

Coulborn Creek Salmonid Habitat Assessment and Enhancement Planning and Design Project (Project ID: 1727817)

2022

Introduction:

The Mattole Salmon Group (Permittee) will develop 100% constructible engineered and non-engineered plans and designs for wood loading in most of anadromous reaches of the Coulborn Creek watershed. The 100% design plans will result in improved instream habitat, rearing and spawning habitat, channel and pool cover, hydraulic diversity, floodplain inundation, and restored fluvial geomorphic processes. The specific feature design plans for construction will be developed based upon detailed biologic, geomorphic, geologic, hydraulic, and hydrologic characterization and 2017 CDFW habitat typing reports, spawning surveys, and Large Wood (LW) surveys of Coulborn Creek. The LW habitat designs will be prepared in consultation with the Project Team and a Technical Advisory Committee (TAC).

The goal of this project is to design instream wood structures that not only provide immediate habitat for coho populations in the form of improved pool cover, fish habitat, and channel complexity but also to provide the stream with increased large woody debris it requires to restore full function to its hydraulic diversity and fluvial geomorphic processes such as streambed material retention, sediment sorting, and stream connectivity to high flow refugia.

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* (Vol. I, Section VII <https://www.wildlife.ca.gov/Grants/FRGP/Guidance>)

Does the project involve the construction of beaver analogs?

Yes or No

Is the project located in a tidally influenced [California coastal zone](#)?

Yes or No

Objective(s):

The objective of this project is to develop 100% design plans ready to implement along 2 miles of Coulborn Creek. Plans include 100% conceptual designs for at least 60 constructed log jams and up to four (4) engineered LW structures.

Designs will be based on hydraulic, biologic, riparian, and geomorphic characterization using our project team of scientists and engineers and a technical advisory committee. The designed instream wood structures will provide immediate habitat for coho populations in the form of improved pool cover, fish habitat, and channel complexity as well as provide increased large woody debris to restore full function to its hydraulic diversity and fluvial geomorphic processes such as streambed material retention, sediment sorting, and stream connectivity to high flow refugia.

Project Description:

Location:

This project is located on Coulborn Creek, tributary to Indian Creek in the County of Mendocino, State of California. Coulborn Creek is located off the mainstem of Indian Creek, roughly 8.1 miles upstream of the Indian Creek confluence with South Fork Eel River. The project is located on a 2-mile reach, extending from the confluence with Indian Creek in the Bear Harbor 7.5 Minute U.S. Geological Survey Quadrangle map, Township 05 South, Range 02 East, and Sections 25 and 36. The center point for the project reach is 39.973839 north latitude^o, -123.896945^o west longitude.

Project Set Up:

Permittee will provide all grant and contract oversight and administration tasks including but not limited to obtaining permits, securing contracts (e.g. grantors, subcontractors, landowner, etc.), scheduling, implementation oversight, invoicing, reporting, and agency and landowner communications and lead Technical Advisory Committee (TAC) meetings. Permittee staff will conduct geological and geotechnical investigations using an excavator to dig subsurface exploration pits on streambank terraces in the upper reaches of the project site.

Subcontractor Pacific Watershed Associates (PWA) staff 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.

Subcontractor (Forester) Baldwin, Blomstrom, Wilkinson and Associates, Inc (BBWA) will conduct forest mensuration surveys and silvicultural treatments. BBWA (Archeologist) will conduct archeology surveys

Subcontractor California Conservation Corps (CCC) will conduct brush and tree limbs removal for the topographic surveys and hand dig test pits for geotechnical investigations.

Materials:

Permittee supplies include, but are not limited to write in rain paper, printer toner, writing implements, Mylar overlay, plastic film laminate, laminator, large format maps printed meeting handouts, fastening supplies, and other meeting supplies. Permittee will procure funds necessary for securing the California Department of Fish and Wildlife (CDFW) 1600 LSAA permit for excavation of test pits and will rent a hydraulic excavator to dig test pits for geotechnical investigations.

