

Rail Dump Gulch Fish Passage and Habitat Improvement Design Project (Project ID: 1727957) 2022

Introduction:

This project will identify constraints and design options to improve fish passage, restore off-channel rearing habitat for juvenile Coho Salmon and other salmonids, and provide high flow refugia for juvenile and adult salmonids in Rail Dump Gulch. The project work tasks will include biological, geomorphic, and hydrological characterization of the project area and an evaluation of the risks and potential impacts associated with different design options. Designs will be developed in coordination with the Project Team, composed of Trout Unlimited (TU), CA Dept. of Fish and Wildlife (CDFW), Pacific Watershed Associates (PWA), CA State Parks, and potentially local tribes. The 100% engineered design plans will include channel improvements, stream crossing upgrading, and instream and floodplain habitat design features. The designs will provide all information necessary for implementation and permitting.

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* (Volume 2-Part XII).

<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

Project Description:

Objective:

The objective of this project is to develop 100% engineered design plan for an upgraded channel crossing at the M1 road, and off-channel, floodplain and channel habitat improvements that is ready to move into an implementation phase.

Location:

The Rail Dump Gulch confluence with Big River is located 4.3 miles upstream from the Pacific Ocean. This project is located at a single site along the M1 Road in the Mendocino Headlands State Park Big River Unit. This site is approximately 3 miles east along the M1 from the yellow State Parks gate at the end of the parking lot. The Mendocino Headlands State Park Big River Unit is located southeast of the town of Mendocino, California along Highway 1. Project coordinates at crossing are: 39.295136N, -123.742717W.

Project Set Up:

Trout Unlimited (TU) 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.), project scheduling, invoicing, reporting, and agency and landowner coordination. All reporting and billing will be pursuant to the grant and regulatory guidelines. Upon final execution of the Grant and prior to receiving a Final Notice to Proceed, TU will deliver the landowner access agreement, subcontracts, and assure all permits are finalized. This task will occur throughout the life of the project. TU Project Manager will be available on a full-time basis to oversee all aspects of project management, and will be supported by other TU Project Managers. The TU Operations and Grant Manager will assist with grant compliance and reporting, and the TU Field Accountants will assist with processing invoices and vendor payments.

State Parks (SP) Senior Specialist Environmental Scientist: Provides technical expertise in developing design options, investigations, participates in design review meetings, and draft and final work plan review on behalf of the landowner. The SP Senior Specialist Environmental Scientist will perform a wetland delineation and prepare an invasive plant management plan for the proposed site. SP Senior Archeologist: The SP Senior Archeologist will provide cultural resource surveys in compliance with CEQA and conduct tribal outreach for the project.

Pacific Watershed Associates (PWA), the PWA Project Manager will coordinate PWA professional activities and communication between cooperators. The engineering, geologic and biological subcontractor is responsible for providing technical expertise in developing design options, geologic and geomorphic investigations, and draft and final work plan review, editing and guidance for project scientists and engineers.

Certified Engineering Geologist: In overall responsible charge of geologic, geotechnical, and geomorphic characterization, well installations, and characterization of subsurface hydrogeological conditions with the Project Engineer. Provides input on complex geologic and geomorphic issues. Provides input on instream structures for geomorphic and habitat purposes. Collaborates

with the Senior Engineer on reporting. Ensures compliance with Geologist and Geophysicist Act (California Business and Professions Code 7800).

Staff Geologist: Supports the Engineering Geologist in field investigations, soils sampling, monitoring well installation, geomorphic mapping and report preparation. NR Specialist (Fisheries Biologist): Task 2- 6. Providing biological analyses from field surveys that will document existing conditions and influence design strategies. Provide professional input on the Basis of Design and any deliverables that require a professional biologist.

GIS/CAD Drafting Staff: Provides project support through GIS analysis, technical drafting of base maps using LiDAR hillshade data, development of GIS/CAD maps and products, and produces field maps in support of site characterization.

Clear Hart Drilling- This environmental drilling company will be retained by PWA to perform subsurface investigations and sampling using a hollow stem auger at locations along the M1 Road.

Tribal Consultant(s) - Tribal consultation will take place throughout the project design process if any Tribes are interested in the project.

