

Durphy Creek Fish Passage Design Project ***(Project ID: 1727754) 2022***

Introduction:

The Eel River Watershed Improvement Group (Permittee) will assess three barriers on Durphy Creek developing 100% plans for two crossings located within California Department of Parks and Recreation (CDPR) property and conceptual designs for one crossing on California Department of Transportation (Caltrans) property. Remediation of the barriers will improve access for Coho Salmon to approximately 1.4 miles of quality habitat.

The Grantee shall not proceed with on the ground implementation until all necessary permits, consultations, and/or Notice to Proceed are secured. All habitat improvements will follow techniques in the California Department of Fish and Wildlife (CDFW) California Salmonid Stream Habitat Restoration Manual, Volume II, Part IX (<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 specific objective of this project is to develop designs for three fish passage barriers at road crossings. Two crossings on CDPR property will have 100% design and Basis of Design (BOD) reports developed. One crossing on Caltrans property will have conceptual level designs and a Preliminary BOD developed. All three crossings are located on Durphy Creek within the first 850 feet of channel upstream from the confluence with South Fork Eel River. The goal of remediating the three barriers will be to allow salmonids an additional 1.4 miles of good quality habitat in Durphy Creek and its tributaries.

Project Description:

Location:

This project is located on Durphy Creek tributary to South Fork Eel River, in the County of Humboldt, State of California. Feature 1 is located approximately 250 feet upstream from the confluence with South Fork Eel River. Feature 2, the State Highway 101 crossing, is approximately 550 feet upstream from South Fork Eel River. Feature 3 is approximately 850 feet from the confluence with the South Fork Eel River. The center point for the project reach is 40.021709° north latitude,

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-123.792227° west longitude.

Project Set Up:

Permittee will conduct project oversight, planning and reporting. Permittee will in lead Technical Advisory Committee (TAC) meetings. Subcontractor GHD will conduct all necessary surveys and data analysis and will participate in TAC meetings. GHD will develop design plans and will hire geotechnical subcontractor. CDPR will attend TAC meetings and will complete the CEQA consultation for the implementation phase of the project. All CDPR time will be cost share.

Materials:

This is a design project and no materials will be installed in the channel.

Tasks:

Geotechnical Investigation

GHD will subcontract Crawford & Associates (Crawford) to complete a geotechnical investigation to inform the designs of the two CDPR crossings and the conceptual design of the Caltrans crossing. Crawford will review pertinent documents including preliminary design reports and plans, existing survey data, available existing site or nearby site geotechnical data, and published topographic maps, geologic maps, and fault maps of the site. Before commencement of the field exploration, GHD will reconnoiter the site, mark boring locations, notify USA North, obtain the required Humboldt County Division of Environmental Health (HCDEH) Well and Boring Permit, and schedule the subsurface exploration with a C-57 licensed drilling subcontractor.

Crawford will oversee drilling and sampling of two borings from road-level on each side of Durphy Creek near the proposed culvert/bridge structures. A Crawford engineer/geologist will log the borings and direct the sampling. GHD will collect bulk and drive samples from the borings for laboratory testing. Drill cuttings will be removed from the site. Crawford will use cones and work ahead signs to keep traffic and the public away from the drilling operation. Crawford will perform laboratory tests, as appropriate, on selected samples retrieved from the borings.

Crawford will consult with GHD on geotechnical topics, questions, and clarifications. Crawford will also complete one review (65% or 95%) of the project plans and specifications for conformance with the recommendations in the Geotechnical Report.

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Deliverables:

A geotechnical report will be developed from the geotechnical investigations. The project will deliver 100% designs and BODs for two stream crossing upgrades and a conceptual design and preliminary BOD for one crossing, all on Durphy Creek.

Timelines:

Geotechnical investigations will take place June 15, 2023, through June 30, 2024. One Conceptual Design will be delivered June 30, 2024. Designs at 100% for two crossings will be delivered December 1, 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 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.

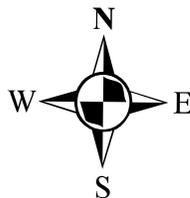
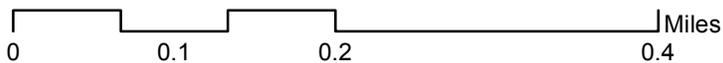
All habitat improvements will follow techniques described in the *California Salmonids Stream Habitat Restoration Manual*, Volume I and Volume II.