PWA field equipment includes but is not limited to, notebooks, maps, flagging, measuring tapes, digital tablets, GPS devices, cameras, work trucks, first aid kits, cell booster (for communications remote in no-cell areas), waders, survey gear, including total station, auto level, hip chain, measuring tapes, stadia rod, kick-net, water quality meter, waders/boots/drysuit/mask and snorkel, laser distance measurer, brushing tools. Hydrologic assessment gear, including current meter, pressure transducers, ambient atmospheric pressure gage, staff plates, construction materials for stream gaging stations, and waders

CCC field equipment includes but is not limited to, hand augers, shovels, pick, and soil sample containers.

Tasks:

Task 1. Geological and geotechnical investigations

PWA Associate Scientist (Engineering Geologist) and Staff Scientist will provide focused geologic and geotechnical surveys to characterize the geologic and engineering properties of the project's soils. Surface and/or subsurface investigations will be conducted within the prioritized stream reaches. Permittee will provide an operator and hydraulic backhoe to test sample subsurface materials along streambanks within the prioritized stream reaches. Approximately four test pits will be dug on dry slopes and terraces, each approximately 3 feet by 3 feet in length and 3 feet to 5 feet in depth. Test pits will be filled in afterwards with removed material. All threats to the design project from fluvial erosion, site soils properties, mass wasting processes, and land use will be identified. A qualitative description of sediment supply and composition, mode of transport, and an assessment of potential impacts of accelerated sedimentation will be performed. Permittee will provide an operator and hydraulic backhoe to be utilized to sample subsurface materials along the streambanks within the prioritized stream reaches. Soil investigations will inform the design engineer as to the location and quantity of LWM, utilization of onsite soil materials for construction of streambanks and fills, parameters for the integration of LW structures into the habitat enhancement design, character of stockpiled materials, foundation, and structure design recommendations. Depth to bedrock and groundwater will be identified where observed. Lab testing of selected samples will be conducted to identify materials properties such as grain size distribution,

bulk density, penetration resistance, plasticity index, soil internal friction angle, and shear strength.

Deliverables:

The project will deliver 100% design and BOD. All data products associated with Geological and geotechnical investigations including preliminary geological and geotechnical memorandum, subsurface lab materials report, depth to groundwater elevations report, stream geomorphology, hydrology, shallow earth, and geologic reports for areas of proposed large wood structures.

Timelines:

Geotechnical investigation (test pit excavations) work: 9/1/2024 – 10/31/24

Additional Requirements:

