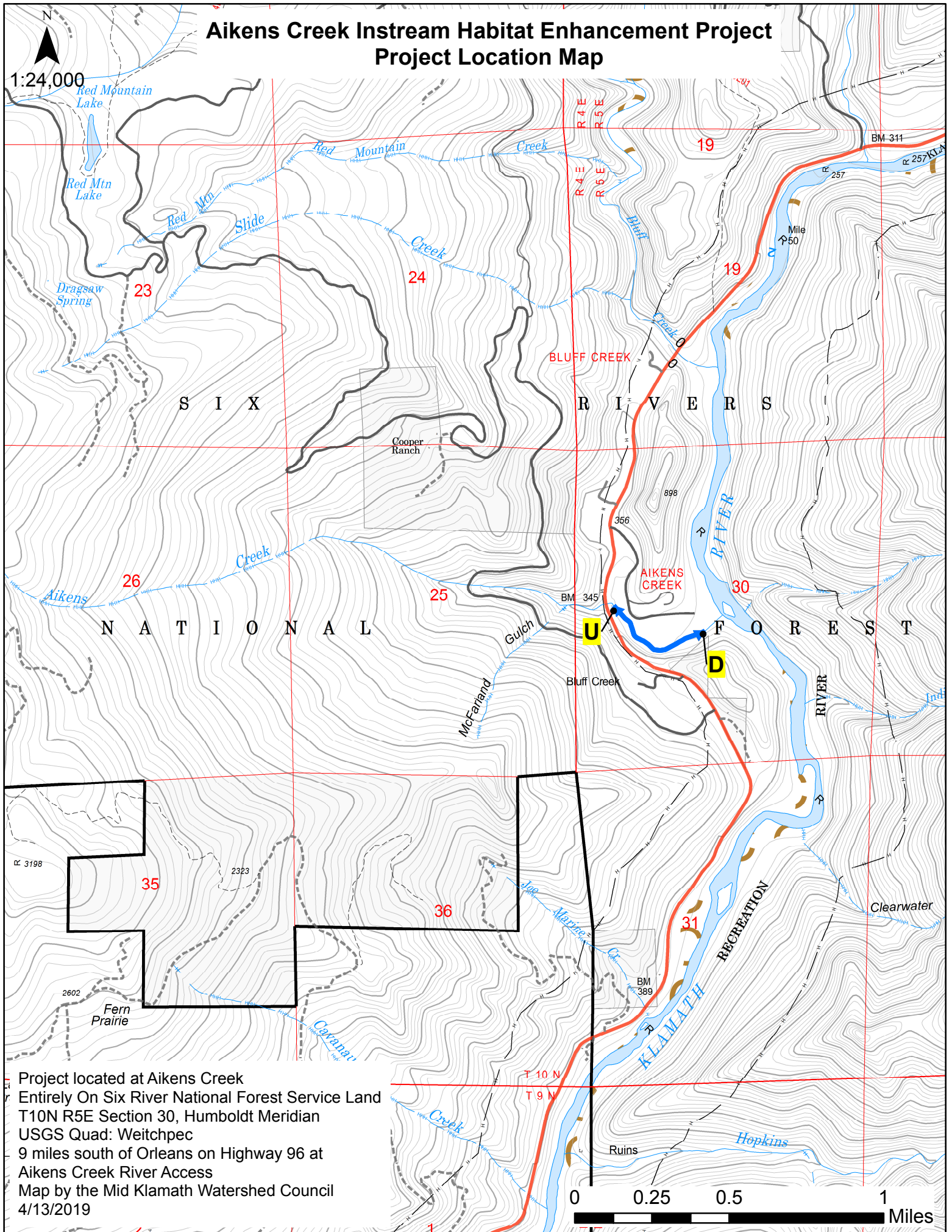
- c. The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the USACE Regional General Permit and NMFS Biological Opinion.
- d. All electrofishing shall 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.

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.

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

Aikens Creek Instream Habitat Enhancement Project Project Location Map

1:24,000



Project located at Aikens Creek
Entirely On Six River National Forest Service Land
T10N R5E Section 30, Humboldt Meridian
USGS Quad: Weitchpec
9 miles south of Orleans on Highway 96 at
Aikens Creek River Access
Map by the Mid Klamath Watershed Council
4/13/2019



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Weitchpec (4112326) OR Orleans (4112335) OR Hopkins Butte (4112325) OR Tish Tang Point (4112315) OR Hoopa (4112316) OR Hupa Mountain (4112317) OR French Camp Ridge (4112327) OR Johnsons (4112337))

Possible species within the Weitchpec and surrounding quads for 3079 Aikens Creek Instream Habitat Enhancement Project, Humboldt County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Accipiter gentilis</i> northern goshawk	ABNKC12060	None	None	G5	S3	SSC
<i>Ancotrema voyanum</i> hooded lancetooth	IMGAS36130	None	None	G1G2	S1S2	
<i>Anomobryum julaceum</i> slender silver moss	NBMUS80010	None	None	G5?	S2	4.2
<i>Aplodontia rufa humboldtiana</i> Humboldt mountain beaver	AMAF01017	None	None	G5TNR	SNR	
<i>Arborimus pomo</i> Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Ascaphus truei</i> Pacific tailed frog	AAABA01010	None	None	G4	S3S4	SSC
<i>Astragalus umbraticus</i> Bald Mountain milk-vetch	PDFAB0F990	None	None	G4	S2	2B.3
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	None	G2G3	S1	
<i>Bombus suckleyi</i> Suckley's cuckoo bumble bee	IIHYM24350	None	None	GU	S1	
<i>Bonasa umbellus</i> ruffed grouse	ABNLC11010	None	None	G5	S3S4	WL
<i>Carex praticola</i> northern meadow sedge	PMCYP03B20	None	None	G5	S2	2B.2
<i>Coptis laciniata</i> Oregon goldthread	PDRAN0A020	None	None	G4?	S3?	4.2
<i>Cornus canadensis</i> bunchberry	PDCOR01040	None	None	G5	S2	2B.2
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
<i>Cottus klamathensis polyporus</i> Lower Klamath marbled sculpin	AFC4E02153	None	None	G4T2T4	S2S4	SSC
<i>Cypseloides niger</i> black swift	ABNUA01010	None	None	G4	S2	SSC
<i>Epilobium oregonum</i> Oregon fireweed	PDONA060P0	None	None	G2	S2	1B.2
<i>Erythronium oregonum</i> giant fawn lily	PMLIL0U0C0	None	None	G4G5	S2	2B.2