Materials:

TU Supplies: Includes, field or office supplies, meeting materials, postage, and professional printing/duplication. Other Field supplies will include t-posts with graduated markings or standard staff plates, stakes, rebar, field measurement instruments (stadia rods and tape measures), flagging and paper towels to clean the instruments etc. B-sized drawing sets and office supplies-designs will be printed at various design stages for meetings and Project Team review. Small office supplies will be used to complete the project including: photographic supplies, field maps, mylar overlays for field maps, photoduplication for final reports, copying/binding for final reports, report maps, and postage. Mapping and design drawings. Office supplies will be used to organize and prepare for the field, analyze field data, print out design components and shred the needed paperwork amongst project partners and CDFW Piezometer/monitoring well materials will include one- or two-inch diameter blank and slotted poly-vinyl-chloride well casing, clean kiln-dried #30 sand suitable for use in a potable water well, non-shrinking grout for an annular seal at the top of the well, 1½in. polycarbonate core barrel sleeves, and well caps. Piezometer/monitoring well materials will be used to help investigate surface and subsurface water levels over a year. Water level and groundwater monitoring to collect discharge measurements. The water quality and turbidity meters will be used to collect water quality data that will be incorporated into the site characterization. A 2 to 3-inch hand auger, sampling tubes, rebar or cone penetrometer, buckets, and shovels will be used for subsurface investigations. The Avenza tablet will be used to collect geospatial information. Minnow traps will be used to sample fish.

Pressure transducers and ambient temperature monitoring equipment will be used to measure and calibrate water surface elevations and develop a flow duration curve and estimate daily average exceedance flows necessary for the HEC-RAS model. The total station will be used to complete the topographic survey and geomorphic mapping. Soil sampling materials for subsurface investigation provided by the subcontracted environmental driller are included in the subcontractor's cost.

Tasks:

Ground disturbing tasks include geological and geotechnical Investigations. PWA Principal, Engineering Geologist and Staff Scientist will provide focused geological and geotechnical investigations sufficient to characterize project area geomorphology and engineering properties of site soils and will inform the design engineer in design alternative analysis process (e.g. bridge, bottomless structure, embedded culvert). Surface and/or subsurface investigations will be conducted within the upstream stream basin, marsh areas above the M1 Road, the M1 Road embankment, and tidal marsh areas below the road. Investigations will identify and characterize threats to the design project from fluvial erosion, site soils properties, mass wasting processes, and land use. A qualitative description of sediment supply, composition, and mode of transport, and an assessment of potential impacts of sediment supply to the project will be performed. A 2 or 3-inch diameter hand soil auger and core sampler will be utilized to investigate subsurface materials along the streambanks and marsh areas upstream and downstream of the crossing. A soil probe or penetrometer will be used to identify the location of buried LWM within the marsh areas. Subsurface borings will be conducted at the stream crossing site by a drilling rig equipped with a hollow stem auger subcontracted by PWA. 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 LWM structures into the habitat enhancement design, and stabilization of disturbed or stockpiled materials. All borings will be located where suitable to investigate subsurface materials and collect samples required to provide 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:

Final (100%) Design Report and PS&E package in electronic PDF format and two (2) hardcopies. Signed and stamped construction plans shall be provided at full size (22 x 34 in) and half size (11 x 17 in).

Timelines:

Start date: 4/3/2023; End Date: 3/31/2026

Season's work window for ground disturbing activities (Soil boring) will be
June 15 – October 31