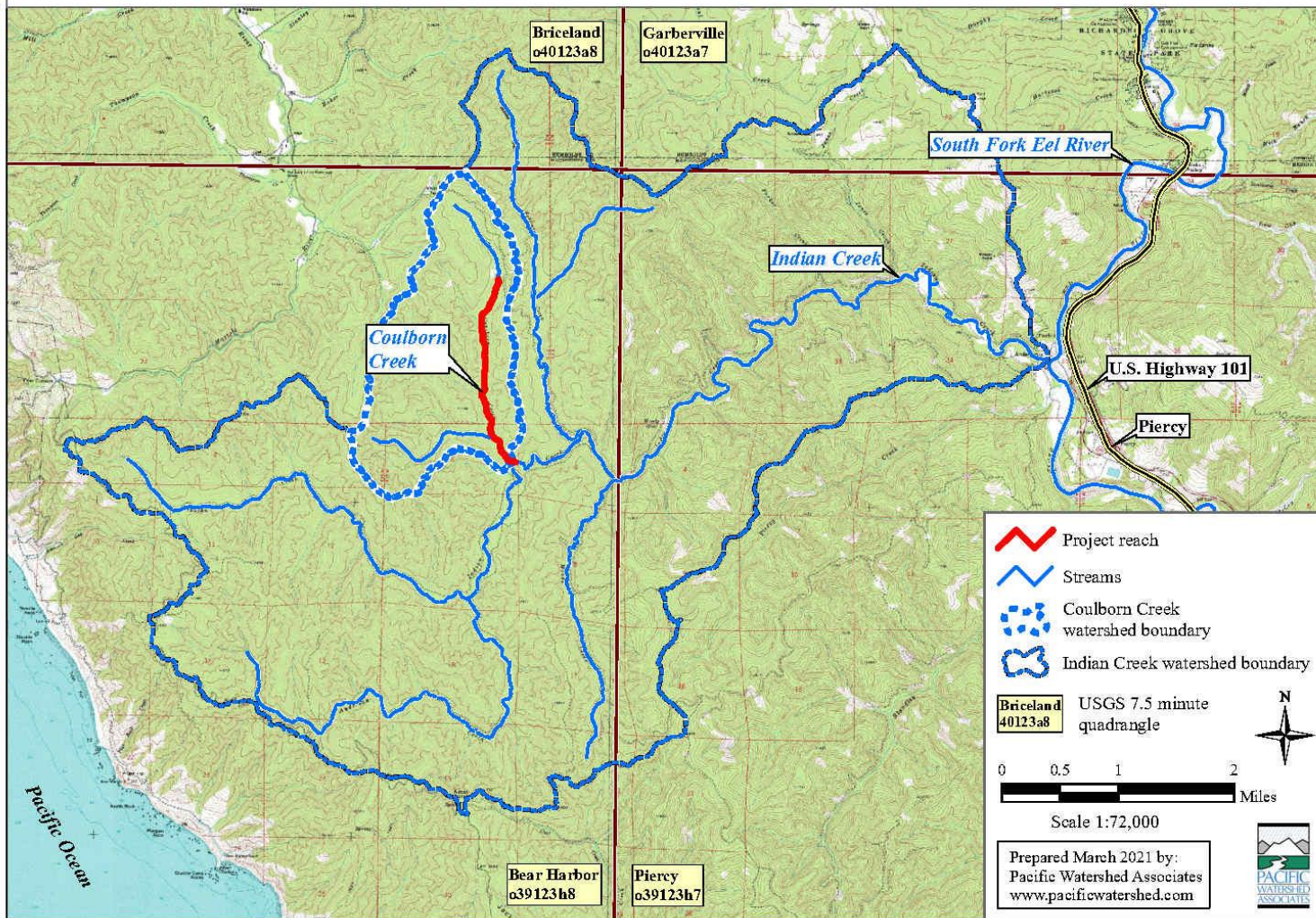
The Permittee will not proceed with on the ground implementation until all necessary permits and consultations are secured. Work in flowing streams is restricted per the United States Army Corp of Engineers (USACE) Regional General Permit. Actual project start and end dates, within this timeframe, are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

