

Camp Creek Coho Habitat Enhancement Design Project (Project ID: 1728175) 2022

Introduction:

The Mid Klamath Watershed Council (Permittee) will implement the Camp Creek Coho Habitat Enhancement Design (Project). The Project will produce final (100%) engineered designs to restore fish spawning and rearing habitats to a 1-mile reach of Camp Creek, a tributary to the Klamath River. The Project will consider instream wood structures, off-channel features, flood plain reconnection, removal or modification to remnant boulder weirs and hatchery infrastructure. The Project is necessary based upon recommendations from federal and state salmonid recovery plans that promote restoration projects designed to address fish passage and to create or restore complex habitat features that provide velocity refuge, pool habitats, and cover in high-priority coastal watersheds.

The Permittee shall not proceed with on the ground implementation until all necessary permits, consultations, and Notice to Proceed are secured. All habitat improvements will follow techniques in the *California Salmonid Stream Habitat Restoration Manual*

Objective(s):

The specific objective of this project is to develop 100% final construction ready engineered design plans to restore natural channel function and floodplain connectivity in Camp Creek, the design will include assess feasibility and develop a plan design to remove or modification to back levees and dikes that includes restoring the natural channel geomorphic processes and floodplain connectivity once the levees and dikes have been removed or set back.

The project will assess a 1-mile reach (24 acres) of Camp Creek to design the most beneficial removal/set back of levees that will increase channel complexity as well as promote floodplain activation in order to optimize summer and over-wintering rearing habitat as well as the quality and quantity of spawning gravel for Coho Salmon. The project will use geomorphic-process based restoration to increase the amount of instream and off-channel summer, winter, and spawning habitat present along Camp Creek.

Project Description:

Location:

The project is located on Camp Creek, approximately 2 miles from its confluence with the Klamath River. The project site is near the town of Orleans in Humboldt

County, California. Project coordinates are: 41.3159478, -123.564508, Township 11 North, Range 5 East, Sections 25 & 26, Orleans 7.5 Minute U.S. Geological Survey (USGS) Quadrangle map.

Project Set Up:

The Permittee staff 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 and consultation with Native American Tribes. Permittee staff will conduct stream flow and water quality monitoring, installation of monitoring wells, groundwater monitoring. Develop a revegetation plan and an invasive plants management plan; and providing other supporting materials as needed for permit acquisition. Permittee staff will support field collection of topographic data, analyze geospatial data, prepare site maps and other maps needed for reporting and permitting.

Engineering and Geologic Subcontractor will conduct all necessary surveys, including but not limited to, characterizing historic watershed and channel disturbances, biologic habitat and species utilization, riparian composition, topography and hydrologic modeling, geomorphic mapping, risk analysis, biological surveys, water quality sampling, and attend TAC meetings.

Excavator Operator will be required to excavate test pits for the subsurface investigation and monitoring well installations.

Archeological Survey Subcontractor will be responsible for performing sensitive cultural resource surveys prior to construction.

Tribal Informal Consultation and Collaboration Representative will be providing input on Tribal cultural perspective and concerns throughout the project.

Materials:

The following materials will be installed during implementation of the Project.

- Groundwater monitoring wells installation material includes PVC pipe & caps, steel cable/hardware, tee post.
- Water level data loggers
- Hydrologic assessment gear including current meter, pressure transducers, ambient pressure gage, staff plate.
- Survey supplies including field notebooks, pen/pencils, flagging, staking
- Waders and boots

Tasks:

Task 1. The Permittee will complete project management and administration of contract agreement, design meeting reviews, communicating with subcontractors and partners, payroll, tracking budgets, ensuring compliance with standard business practices, ensuring environmental compliance, adhering to proposed timelines and achievement of project objectives, and reporting.

Task 2. The Permittee will convene a Technical Advisory Committee (TAC) for design development. The Permittee will conduct 3 design meetings for TAC review.

- Meeting 1: 30% (Concept) Design Review; Meeting to present the concept (30%) design for the project, answer questions, receive comments and guidance from stakeholders, and to identify any additional project components or constraints.
- Meeting 2: 65% (Intermediate) Design Review; Meeting to present draft (65%) designs of the project design, answer questions, and receive comments.
- Meeting 3: 90% (Final Design) Meeting to present draft (90%) designs of the project design, answer questions, and receive comments. Discuss technical review comments and/or coordinate for future implementation.