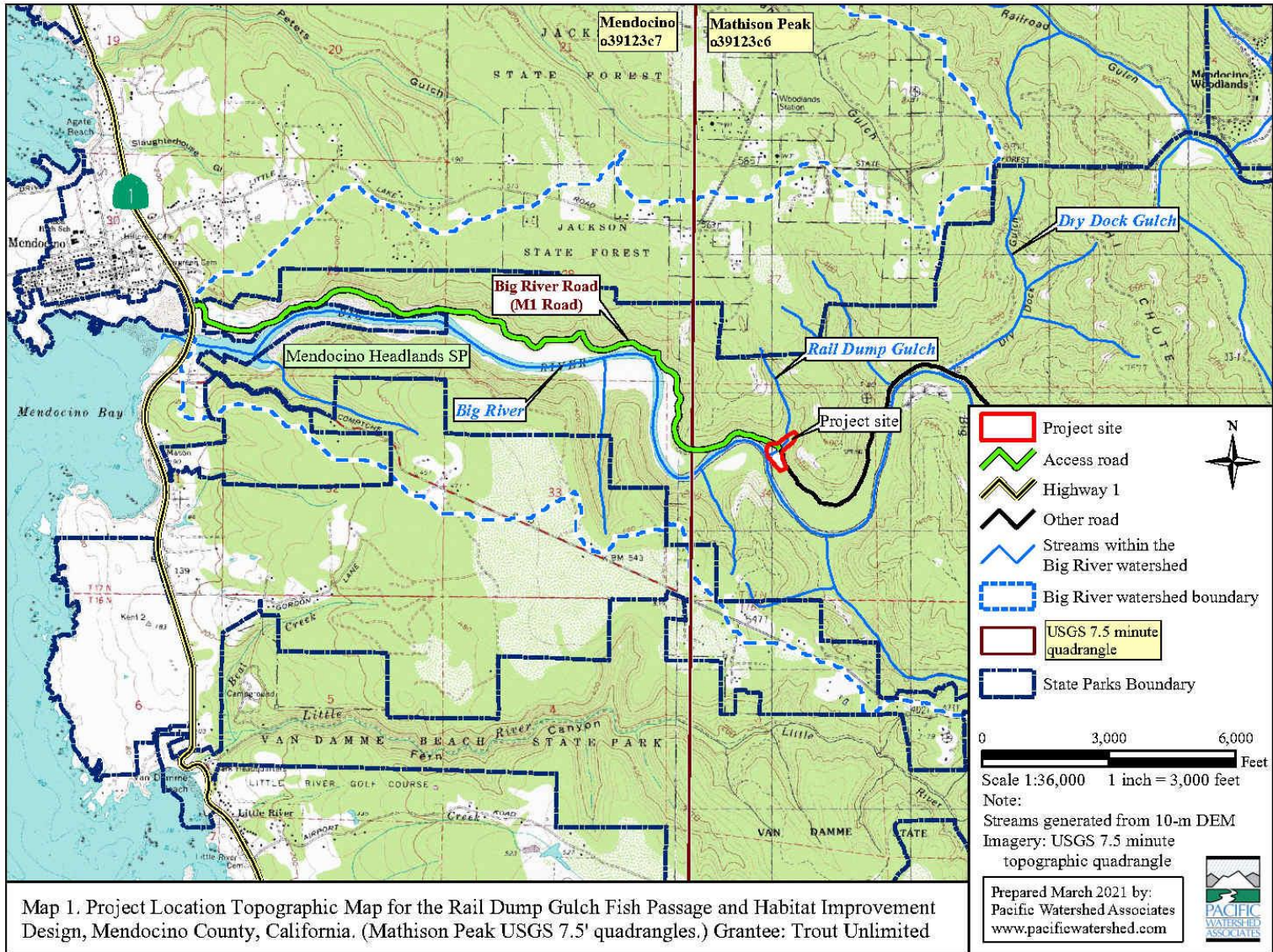
Additional Requirements:

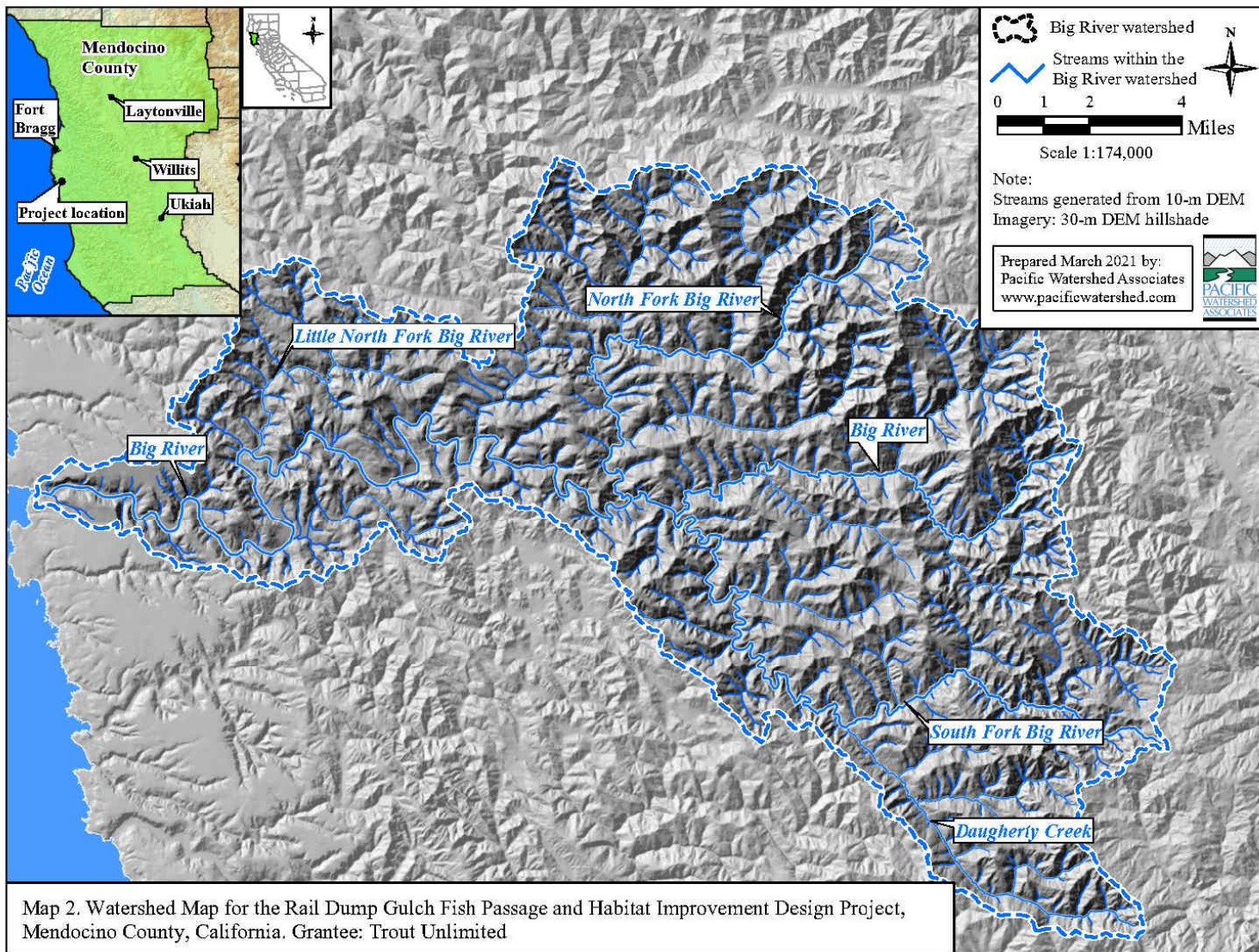
The Permittee will not proceed with on the ground implementation until all necessary permits and consultations are secured. Work in flowing streams is restricted per the Army Corp of Engineers Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of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





CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE RareFind

Query Summary:

Quad IS (Mathison Peak (3912336) OR Mendocino (3912337) OR Comptche (3912335) OR Albion (3912327) OR Elk (3912326) OR Navarro (3912325) OR Fort Bragg (3912347) OR Noyo Hill (3912346) OR Northspur (3912345))

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CNDDDB 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
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	Dicots	PDNYC010N4	61	4	None	None	G4G5T2	S2	1B.1	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Coastal dunes
<i>Accipiter gentilis</i>	northern goshawk	Birds	ABNKC12060	433	1	None	None	G5	S3	null	BLM_S-Sensitive, CDFW_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
<i>Agelaius tricolor</i>	tricolored blackbird	Birds	ABPBXB0020	955	1	None	Threatened	G1G2	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
<i>Agrostis blasdalei</i>	Blasdale's bent grass	Monocots	PMPOA04060	62	12	None	None	G2G3	S2	1B.2	BLM_S-Sensitive, SB_UCSC-UC Santa Cruz	Coastal bluff scrub, Coastal dunes, Coastal prairie
<i>Arborimus pomom</i>	Sonoma tree vole	Mammals	AMAFF23030	222	31	None	None	G3	S3	null	CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	North coast coniferous forest, Oldgrowth, Redwood
<i>Arctostaphylos nummularia</i> ssp. <i>mendocinoensis</i>	pygmy manzanita	Dicots	PDERI04280	7	7	None	None	G3?T1	S1	1B.2	null	Closed-cone coniferous forest
<i>Ascaphus truei</i>	Pacific tailed frog	Amphibians	AAABA01010	491	23	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
<i>Astragalus agnicidus</i>	Humboldt County milk-vetch	Dicots	PDFAB0F080	69	12	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
<i>Atractelmis wawona</i>	Wawona riffle beetle	Insects	IICOL58010	80	1	None	None	G3	S1S2	null	null	Aquatic
<i>Blennosperma nanum</i> var. <i>robustum</i>	Point Reyes blennosperma	Dicots	PDAST1A022	13	1	None	Rare	G4T2	S2	1B.2	null	Coastal prairie, Coastal scrub
<i>Bombus caliginosus</i>	obscure bumble bee	Insects	IHYM24380	181	3	None	None	G2G3	S1S2	null	IUCN_VU-Vulnerable	null
<i>Bombus occidentalis</i>	western bumble bee	Insects	IHYM24250	306	3	None	None	G2G3	S1	null	USFS_S-Sensitive	null
<i>Brachyramphus marmoratus</i>	marbled murrelet	Birds	ABNNN06010	110	1	Threatened	Endangered	G3	S2	null	CDF_S-Sensitive, IUCN_EN-Endangered, NABCI_RWL-Red Watch List	Lower montane coniferous forest, Oldgrowth, Redwood
<i>Calamagrostis crassiglumis</i>	Thurber's reed grass	Monocots	PMPOA17070	15	1	None	None	G3Q	S2	2B.1	null	Coastal scrub, Freshwater