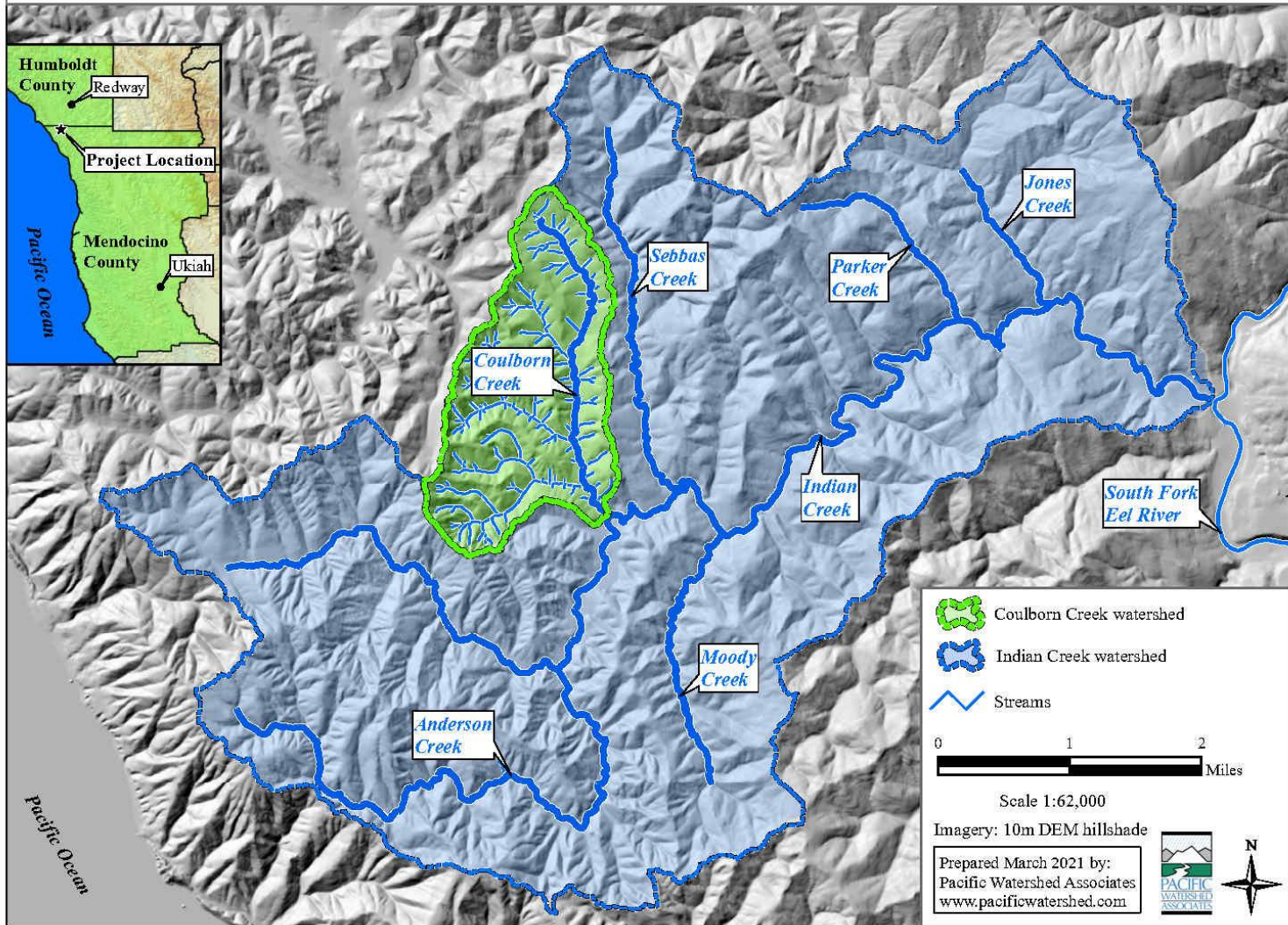
All equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of aquatic invasive species (AIS). When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out 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.

Map 1. Project Location Topographic Map, Coulborn Creek Wood Loading Design Project, Mendocino County, California.
(Briceland and Bear Harbor USGS 7.5' quadrangles). Grantee: Mattole Salmon Group



Map 2. Watershed Map for Coulborn Creek Wood Loading Design Project, Mendocino County, California. Grantee: Mattole Salmon Group



CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE *RareFind*

Query Summary:

Quad **IS** (Bear Harbor (3912388)) **OR** Piercy (3912387) **OR** Shelter Cove (4012411) **OR** Briceland (4012318) **OR** Garberville (4012317) **OR** Hales Grove (3912377) **OR** Mistake Point (3912378))