Task 3. The Permittee will perform the fieldwork and data entry for Site Characterizations, Water Level and Water Quality Monitoring. Develop an Invasive species prevention plan and the Revegetation plan. Develop a Monitoring plan that will accompany the 100% design plan set.

Task 4. Engineering Subcontractor will provide topographic survey and basemap preparation, perform geomorphic evaluations, conduct a large wood risk assessment, assist Permittee with water level and water quality monitoring interpretation to identify feasible enhancement options, perform hydrologic, hydraulic, and fluvial geomorphic analyses, and develop the engineering plans and basis of design report. The Project Engineer will be performing the geomorphic assessment, project design development, hydraulic modeling, and conducting force-balance calculations for engineered log structures. The Project Engineer will prepare the project basemap and preparation of project design drawings..

Task 5. The Equipment operator will excavate the test pits for geological and geotechnical investigations to analyze the soil and location of groundwater of the site, characterize the site.

Deliverables:

The project will deliver 100% design and BOD. All data products associated with topographic, hydrological, and geotechnical investigations including revegetation plan site map and design drawings for areas of habitat features.

Timelines:

Geotechnical work will be from 6/1/2023 to 8/30/2025
100% designs will be complete by 12/31/2025

Additional Requirements:


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


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

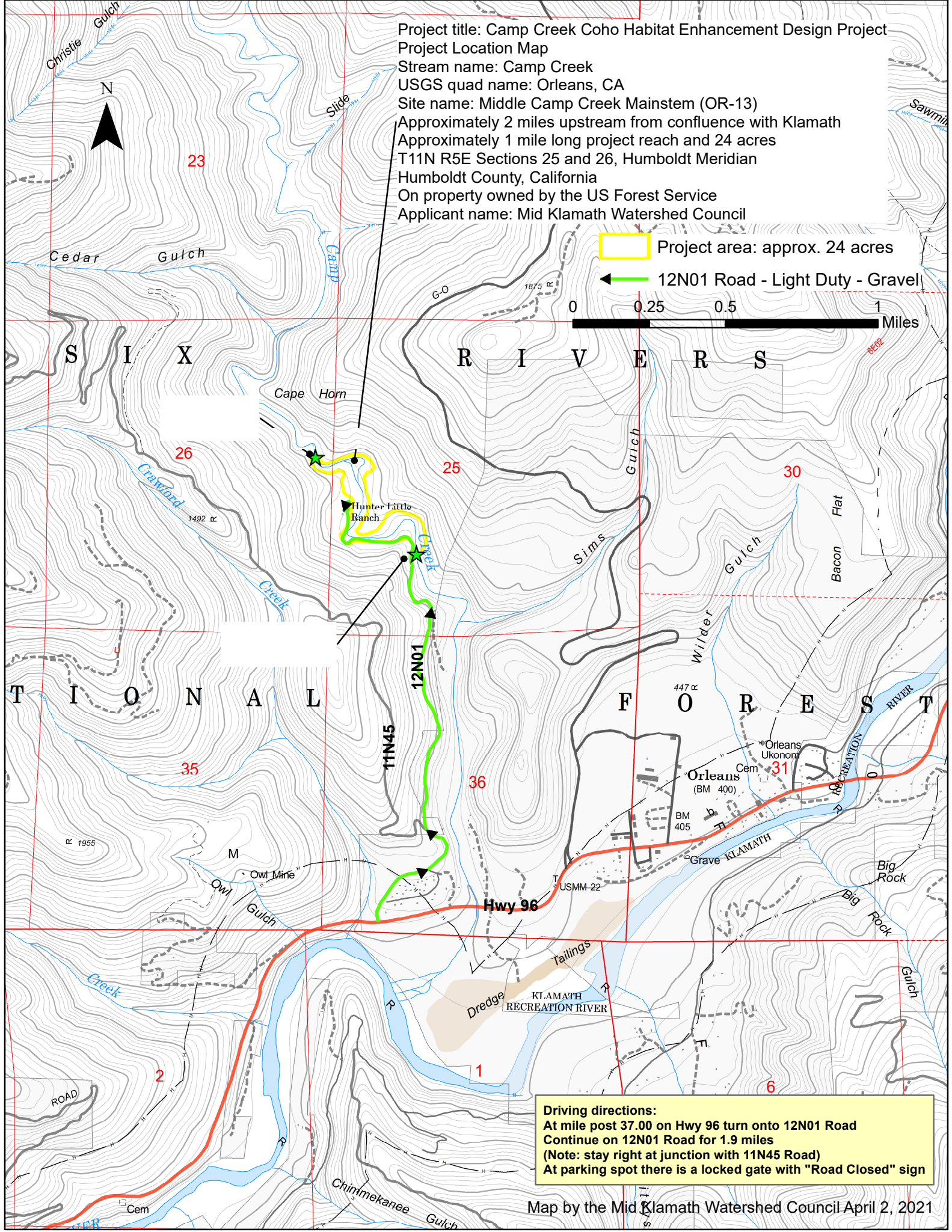
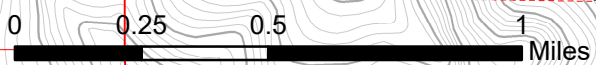
All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out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