												marsh, Marsh & swamp, Wetland
Calilleptoneta wapiti	Mendocino leptonetid spider	Arachnids	ILARAU6040	2	2	None	None	G1	S1	null	null	North coast coniferous forest
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	Dicots	PDCON040D2	42	4	None	None	G4T2T3	S2S3	1B.2	BLM_S-Sensitive	Coastal bluff scrub, Coastal dunes, Coastal scrub, North coast coniferous forest
Campanula californica	swamp harebell	Dicots	PDCAM02060	155	40	None	None	G3	S3	1B.2	BLM_S-Sensitive	Bog & fen, Closed-cone coniferous forest, Coastal prairie, Marsh & swamp, Meadow & seep, North coast coniferous forest, Wetland
Carex californica	California sedge	Monocots	PMCYP032D0	41	29	None	None	G5	S2	2B.2	null	Bog & fen, Closed-cone coniferous forest, Coastal prairie, Freshwater marsh, Marsh & swamp, Meadow & seep, Wetland
Carex lenticularis var. limnophila	lagoon sedge	Monocots	PMCYP037A7	4	1	None	None	G5T5	S1	2B.2	null	Bog & fen, Marsh & swamp, North coast coniferous forest
Carex livida	livid sedge	Monocots	PMCYP037L0	1	1	None	None	G5	SH	2A	null	Bog & fen, Wetland
Carex lyngbyei	Lyngbye's sedge	Monocots	PMCYP037Y0	37	3	None	None	G5	S3	2B.2	IUCN_LC-Least Concern	Marsh & swamp, Wetland
Carex saliniformis	deceiving sedge	Monocots	PMCYP03BY0	18	7	None	None	G2	S2	1B.2	null	Coastal prairie, Coastal scrub, Marsh & swamp, Meadow & seep, Wetland
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's-clover	Dicots	PDSCR0D402	31	2	None	None	G4T2	S2	1B.2	BLM_S-Sensitive	Marsh & swamp, Salt marsh, Wetland
Castilleja litoralis	Oregon coast paintbrush	Dicots	PDSCR0D012	44	3	None	None	G3	S3	2B.2	null	Coastal bluff scrub, Coastal dunes, Coastal scrub
Castilleja mendocinensis	Mendocino Coast paintbrush	Dicots	PDSCR0D3N0	52	30	None	None	G2	S2	1B.2	BLM_S-Sensitive	Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub
Charadrius nivosus nivosus	western snowy plover	Birds	ABNNB03031	138	1	Threatened	None	G3T3	S2	null	CDFW_SSC-Species of Special Concern, NABCI_RWL-Red Watch List	Great Basin standing waters, Sand shore, Wetland
Chorizanthe howellii	Howell's spineflower	Dicots	PDPGN040C0	9	5	Endangered	Threatened	G1	S1	1B.2	null	Coastal dunes, Coastal prairie, Coastal scrub
Clarkia amoena ssp. whitneyi	Whitney's farewell-to-spring	Dicots	PDONA05025	8	1	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
Coastal Brackish Marsh	Coastal Brackish Marsh	Marsh	CTT52200CA	30	1	None	None	G2	S2.1	null	null	Marsh & swamp, Wetland
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	Marsh	CTT52410CA	60	2	None	None	G3	S2.1	null	null	Marsh & swamp, Wetland
Coelus globosus	globose dune beetle	Insects	IICOL4A010	50	2	None	None	G1G2	S1S2	null	IUCN_VU-Vulnerable	Coastal dunes
Collinsia corymbosa	round-headed Chinese-houses	Dicots	PDSCR0H060	13	4	None	None	G1	S1	1B.2	null	Coastal dunes
Coptis laciniata	Oregon goldthread	Dicots	PDRAN0A020	122	35	None	None	G4?	S3?	4.2	null	Meadow & seep, North coast