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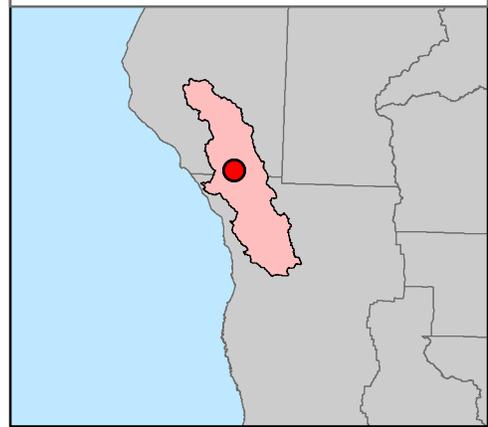


Site Specific Map

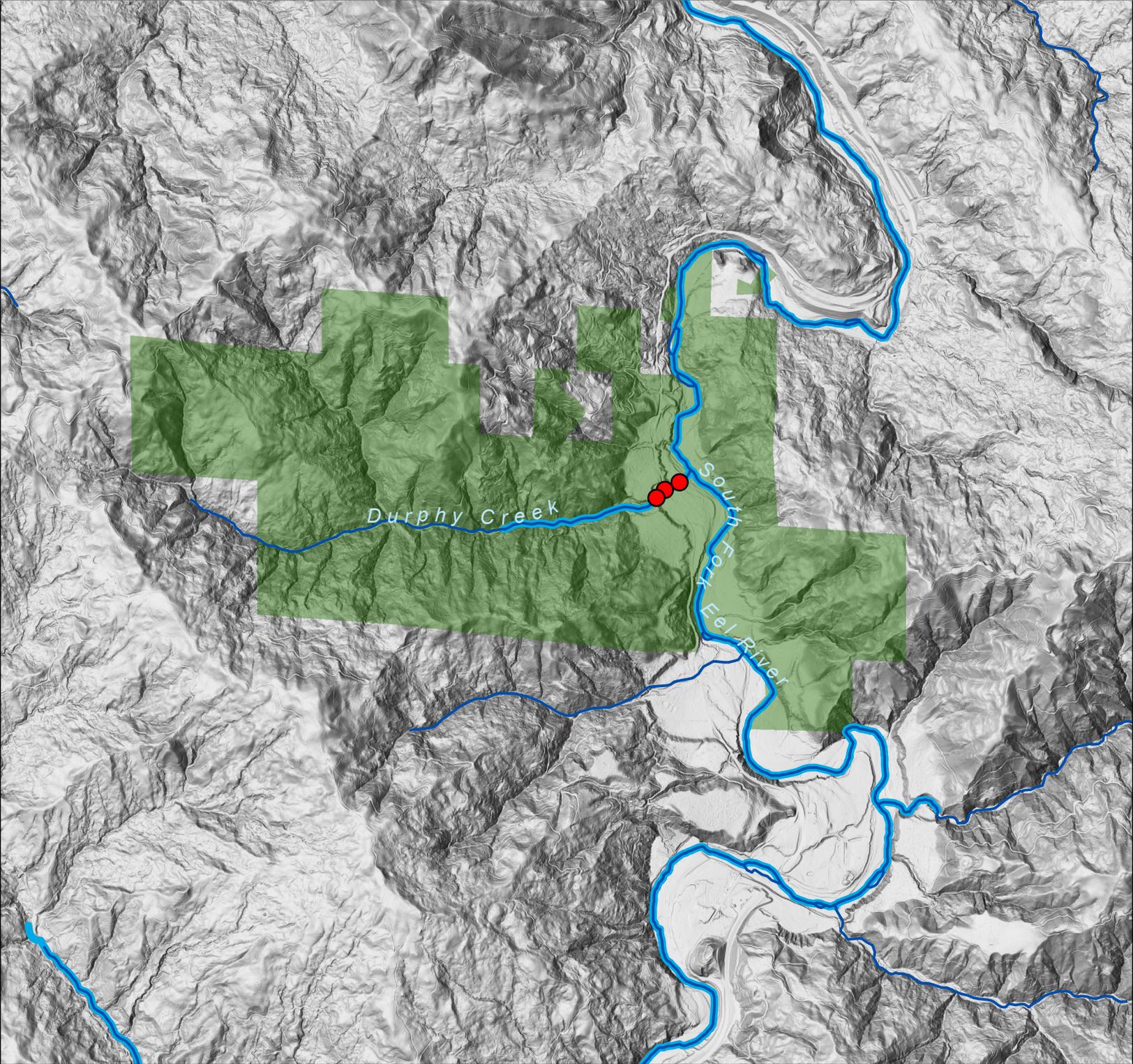
-  Durphy Creek Project Area
-  Coho Salmon Distribution
-  Richardson Grove State Park
-  South Fork Eel River Watershed