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

Project title: Camp Creek Coho Habitat Enhancement Design Project
 Project Location Map
 Stream name: Camp Creek
 USGS quad name: Orleans, CA
 Site name: Middle Camp Creek Mainstem (OR-13)
 Approximately 2 miles upstream from confluence with Klamath
 Approximately 1 mile long project reach and 24 acres
 T11N R5E Sections 25 and 26, Humboldt Meridian
 Humboldt County, California
 On property owned by the US Forest Service
 Applicant name: Mid Klamath Watershed Council

 Project area: approx. 24 acres

 12N01 Road - Light Duty - Gravel

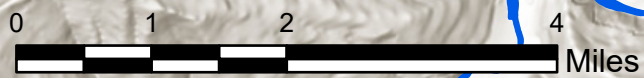


Driving directions:
 At mile post 37.00 on Hwy 96 turn onto 12N01 Road
 Continue on 12N01 Road for 1.9 miles
 (Note: stay right at junction with 11N45 Road)
 At parking spot there is a locked gate with "Road Closed" sign

Project title: Camp Creek
Coho Habitat
Enhancement Design
Project
Watershed map
Applicant name: Mid
Klamath Watershed
Council
USGS quad: Orleans, CA
Stream name: Camp
Creek



- Streams
- Project area: 24 acres
- Camp Creek watershed: 42.1 miles²



CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE RareFind

Query Summary:

Quad IS (Orleans (4112335) OR Orleans Mtn. (4112334) OR Fish Lake (4112336) OR Bark Shanty Gulch (4112345) OR Lonesome Ridge (4112346) OR Somes Bar (4112344)
 OR Weitchpec (4112326) OR Hopkins Butte (4112325) OR Salmon Mtn. (4112324))

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CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Accipiter gentilis	northern goshawk	Birds	ABNKC12060	433	2	None	None	G5	S3	null	BLM_S-Sensitive, CDF_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	North coast coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest
Ancotrema voyanum	hooded lancetooth	Mollusks	IMGAS36130	173	24	None	None	G1G2	S1S2	null	null	Oldgrowth, Riparian forest, Talus slope
Anomobryum julaceum	slender silver moss	Bryophytes	NBMUS80010	13	1	None	None	G5?	S2	4.2	null	Broadleaved upland forest, Lower montane coniferous forest, North coast coniferous forest
Aplodontia rufa humboldtiana	Humboldt mountain beaver	Mammals	AMAF01017	28	2	None	None	G5TNR	SNR	null	null	Coastal scrub, Redwood, Riparian forest
Ardea herodias	great blue heron	Birds	ABNGA04010	156	7	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Ascaphus truei	Pacific tailed frog	Amphibians	AAABA01010	491	13	None	None	G4	S3S4	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Aquatic, Klamath/North coast flowing waters, Lower montane coniferous forest, North coast coniferous forest, Redwood, Riparian forest
Astragalus umbraticus	Bald Mountain milk-vetch	Dicots	PDFAB0F990	33	9	None	None	G4	S2	2B.2	null	Cismontane woodland, Lower montane coniferous forest
Atractelmis wawona	Wawona riffle beetle	Insects	IICOL58010	80	2	None	None	G3	S1S2	null	null	Aquatic
Bombus occidentalis	western bumble bee	Insects	IIHYM24250	306	4	None	None	G2G3	S1	null	USFS_S-Sensitive	null
Bombus suckleyi	Suckley's cuckoo bumble bee	Insects	IIHYM24350	4	1	None	None	G2G3	S1	null	null	null
Bonasa umbellus	ruffed grouse	Birds	ABNLC11010	5	1	None	None	G5	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	North coast coniferous forest, Riparian forest, Upper montane coniferous forest
Carex halliana	Oregon sedge	Monocots	PMCYP035M0	17	1	None	None	G4	S2	2B.3	null	Meadow & seep, Subalpine coniferous forest, Upper montane coniferous forest, Wetland
Carex hystericina	porcupine sedge	Monocots	PMCYP036D0	4	1	None	None	G5	S2	2B.1	null	Freshwater marsh, Marsh & swamp, Wetland
Carex praticola	northern meadow sedge	Monocots	PMCYP03B20	14	1	None	None	G5	S2	2B.2	null	Meadow & seep, Wetland
Coptis laciniata	Oregon goldthread	Dicots	PDRAN0A020	122	3	None	None	G4?	S3?	4.2	null	Meadow & seep, North coast