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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Erythronium revolutum</i> coast fawn lily	PMLIL0U0F0	None	None	G4G5	S3	2B.2
<i>Gilia capitata ssp. pacifica</i> Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
<i>Haliaeetus leucocephalus</i> bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
<i>Helminthoglypta hertleini</i> Oregon shoulderband	IMGASC2280	None	None	G1	S1S2	
<i>Helminthoglypta talmadgei</i> Trinity shoulderband	IMGASC2630	None	None	G2	S2	
<i>Iliamna latibracteata</i> California globe mallow	PDMAL0K040	None	None	G2G3	S2	1B.2
<i>Juncus dudleyi</i> Dudley's rush	PMJUN01390	None	None	G5	S1	2B.3
<i>Klamath/North Coast Fall/Winter Run Chinook Salmon River</i> Klamath/North Coast Fall/Winter Run Chinook Salmon River	CARB2332CA	None	None	GNR	SNR	
<i>Klamath/North Coast Interior Headwater Fishless Stream</i> Klamath/North Coast Interior Headwater Fishless Stream	CARB2220CA	None	None	GNR	SNR	
<i>Klamath/North Coast Rainbow Trout Stream</i> Klamath/North Coast Rainbow Trout Stream	CARB2312CA	None	None	GNR	SNR	
<i>Kopsiopsis hookeri</i> small groundcone	PDORO01010	None	None	G4?	S1S2	2B.3
<i>Lewisia cotyledon var. heckneri</i> Heckner's lewisia	PDPOR04052	None	None	G4T3	S3	1B.2
<i>Margaritifera falcata</i> western pearlshell	IMBIV27020	None	None	G4G5	S1S2	
<i>Martes caurina humboldtensis</i> Humboldt marten	AMAJF01012	None	Endangered	G5T1	S1	SSC
<i>Mielichhoferia elongata</i> elongate copper moss	NBMUS4Q022	None	None	G5	S4	4.3
<i>Montia howellii</i> Howell's montia	PDPOR05070	None	None	G3G4	S2	2B.2
<i>Myotis evotis</i> long-eared myotis	AMACC01070	None	None	G5	S3	
<i>Oenothera wolfii</i> Wolf's evening-primrose	PDONA0C1K0	None	None	G2	S1	1B.1
<i>Oncorhynchus clarkii clarkii</i> coast cutthroat trout	AFCHA0208A	None	None	G4T4	S3	SSC
<i>Oncorhynchus mykiss irideus pop. 36</i> summer-run steelhead trout	AFCHA0213B	None	None	G5T4Q	S2	SSC



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California Department of Fish and Wildlife
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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Oncorhynchus tshawytscha</i> pop. 30 chinook salmon - upper Klamath and Trinity Rivers ESU	AFCHA02056	None	Candidate Endangered	G5	S1S2	SSC
<i>Pandion haliaetus</i> osprey	ABNKC01010	None	None	G5	S4	WL
<i>Pekania pennanti</i> fisher - West Coast DPS	AMAJF01021	None	Threatened	G5T2T3Q	S2S3	SSC
<i>Piperia candida</i> white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
<i>Plethodon elongatus</i> Del Norte salamander	AAAAD12050	None	None	G4	S3	WL
<i>Ptilidium californicum</i> Pacific fuzzwort	NBHEP2U010	None	None	G4G5	S3S4	4.3
<i>Rana aurora</i> northern red-legged frog	AAABH01021	None	None	G4	S3	SSC
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
<i>Rhyacotriton variegatus</i> southern torrent salamander	AAAAJ01020	None	None	G3G4	S2S3	SSC
<i>Rorippa columbiae</i> Columbia yellow cress	PDBRA27060	None	None	G3	S2	1B.2
<i>Sanicula tracyi</i> Tracy's sanicle	PDAP1Z0K0	None	None	G4	S4	4.2
<i>Schoenoplectus subterminalis</i> water bulrush	PMCYP0Q1G0	None	None	G4G5	S3	2B.3
<i>Sedum laxum</i> ssp. <i>flavidum</i> pale yellow stonecrop	PDCRA0A0L2	None	None	G5T3Q	S3	4.3
<i>Sidalcea oregana</i> ssp. <i>eximia</i> coast checkerbloom	PDMAL110K9	None	None	G5T1	S1	1B.2
<i>Thermopsis robusta</i> robust false lupine	PDFAB3Z0D0	None	None	G2	S2	1B.2
Upland Douglas Fir Forest Upland Douglas Fir Forest	CTT82420CA	None	None	G4	S3.1	
<i>Vespericola karokorum</i> Karak hesperian	IMGASA4040	None	None	G2	S2	

Record Count: 56