Map Location



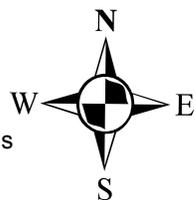
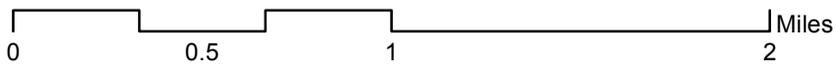
Durphy Creek Fish Passage Design Project



-  Durphy Creek Project Area
-  Winter Steelhead Distribution
-  Coho Salmon Distribution
-  Richardson Grove State Park
-  South Fork Eel River Watershed



Map Location



CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE RareFind

Query Summary:

Quad **IS** (Garberville (4012317) **OR** BriceLand (4012318) **OR** Harris (4012316) **OR** Bear Harbor (3912388) **OR** Piercy (3912387) **OR** Noble Butte (3912386) **OR** Ettersburg (4012328) **OR** Miranda (4012327) **OR** Fort Seward (4012326))

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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	2	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
Aquila chrysaetos	golden eagle	Birds	ABNKC22010	325	2	None	None	G5	S3	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, CDFW_WL-Watch List, IUCN_LC-Least Concern	Broadleaved upland forest, Cismontane woodland, Coastal prairie, Great Basin grassland, Great Basin scrub, Lower montane coniferous forest, Pinon & juniper woodlands, Upper montane coniferous forest, Valley & foothill grassland
Arabis mcdonaldiana	McDonald's rockcress	Dicots	PDBRA06150	27	5	Endangered	Endangered	G3	S3	1B.1	SB_BerrySB-Berry Seed Bank, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Lower montane coniferous forest, Ultramafic, Upper montane coniferous forest
Arborimus pomo	Sonoma tree vole	Mammals	AMAFF23030	222	5	None	None	G3	S3	null	CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	North coast coniferous forest, Oldgrowth, Redwood
Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	Dicots	PDERI041G2	13	1	None	None	G3T2	S2	1B.1	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture	Chaparral, Lower montane coniferous forest, Ultramafic
Ascaphus truei	Pacific tailed frog	Amphibians	AAABA01010	491	2	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	1	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	7	None	None	G2G3	S1	null	USFS_S-Sensitive	null
Calamagrostis foliosa	leafy reed grass	Monocots	PMPOA170C0	22	2	None	Rare	G3	S3	4.2	null	Coastal bluff scrub, North coast coniferous forest
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	7	None	None	G3	S3	2B.2	null	Coastal bluff scrub, Coastal dunes, Coastal scrub
Castilleja mendocinensis	Mendocino Coast paintbrush	Dicots	PDSCR0D3N0	52	1	None	None	G2	S2	1B.2	BLM_S-Sensitive	Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub
Ceanothus foliosus var. vineatus	Vine Hill ceanothus	Dicots	PDRHA040D6	6	1	None	None	G3T1	S1	1B.1	null	Chaparral
Coptis laciniata	Oregon goldthread	Dicots	PDRAN0A020	122	2	None	None	G4?	S3?	4.2	null	Meadow & seep, North coast coniferous forest, Wetland
Empidonax traillii brewsteri	little willow flycatcher	Birds	ABPAE33041	2	1	None	Endangered	G5T3T4	S1S2	null	null	Meadow & seep, Riparian woodland
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1404	5	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	6	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
Eriogonum kelloggii	Kellogg's buckwheat	Dicots	PDPGN083A0	7	6	None	Endangered	G2	S2	1B.2	BLM_S-Sensitive	Lower montane coniferous forest, Ultramafic
Erythronium oregonum	giant fawn lily	Monocots	PMLIL0U0C0	37	1	None	None	G5	S2	2B.2	null	Cismontane woodland, Meadow & seep, Ultramafic
Erythronium revolutum	coast fawn lily	Monocots	PMLIL0U0F0	172	4	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	1	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
Falco peregrinus anatum	American peregrine falcon	Birds	ABNKD06071	73	1	Delisted	Delisted	G4T4	S3S4	null	CDF_S-Sensitive, CDFW_FP-Fully Protected	null
Gentiana setigera	Mendocino gentian	Dicots	PDGEN060S0	11	1	None	None	G2	S2	1B.2	BLM_S-Sensitive, USFS_S-Sensitive	Lower montane coniferous forest, Meadow & seep, Ultramafic, Wetland
Gilia capitata ssp. pacifica	Pacific gilia	Dicots	PDPLM040B6	91	1	None	None	G5T3	S2	1B.2	null	Chaparral, Coastal bluff scrub, Coastal prairie, Valley & foothill grassland
Howellia aquatilis	water howellia	Dicots	PDCAM0A010	7	1	Delisted	None	G3	S2	2B.2	null	Aquatic, Freshwater marsh, Marsh & swamp, Wetland
Kopsiopsis hookeri	small groundcone	Dicots	PDORO01010	21	1	None	None	G4?	S1S2	2B.3	null	North coast coniferous forest
Mitellastra caulescens	leafy-stemmed mitrewort	Dicots	PDSAX0N020	21	1	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	9	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
Northern Interior Cypress Forest	Northern Interior Cypress Forest	Forest	CTT83220CA	22	1	None	None	G2	S2.2	null	null	Closed-cone coniferous forest
Noyo intersessa	Ten Mile shoulderband	Mollusks	IMGASC5070	3	1	None	None	G2	S2	null	null	Coastal dunes, Coastal scrub, Redwood, Riparian 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	3	None	None	G5	S4	null	CDF_S-Sensitive, CDFW_WL-Watch	Riparian forest