												coniferous forest, Wetland
Cornus unalaschkensis	bunchberry	Dicots	PDCOR010F0	11	1	None	None	G5	S2	2B.2	null	Bog & fen, Meadow & seep, North coast coniferous forest
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	635	3	None	None	G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Broadleaved upland forest, Chaparral, Chenopod scrub, Great Basin grassland, Great Basin tree woodland, Lower montane coniferous forest, Meadow & seep, Mojavean desert scrub, Riparian forest, Riparian woodland, Sonoran desert scrub, Sonoran thorn woodland, Upper montane coniferous forest, Valley & foothill grassland
Cottus klamathensis polyporus	Lower Klamath marbled sculpin	Fish	AFC4E02153	20	3	None	None	G4T2T4	S2S4	null	CDFW_SSC-Species of Special Concern	Aquatic
Cypseloides niger	black swift	Birds	ABNUA01010	46	1	None	None	G4	S2	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, NABCI_YWL-Yellow Watch List, USFWS_BCC-Birds of Conservation Concern	null
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1404	1	None	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Entosphenus similis	Klamath River lamprey	Fish	AFBAA02140	14	1	None	None	G3G4Q	S3	null	AFS_TH-Threatened, CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	Aquatic, Klamath/North coast flowing waters
Epilobium oreganum	Oregon fireweed	Dicots	PDONA060P0	62	1	None	None	G2	S2	1B.2	USFS_S-Sensitive	Bog & fen, Lower montane coniferous forest, Meadow & seep, Ultramafic, Upper montane coniferous forest, Wetland
Erythronium oregonum	giant fawn lily	Monocots	PMLIL0U0C0	37	2	None	None	G5	S2	2B.2	null	Cismontane woodland, Meadow & seep, Ultramafic
Erythronium revolutum	coast fawn lily	Monocots	PMLIL0U0F0	172	5	None	None	G4G5	S3	2B.2	null	Bog & fen, Broadleaved upland forest, North coast coniferous forest, Wetland
Falco peregrinus anatum	American peregrine falcon	Birds	ABNKD06071	73	2	Delisted	Delisted	G4T4	S3S4	null	CDF_S-Sensitive, CDFW_FP-Fully Protected	null