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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 cooperii	Cooper's hawk	Birds	ABNKC12040	118	1	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Cismontane woodland, Riparian forest, Riparian woodland, Upper montane coniferous forest
Antrozous pallidus	pallid bat	Mammals	AMACC10010	420	2	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Arborimus pomom	Sonoma tree vole	Mammals	AMAFF23030	222	6	None	None	G3	S3	null	CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	North coast coniferous forest, Oldgrowth, Redwood
Ascaphus truei	Pacific tailed frog	Amphibians	AAABA01010	491	10	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 agnicidus	Humboldt County milk-vetch	Dicots	PDFAB0F080	69	7	None	Endangered	G2	S2	1B.1	SB_BerrySB-Berry Seed Bank, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Broadleaved upland forest, North coast coniferous forest
Bombus caliginosus	obscure bumble bee	Insects	IIHYM24380	181	5	None	None	G2G3	S1S2	null	IUCN_VU-Vulnerable	null
Bombus occidentalis	western bumble bee	Insects	IIHYM24250	306	4	None	None	G2G3	S1	null	USFS_S-Sensitive	null
Calamagrostis foliosa	leafy reed grass	Monocots	PMPOA170C0	22	7	None	Rare	G3	S3	4.2	null	Coastal bluff scrub, North coast coniferous forest
Cardamine angulata	seaside bittercress	Dicots	PDBRA0K010	38	1	None	None	G4G5	S3	2B.1	null	Lower montane coniferous forest, North coast coniferous forest, Wetland
Carex arcta	northern clustered sedge	Monocots	PMCYP030X0	13	1	None	None	G5	S1	2B.2	IUCN_LC-Least Concern	Bog & fen, North coast coniferous forest, Wetland
Castilleja litoralis	Oregon coast paintbrush	Dicots	PDSCR0D012	44	9	None	None	G3	S3	2B.2	null	Coastal bluff scrub, Coastal dunes, Coastal scrub
Castilleja mendocinensis	Mendocino Coast paintbrush	Dicots	PDSCR0D3N0	52	2	None	None	G2	S2	1B.2	BLM_S-Sensitive	Closed-cone coniferous forest, Coastal bluff scrub,

												Coastal dunes, Coastal prairie, Coastal scrub
Clarkia amoena ssp. whitneyi	Whitney's farewell-to-spring	Dicots	PDONA05025	8	2	None	None	G5T1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley	Coastal bluff scrub, Coastal scrub
Coptis laciniata	Oregon goldthread	Dicots	PDRAN0A020	122	2	None	None	G4?	S3?	4.2	null	Meadow & seep, North coast coniferous forest, Wetland
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	635	2	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 scrub, Joshua 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
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1404	3	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
Erethizon dorsatum	North American porcupine	Mammals	AMAFJ01010	523	2	None	None	G5	S3	null	IUCN_LC-Least Concern	Broadleaved upland forest, Cismontane woodland, Closed-cone coniferous forest, Lower montane coniferous forest, North coast coniferous forest, Upper montane coniferous forest
Erythronium revolutum	coast fawn lily	Monocots	PMLIL0U0F0	172	2	None	None	G4G5	S3	2B.2	null	Bog & fen, Broadleaved upland forest, North coast coniferous forest, Wetland
Eumetopias jubatus	Steller sea lion	Mammals	AMAJC03010	38	2	Delisted	None	G3	S2	null	IUCN_EN-Endangered, MMC_SSC-Species of Special Concern	Marine intertidal & splash zone communities, Protected deepwater coastal communities, Rock shore
Gilia capitata ssp. pacifica	Pacific gilia	Dicots	PDPLM040B6	91	4	None	None	G5T3	S2	1B.2	null	Chaparral, Coastal bluff scrub, Coastal