											List, IUCN_LC- Least Concern	
Pekania pennanti	Fisher	Mammals	AMAJF01020	555	3	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	33	None	None	G3?	S3	1B.2	null	Broadleaved upland forest, Lower montane coniferous forest, North coast coniferous forest, Ultramafic
Rana boylei	foothill yellow-legged frog	Amphibians	AAABH01050	2478	38	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	3	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
Sedum eastwoodiae	Red Mountain stonecrop	Dicots	PDCRA0A0L1	6	6	None	None	G5T2	S2	1B.2	BLM_S-Sensitive	Lower montane coniferous forest, Ultramafic
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
Silene bolanderi	Bolander's catchfly	Dicots	PDCAR0U2L0	30	1	None	None	G2	S2	1B.2	null	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadow & seep, North coast coniferous forest, Ultramafic
Silene greenei ssp. angustifolia	Red Mountain catchfly	Dicots	PDCAR0U0A2	8	6	None	Endangered	G5T1	S1	1B.2	BLM_S-Sensitive	Chaparral, Lower montane coniferous forest, Ultramafic
Taricha rivularis	red-bellied newt	Amphibians	AAAAF02020	136	4	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
Tracyina rostrata	beaked tracyina	Dicots	PDAST9D010	15	1	None	None	G2	S2	1B.2	USFS_S-Sensitive	Chaparral, Cismontane woodland, Valley & foothill grassland
Upland Douglas Fir Forest	Upland Douglas Fir Forest	Forest	CTT82420CA	15	2	None	None	G4	S3.1	null	null	North coast coniferous forest

Usnea longissima	Methuselah's beard lichen	Lichens	NLLEC5P420	206	10	None	None	G4	S4	4.2	BLM_S-Sensitive	Broadleaved upland forest, North coast coniferous forest, Oldgrowth, Redwood
Viburnum ellipticum	oval-leaved viburnum	Dicots	PDCPR07080	39	1	None	None	G4G5	S3?	2B.3	null	Chaparral, Cismontane woodland, Lower montane coniferous forest