<i>Gentiana plurisetosa</i>	Klamath gentian	Dicots	PDGEN060V0	22	2	None	None	G2G3	S2	1B.3	null	Lower montane coniferous forest, Meadow & seep, Upper montane coniferous forest, Wetland
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	Dicots	PDPLM040B6	91	1	None	None	G5T3	S2	1B.2	null	Chaparral, Coastal bluff scrub, Coastal prairie, Valley & foothill grassland
<i>Gonidea angulata</i>	western ridged mussel	Mollusks	IMBIV19010	157	10	None	None	G3	S1S2	null	null	Aquatic
<i>Haliaeetus leucocephalus</i>	bald eagle	Birds	ABNKC10010	332	2	Delisted	Endangered	G5	S3	null	BLM_S-Sensitive, CDF_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern, USFS_S-Sensitive	Lower montane coniferous forest, Oldgrowth
<i>Helminthoglypta hertleini</i>	Oregon shoulderband	Mollusks	IMGASC2280	16	1	None	None	G3Q	S1S2	null	null	Riparian forest, Talus slope
<i>Helminthoglypta talmadgei</i>	Trinity shoulderband	Mollusks	IMGASC2630	21	1	None	None	G2	S2	null	null	Limestone, Lower montane coniferous forest, Riparian forest
<i>Iliamna latibracteata</i>	California globe mallow	Dicots	PDMAL0K040	40	4	None	None	G2G3	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral, Lower montane coniferous forest, North coast coniferous forest, Riparian scrub
<i>Juncus dudleyi</i>	Dudley's rush	Monocots	PMJUN01390	12	1	None	None	G5	S1	2B.3	null	Lower montane coniferous forest, Wetland
Klamath/No Coast Spring Run Chinook/Summer Steelhead Stream	Klamath/No Coast Spring Run Chinook/Summer Steelhead Stream	Inland Waters	CARB2333CA	1	1	None	None	GNR	SNR	null	null	null
Klamath/North Coast Fall/Winter Run Chinook Salmon River	Klamath/North Coast Fall/Winter Run Chinook Salmon River	Inland Waters	CARB2332CA	2	1	None	None	GNR	SNR	null	null	null
Klamath/North Coast Interior Headwater Fishless Stream	Klamath/North Coast Interior Headwater Fishless Stream	Inland Waters	CARB2220CA	3	2	None	None	GNR	SNR	null	null	null
Klamath/North Coast Rainbow Trout Stream	Klamath/North Coast Rainbow Trout Stream	Inland Waters	CARB2312CA	9	4	None	None	GNR	SNR	null	null	null
<i>Kopsiopsis hookeri</i>	small groundcone	Dicots	PDORO01010	21	2	None	None	G4?	S1S2	2B.3	null	North coast coniferous forest
<i>Lewisia cotyledon</i> var. <i>heckneri</i>	Heckner's lewisia	Dicots	PDPOR04052	41	1	None	None	G4T3	S3	1B.2	BLM_S-Sensitive, SB_UCSC-UC Santa Cruz	Lower montane coniferous forest
<i>Lomatium martindalei</i>	Coast Range lomatium	Dicots	PDAP11B140	9	1	None	None	G5	S2	2B.3	null	Coastal bluff scrub, Lower montane coniferous forest, Meadow & seep, Ultramafic
<i>Margaritifera falcata</i>	western pearlshell	Mollusks	IMBIV27020	78	6	None	None	G4G5	S1S2	null	null	Aquatic
<i>Martes caurina humboldtensis</i>	Humboldt marten	Mammals	AMAJF01012	44	7	Threatened	Endangered	G4G5T1	S1	null	CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	North coast coniferous forest, Oldgrowth, Redwood
<i>Mielichhoferia elongata</i>	elongate copper moss	Bryophytes	NBMUS4Q022	20	1	None	None	G5	S3S4	4.3	USFS_S-Sensitive	Cismontane woodland
<i>Monadenia marmorotis</i>	marble sideband	Mollusks	IMGASC7060	3	1	None	None	G1	S1	null	null	Oldgrowth, Riparian forest
<i>Montia howellii</i>	Howell's montia	Dicots	PDPOR05070	123	1	None	None	G3G4	S2	2B.2	null	Meadow & seep, North coast coniferous forest, Vernal pool, Wetland
<i>Oenothera wolffii</i>	Wolf's evening-primrose	Dicots	PDONA0C1K0	29	1	None	None	G2	S1	1B.1	SB_BerrySB-Berry Seed Bank	Coastal bluff scrub, Coastal