												coniferous forest, Wetland
Cornus unalaschkensis	bunchberry	Dicots	PDCOR010F0	11	3	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 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
Cuscuta pacifica var. papillata	Mendocino dodder	Dicots	PDCUS011A2	5	2	None	None	G5T1	S1	1B.2	null	Coastal dunes
Elanus leucurus	white-tailed kite	Birds	ABNKC06010	184	1	None	None	G5	S3S4	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern	Cismontane woodland, Marsh & swamp, Riparian woodland, Valley & foothill grassland, Wetland
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
Erethizon dorsatum	North American porcupine	Mammals	AMAFJ01010	523	1	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
Erigeron supplex	supple daisy	Dicots	PDAST3M3Z0	21	4	None	None	G2	S2	1B.2	SB_UCBG-UC Botanical Garden at Berkeley	Coastal bluff scrub, Coastal prairie
Erysimum concinnum	bluff wallflower	Dicots	PDBRA160E3	30	8	None	None	G3	S2	1B.2	BLM_S-Sensitive	Coastal bluff scrub, Coastal dunes, Coastal prairie
Erysimum menziesii	Menzies' wallflower	Dicots	PDBRA160R0	19	4	Endangered	Endangered	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley	Coastal dunes
Erythronium	coast fawn lily	Monocots	PMLIL0U0F0	172	5	None	None	G4G5	S3	2B.2	null	Bog & fen,

