

## Introduction:

The Mendocino Land Trust will improve instream habitat for salmonids in Brandon Gulch which is in the Noyo River Watershed. The Project is necessary because the lack of large wood in the stream channel has negatively affected the quality and quantity of salmonid habitat within Brandon Gulch by reducing the amount of large channel forming features and limiting complex cover for salmonids. Adding complex large wood features improves geomorphic function by capturing spawning gravels, improving winter and summer instream refugia, backflooding off-channel habitat and improving access to floodplains.

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*, Part VII.

## Objective(s):

The specific objective of this project is to improve the quality and quantity of spawning and rearing habitat for Coho Salmon by installing large wood in Brandon Gulch. This project will result in a total of 35 large wood features consisting of 110 pieces of wood over 3,885 feet (0.74 miles) of stream, meeting the "very good" category for large wood and key-piece frequencies, as outlined in federal Coho Salmon recovery plans. The addition of appropriately sized wood to meet target criteria will enhance the quality, quantity, and complexity of spawning and rearing habitat for salmonids.

## Project Description:

### Location:

The project is located on Brandon Gulch, in the county of Mendocino, State of California. The project starts the confluence with North Fork of South Fork Noyo river and continues upstream for 3,885 feet. The center point for the project reach is 39.40866° north latitude and -123.68023° west longitude and is located on the Noyo Hill 7.5 Minute U.S. Geological Survey (USGS) Quadrangle map.

### Project Set Up:

California Conservation Corps (CCC) will purchase materials (hardware), spike supplies, hand tools, drill bits, safety supplies, office supplies, decontamination chemicals, etc for the installation of large wood features. Additionally, CCC will service drill bits to have welded fixed extensions, and repair tools needed for implementation. Additional tools and materials may be purchased or repaired as

needed throughout implementation.

## **Materials:**

A total of 35 large wood features consisting of 110 pieces of logs and root wads will be constructed and anchored with 1" threaded rebar, nuts, washers, 5/8" galvanized cable, cable clamps, and waterproof epoxy glue, or by wedging into riparian trees without using anchoring materials. Trees left unanchored will be at least 1.5 times the average bankfull width per CDFW Stream Restoration Manual specifications for unanchored large wood (Part VII-23).

## **Tasks:**

CCC will purchase materials (hardware), spike supplies, hand tools, drill bits, safety supplies, office supplies, decontamination chemicals, etc. Additionally, CCC will service drill bits to have welded fixed extensions, and repair tools needed for implementation. Additional tools and materials may be purchased or repaired as needed throughout implementation.

CCC will install large wood features following approved conceptual feature designs. Approximately 35 instream features consisting of 110 pieces of large wood will be installed.

Logs and root-wads will be moved into place and anchored, per design, to living trees and stumps along the stream banks. Logs will be moved by using griphoist and wire rope rigging techniques or heavy equipment if available. The anchoring of large wood will require holes to be drilled through both large wood and anchor trees requiring the use of a generator to operate electric drills. One-inch diameter threadbar will be inserted through the logs and anchor trees, then secured with nuts and washers

Available slash and small woody debris will be installed into features to provide immediate cover for salmonids and to capture additional floating debris. Small woody debris will consist of branches on tops of felled trees ranging from 3 to 11 inches in diameter. To prevent erosion and introduction of fine sediment into the stream channel, exposed dirt resulting from construction of features will be covered/mulched using on-site forest materials.

To address the potential spread of aquatic invasive species and Sudden Oak Death, personal gear as well as tools/equipment used in the field will be properly decontaminated before moving to a new location to comply with CDFW and California Oak Mortality Task Force disinfection/decontamination protocol requirements.

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**Deliverables:**

Construction of 35 large wood features with 110 pieces of large wood and additional small wood.

**Timelines:**

June 15 through October 31 of the years 2022, 2023, 2024 and 2025 CCC will install large wood features within approved project reaches. Erosion control will be installed as project features are completed.

**Additional Requirements:**

Work in flowing streams is restricted per the United States Army Corp of Engineers Regional General Permit. Actual Project start and end dates, within this timeframe, are at the discretion of CDFW.

Permittee will follow the appropriate Regional General Permit and 401 Water Quality Certification for the Project and all its conditions including but not limited to the following: Projects must complete required threatened and endangered species surveys, biological monitoring, and reasonable measures that are protective and avoid causing harm to cultural, archeological, paleontological, and biological resources, including native species and their habitat. Staging/storage areas for equipment, materials, fuels, lubricants, and solvents will be located outside of the stream's high-water channel and associated riparian area where it cannot enter the stream channel. Stationary equipment such as motors, pumps, generators, compressors, and welders located within the dry portion of the stream channel or adjacent to the stream will be positioned over drip-pans. Vehicles will be moved out of the normal high-water area of the stream prior to refueling and lubricating. Permittee shall ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, Permittee shall provide to CDFW a plan to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur. Projects dewatering waterways are required to monitor and report water quality during dewatering activities. Parameters, such as but not limited to dissolved oxygen, temperature, conductivity, and turbidity shall be reported. For more information and an example monitoring report please contact the FRGP regulatory coordinator. Projects working in or near wetlands must delineate the wetland's boundary using the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual and Supplements as outlined in State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State.