												prairie, Valley & foothill grassland
Hesperocyparis pygmaea	pygmy cypress	Gymnosperms	PGCUP04032	37	1	None	None	G1	S1	1B.2	BLM_S-Sensitive, SE_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Closed-cone coniferous forest
Horkelia marinensis	Point Reyes horkelia	Dicots	PDROS0W0B0	36	1	None	None	G2	S2	1B.2	null	Coastal dunes, Coastal prairie, Coastal scrub
Lasthenia californica ssp. macrantha	perennial goldfields	Dicots	PDAST5L0C5	59	1	None	None	G3T2	S2	1B.2	BLM_S-Sensitive	Coastal bluff scrub, Coastal dunes, Coastal scrub
Lathyrus palustris	marsh pea	Dicots	PDFAB250P0	13	1	None	None	G5	S2	2B.2	null	Bog & fen, Coastal prairie, Coastal scrub, Lower montane coniferous forest, Marsh & swamp, North coast coniferous forest, Wetland
Mitellastrca caulescens	leafy-stemmed mitrewort	Dicots	PDSAX0N020	21	2	None	None	G5	S4	4.2	null	Broadleaved upland forest, Lower montane coniferous forest, Meadow & seep, North coast coniferous forest
Montia howellii	Howell's montia	Dicots	PDPOR05070	123	1	None	None	G3G4	S2	2B.2	null	Meadow & seep, North coast coniferous forest, Vernal pool, Wetland
Myotis evotis	long-eared myotis	Mammals	AMACC01070	139	1	None	None	G5	S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern, WBWG_M-Medium Priority	null
Myotis thysanodes	fringed myotis	Mammals	AMACC01090	86	1	None	None	G4	S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	null
Myotis yumanensis	Yuma myotis	Mammals	AMACC01020	265	1	None	None	G5	S4	null	BLM_S-Sensitive, IUCN_LC-Least Concern, WBWG_LM-Low-Medium Priority	Lower montane coniferous forest, Riparian forest, Riparian woodland, Upper montane coniferous forest
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	Fish	AFCHA02032	10	3	Threatened	Threatened	G5T2Q	S2	null	AFS_TH-Threatened	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters
Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	Fish	AFCHA0213B	20	1	None	Candidate Endangered	G5T4Q	S2	null	CDFW_SSC-Species of Special Concern	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters
Pandion haliaetus	osprey	Birds	ABNKC01010	504	2	None	None	G5	S4	null	CDF_S-Sensitive, CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest
Pekania pennanti	Fisher	Mammals	AMAJF01020	555	1	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	25	None	None	G3?	S3	1B.2	null	Broadleaved upland forest, Lower montane coniferous forest, North coast coniferous forest, Ultramafic
Rana aurora	northern red-	Amphibians	AAABH01021	292	2	None	None	G4	S3	null	CDFW_SSC-	Klamath/North

	legged frog											Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	coast flowing waters, Riparian forest, Riparian woodland
Rana boylei	foothill yellow-legged frog	Amphibians	AAABH01050	2478	29	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	
Rhyacotriton variegatus	southern torrent salamander	Amphibians	AAAAJ01020	416	9	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	
Sidalcea malachroides	maple-leaved checkerbloom	Dicots	PDMAL110E0	136	3	None	None	G3	S3	4.2	null	Broadleaved upland forest, Coastal prairie, Coastal scrub, North coast coniferous forest, Riparian forest	
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	Dicots	PDMAL110F9	60	2	None	None	G5T2	S2	1B.2	null	Coastal bluff scrub, Coastal prairie, North coast coniferous forest	
Taricha rivularis	red-bellied newt	Amphibians	AAAAF02020	136	5	None	None	G2	S2	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Broadleaved upland forest, North coast coniferous forest, Redwood, Riparian forest, Riparian woodland	
Thermopsis robusta	robust false lupine	Dicots	PDFAB3Z0D0	104	2	None	None	G2	S2	1B.2	USFS_S-Sensitive	Broadleaved upland forest, North coast coniferous forest, Ultramafic	
Usnea longissima	Methuselah's beard lichen	Lichens	NLLEC5P420	206	13	None	None	G4	S4	4.2	BLM_S-Sensitive	Broadleaved upland forest, North coast coniferous forest, Oldgrowth, Redwood	