revolutum													Broadleaved upland forest, North coast coniferous forest, Wetland
Eucyclogobius newberryi	tidewater goby	Fish	AFCQN04010	127	2	Endangered	None	G3	S3	null	AFS_EN-Endangered, IUCN_VU-Vulnerable	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters, South coast flowing waters	
Fratercula cirrhata	tufted puffin	Birds	ABNNN12010	17	2	None	None	G5	S1S2	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Protected deepwater coastal communities	
Gilia capitata ssp. pacifica	Pacific gilia	Dicots	PDPLM040B6	91	5	None	None	G5T3	S2	1B.2	null	Chaparral, Coastal bluff scrub, Coastal prairie, Valley & foothill grassland	
Gilia millefoliata	dark-eyed gilia	Dicots	PDPLM04130	54	4	None	None	G2	S2	1B.2	BLM_S-Sensitive	Coastal dunes	
Grand Fir Forest	Grand Fir Forest	Forest	CTT82120CA	9	6	None	None	G1	S1.1	null	null	null	
Helminthoglypta arrosa pomoensis	Pomo bronze shoulderband	Mollusks	IMGASC2033	3	1	None	None	G2G3T1	S1	null	IUCN_DD-Data Deficient	North coast coniferous forest, Redwood	
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Dicots	PDAST4R065	52	1	None	None	G5T2	S2	1B.2	SB_UCBG-UC Botanical Garden at Berkeley	Valley & foothill grassland	
Hesperevax sparsiflora var. brevifolia	short-leaved evax	Dicots	PDASTE5011	72	20	None	None	G4T3	S3	1B.2	BLM_S-Sensitive	Coastal bluff scrub, Coastal dunes, Coastal prairie	
Hesperocypris pygmaea	pygmy cypress	Gymnosperms	PGCUP04032	37	25	None	None	G1	S1	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Closed-cone coniferous forest	
Hesperoleucus venustus navarroensis	northern coastal roach	Fish	AFCJB19031	4	2	None	None	GNRT3	S3	null	CDFW_SSC-Species of Special Concern	Aquatic, Klamath/North coast flowing waters	
Horkelia marinensis	Point Reyes horkelia	Dicots	PDROS0W0B0	36	4	None	None	G2	S2	1B.2	null	Coastal dunes, Coastal prairie, Coastal scrub	
Hydrobates homochroa	ashy storm-petrel	Birds	ABNDC04030	21	1	None	None	G2	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Protected deepwater coastal communities	
Juncus supiniformis	hair-leaved rush	Monocots	PMJUN012R0	6	6	None	None	G5	S1	2B.2	IUCN_LC-Least Concern	Bog & fen, Marsh & swamp, Wetland	
Kopsiopsis hookeri	small groundcone	Dicots	PDORO01010	21	1	None	None	G4?	S1S2	2B.3	null	North coast coniferous forest	
Lasthenia californica ssp. bakeri	Baker's goldfields	Dicots	PDAST5L0C4	19	3	None	None	G3T1	S1	1B.2	null	Closed-cone coniferous forest, Coastal scrub, Marsh & swamp, Meadow & seep	
Lasthenia californica ssp. macrantha	perennial goldfields	Dicots	PDAST5L0C5	59	11	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
<i>Lilium maritimum</i>	coast lily	Monocots	PMLIL1A0C0	84	34	None	None	G2	S2	1B.1	BLM_S-Sensitive, SB_BerrySB-Berry Seed Bank, SB_UCBG-UC Botanical Garden at Berkeley	Broadleaved upland forest, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Marsh & swamp, North coast coniferous forest	
<i>Lycopodium clavatum</i>	running-pine	Ferns	PPLYC01080	120	4	None	None	G5	S3	4.1	null	Lower montane coniferous forest, Marsh & swamp, North coast coniferous forest, Wetland	
Mendocino Pygmy Cypress Forest	Mendocino Pygmy Cypress Forest	Forest	CTT83161CA	25	24	None	None	G2	S2.1	null	null	Closed-cone coniferous forest	
<i>Microseris borealis</i>	northern microseris	Dicots	PDAST6E030	3	1	None	None	G5	S1	2B.1	IUCN_LC-Least Concern	Bog & fen, Lower montane coniferous forest, Meadow & seep, Wetland	
<i>Mitellastr caulescens</i>	leafy-stemmed mitrewort	Dicots	PDSAX0N020	21	3	None	None	G5	S4	4.2	null	Broadleaved upland forest, Lower montane coniferous forest, Meadow & seep, North coast coniferous forest	
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	Marsh	CTT52110CA	53	2	None	None	G3	S3.2	null	null	Marsh & swamp, Wetland	
<i>Noyo intersessa</i>	Ten Mile shoulderband	Mollusks	IMGASC5070	3	2	None	None	G2	S2	null	null	Coastal dunes, Coastal scrub, Redwood, Riparian forest	
<i>Oncorhynchus kisutch</i> pop. 4	coho salmon - central California coast ESU	Fish	AFCHA02034	23	1	Endangered	Endangered	G5T2Q	S2	null	AFS_EN-Endangered	Aquatic	
<i>Oncorhynchus mykiss irideus</i> pop. 16	steelhead - northern California DPS	Fish	AFCHA0209Q	12	2	Threatened	None	G5T2T3Q	S2S3	null	AFS_TH-Threatened	Aquatic, Klamath/North coast flowing waters	
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	Dicots	PDAST8H0H1	72	6	None	None	G4T4	S2S3	2B.2	null	Coastal scrub, North coast coniferous forest	
<i>Pandion haliaetus</i>	osprey	Birds	ABNKC01010	504	2	None	None	G5	S4	null	CDF_S-Sensitive, CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest	
<i>Phacelia insularis</i> var. <i>continentis</i>	North Coast phacelia	Dicots	PDHYD0C2B1	15	5	None	None	G2T2	S2	1B.2	SB_UCBG-UC Botanical Garden at Berkeley	Coastal bluff scrub, Coastal dunes	
<i>Pinus contorta</i> ssp. <i>bolanderi</i>	Bolander's beach pine	Gymnosperms	PGPIN04081	28	28	None	None	G5T2	S2	1B.2	null	Closed-cone coniferous forest	
<i>Piperia candida</i>	white-flowered rein orchid	Monocots	PMORC1X050	222	18	None	None	G3?	S3	1B.2	null	Broadleaved upland forest, Lower montane coniferous forest, North coast coniferous forest, Ultramafic	
<i>Plebejus anna lotis</i>	lotis blue butterfly	Insects	IILEPG5013	2	1	Endangered	None	G4TH	SH	null	null	Bog & fen, Meadow & seep, Wetland	
<i>Pleuropogon hooverianus</i>	North Coast semaphore grass	Monocots	PMPOA4Y070	27	1	None	Threatened	G2	S2	1B.1	SB_BerrySB-Berry Seed Bank, SB_CaBG/RSABG-California/Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Meadow & seep, North coast coniferous forest, Wetland	
<i>Progne subis</i>	purple martin	Birds	ABPAU01010	71	3	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Broadleaved upland forest, Lower montane coniferous forest	
<i>Puccinellia pumila</i>	dwarf alkali grass	Monocots	PMPOA531L0	2	1	None	None	G5	SH	2B.2	null	Marsh & swamp, Wetland	
<i>Ramalina thrausta</i>	angel's hair lichen	Lichens	NLLEC3S340	21	3	None	None	G5?	S2S3	2B.1	null	North coast coniferous forest	