												dunes, Coastal prairie
Oncorhynchus clarkii clarkii	coast cutthroat trout	Fish	AFCHA0208A	45	1	None	None	G5T4	S3	null	AFS_VU-Vulnerable, CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	Aquatic, Klamath/North coast flowing waters
Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	Fish	AFCHA0213B	20	4	None	Candidate Endangered	G5T4Q	S2	null	CDFW_SSC-Species of Special Concern	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters
Oncorhynchus tshawytscha pop. 30	chinook salmon - upper Klamath and Trinity Rivers ESU	Fish	AFCHA02056	6	2	Candidate	Threatened	G5T2Q	S2	null	CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	Aquatic, Klamath/North coast flowing waters
Pandion haliaetus	osprey	Birds	ABNKC01010	504	10	None	None	G5	S4	null	CDF_S-Sensitive, CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest
Pekania pennanti	Fisher	Mammals	AMAJF01020	555	34	None	None	G5	S2S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	North coast coniferous forest, Oldgrowth, Riparian forest
Piperia candida	white-flowered rein orchid	Monocots	PMORC1X050	222	6	None	None	G3?	S3	1B.2	null	Broadleaved upland forest, Lower montane coniferous forest, North coast coniferous forest, Ultramafic
Plethodon elongatus	Del Norte salamander	Amphibians	AAAAD12050	151	15	None	None	G4	S3	null	CDFW_WL-Watch List, IUCN_NT-Near Threatened	Oldgrowth
Prosartes parvifolia	Siskiyou bells	Monocots	PMLIL0R014	14	1	None	None	G5T2?	S2	1B.2	USFS_S-Sensitive	Lower montane coniferous forest, Upper montane coniferous forest
Ptilidium californicum	Pacific fuzzwort	Bryophytes	NBHEP2U010	177	14	None	None	G4G5	S3S4	4.3	BLM_S-Sensitive	Lower montane coniferous forest, Upper montane coniferous forest
Rana boylei	foothill yellow-legged frog	Amphibians	AAABH01050	2478	20	None	Endangered	G3	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened, USFS_S-Sensitive	Aquatic, Chaparral, Cismontane woodland, Coastal scrub, Klamath/North coast flowing waters, Lower montane coniferous forest, Meadow & seep, Riparian forest, Riparian woodland, Sacramento/San Joaquin flowing waters
Rana cascadae	Cascades frog	Amphibians	AAABH01060	413	1	None	Candidate Endangered	G3G4	S3	null	CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened, USFS_S-Sensitive	Aquatic, Lower montane coniferous forest
Rhyacotriton variegatus	southern torrent salamander	Amphibians	AAAAJ01020	416	25	None	None	G3G4	S2S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	Lower montane coniferous forest, Oldgrowth, Redwood, Riparian forest
Rorippa columbiae	Columbia yellow cress	Dicots	PDBRA27060	26	1	None	None	G3	S2	1B.2	USFS_S-Sensitive	Alkali playa, Lower montane coniferous forest, Meadow & seep, Vernal pool, Wetland
Schoenoplectus subterminalis	water bulrush	Monocots	PMCYP0Q1G0	32	1	None	None	G5	S3	2B.3	IUCN_LC-Least Concern	Bog & fen, Marsh & swamp, Wetland
Sedum flavidum	pale yellow stonecrop	Dicots	PDCRA0A0L2	67	4	None	None	G3	S3	4.3	null	Broadleaved upland forest, Chaparral,

													Cismontane woodland, Lower montane coniferous forest, Ultramafic, Upper montane coniferous forest
Sidalcea oregana ssp. eximia	coast checkerbloom	Dicots	PDMAL110K9	19	2	None	None	G5T1	S1	1B.2	null		Lower montane coniferous forest, Meadow & seep, North coast coniferous forest, Wetland
Silene hookeri	Hooker's catchfly	Dicots	PDCAR0U2M0	31	6	None	None	G4	S2	2B.2	null		Chaparral, Cismontane woodland, Lower montane coniferous forest, Ultramafic
Silene marmorensis	Marble Mountain campion	Dicots	PDCAR0U0Z0	41	10	None	None	G2	S2	1B.2	null		Broadleaved upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Ultramafic
Thermopsis robusta	robust false lupine	Dicots	PDFAB3Z0D0	104	43	None	None	G2	S2	1B.2	USFS_S-Sensitive		Broadleaved upland forest, North coast coniferous forest, Ultramafic
Vespericola karokorum	Karok hesperian	Mollusks	IMGASA4040	22	22	None	None	G2	S2	null	IUCN_DD-Data Deficient		Riparian forest