Rana aurora	northern red-legged frog	Amphibians	AAABH01021	292	30	None	None	G4	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	Klamath/North coast flowing waters, Riparian forest, Riparian woodland
Rana boylei	foothill yellow-legged frog	Amphibians	AAABH01050	2478	101	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	13	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
Rhynchospora alba	white beaked-rush	Monocots	PMCYP0N010	17	2	None	None	G5	S2	2B.2	IUCN_LC-Least Concern	Bog & fen, Marsh & swamp, Meadow & seep, Wetland
Sanguisorba officinalis	great burnet	Dicots	PDR0S1L060	22	3	None	None	G5?	S2	2B.2	null	Bog & fen, Broadleaved upland forest, Marsh & swamp, Meadow & seep, North coast coniferous forest, Riparian forest, Ultramafic, Wetland
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	Dicots	PDMAL11012	34	5	None	None	G5T2	S2	1B.2	null	Freshwater marsh, Marsh & swamp, Wetland
Sidalcea malachroides	maple-leaved checkerbloom	Dicots	PDMAL110E0	136	5	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	1	None	None	G5T2	S2	1B.2	null	Coastal bluff scrub, Coastal prairie, North coast coniferous forest
Sidalcea malviflora ssp. purpurea	purple-stemmed checkerbloom	Dicots	PDMAL110FL	19	1	None	None	G5T1	S1	1B.2	BLM_S-Sensitive	Broadleaved upland forest, Coastal prairie
Speyeria zerene behrensii	Behren's silverspot butterfly	Insects	IILEPJ6088	12	2	Endangered	None	G5T1	S1	null	null	Coastal prairie
Sphagnum Bog	Sphagnum Bog	Marsh	CTT51110CA	12	5	None	None	G3	S1.2	null	null	Bog & fen, Wetland
Taricha rivularis	red-bellied newt	Amphibians	AAAAF02020	136	16	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
Trifolium buckwestiorum	Santa Cruz clover	Dicots	PDFAB402W0	64	2	None	None	G2	S2	1B.1	BLM_S-Sensitive, SB_SBBG-Santa Barbara Botanic Garden, SB_UCSC-UC Santa Cruz, SB_USDA-US Dept of Agriculture	Broadleaved upland forest, Cismontane woodland, Coastal prairie
Trifolium trichocalyx	Monterey clover	Dicots	PDFAB402J0	6	1	Endangered	Endangered	G1	S1	1B.1	SB_USDA-US Dept of Agriculture	Closed-cone coniferous forest
Triquetrella californica	coastal triquetrella	Bryophytes	NBMUS7S010	13	1	None	None	G2	S2	1B.2	USFS_S-Sensitive	Coastal bluff scrub, Coastal scrub
Usnea	Methuselah's	Lichens	NLLEC5P420	206	8	None	None	G4	S4	4.2	BLM_S-Sensitive	Broadleaved

longissima	beard lichen												upland forest, North coast coniferous forest, Oldgrowth, Redwood
Viola palustris	alpine marsh violet	Dicots	PDVIO041G0	10	2	None	None	G5	S1S2	2B.2	null		Bog & fen, Coastal scrub, Wetland