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). All crew members will decontaminate equipment and shoes for AIS according to the standards detailed in the CDFW's 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.

Seeding and mulching of all exposed soils shall be done for all slopes that may deliver sediment to a stream. Woody debris will be concentrated on finished slopes adjacent to stream crossings. The standard for success is 80% ground cover for broadcast planting of seed, after a period of three years. Mulching and seeding will take place as sites are completed to avoid unforeseen erosion. Planting of tree seedlings will take place after December 1 or when sufficient rainfall has occurred to ensure the best chance of survival of the seedlings but in no case after April 1.

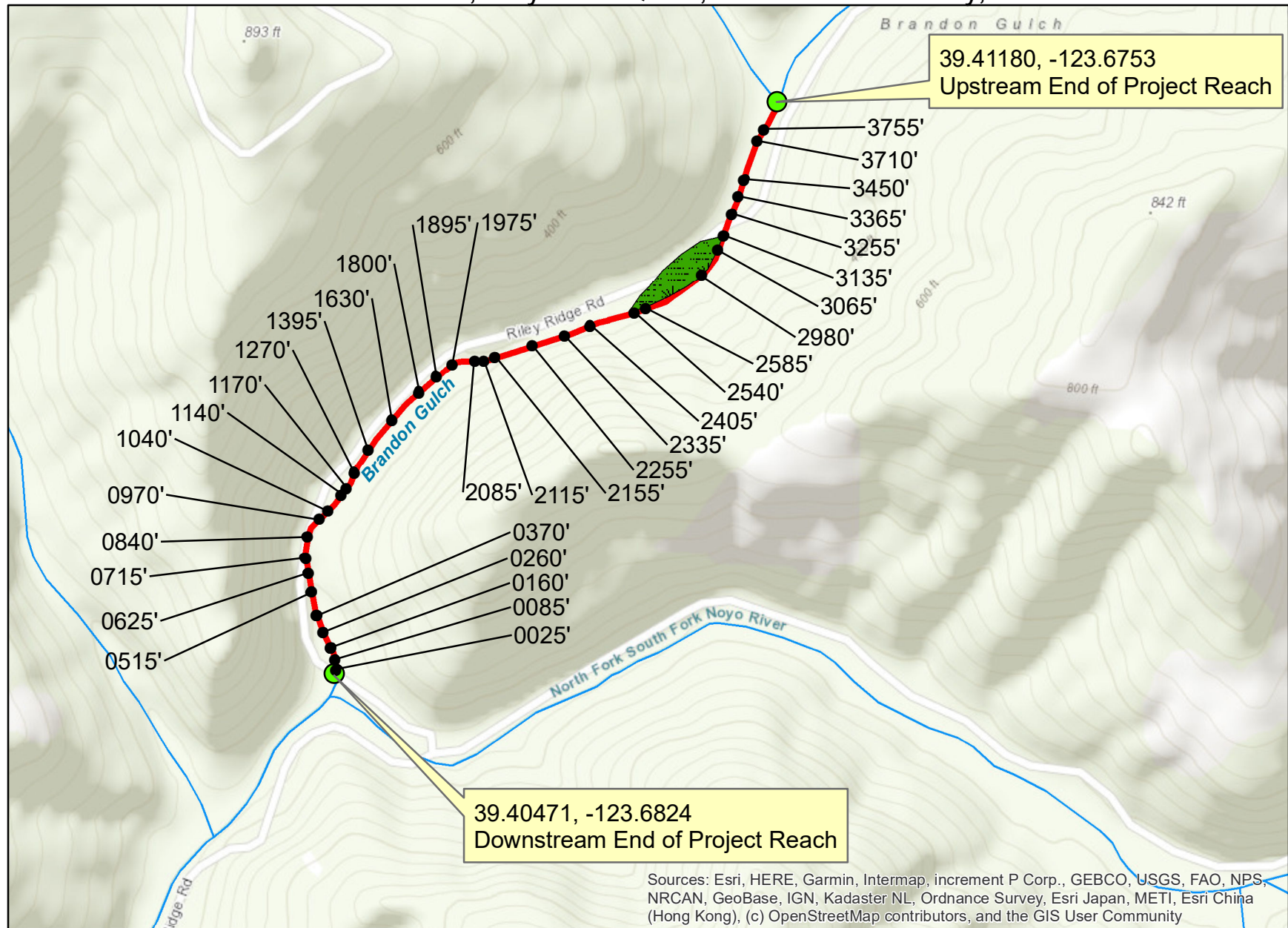
Final structure design and placement will be determined by field consultation between Permittee and the CDFW Project Manager. All habitat improvements will follow techniques described in the California Salmonid Stream Habitat Restoration Manual.

# Feature Locations Topographic Map

## Brandon Gulch Coho Habitat Enhancement Project

### Mendocino Land Trust

#### Brandon Gulch, Noyo Hill Quad, Mendocino County, CA



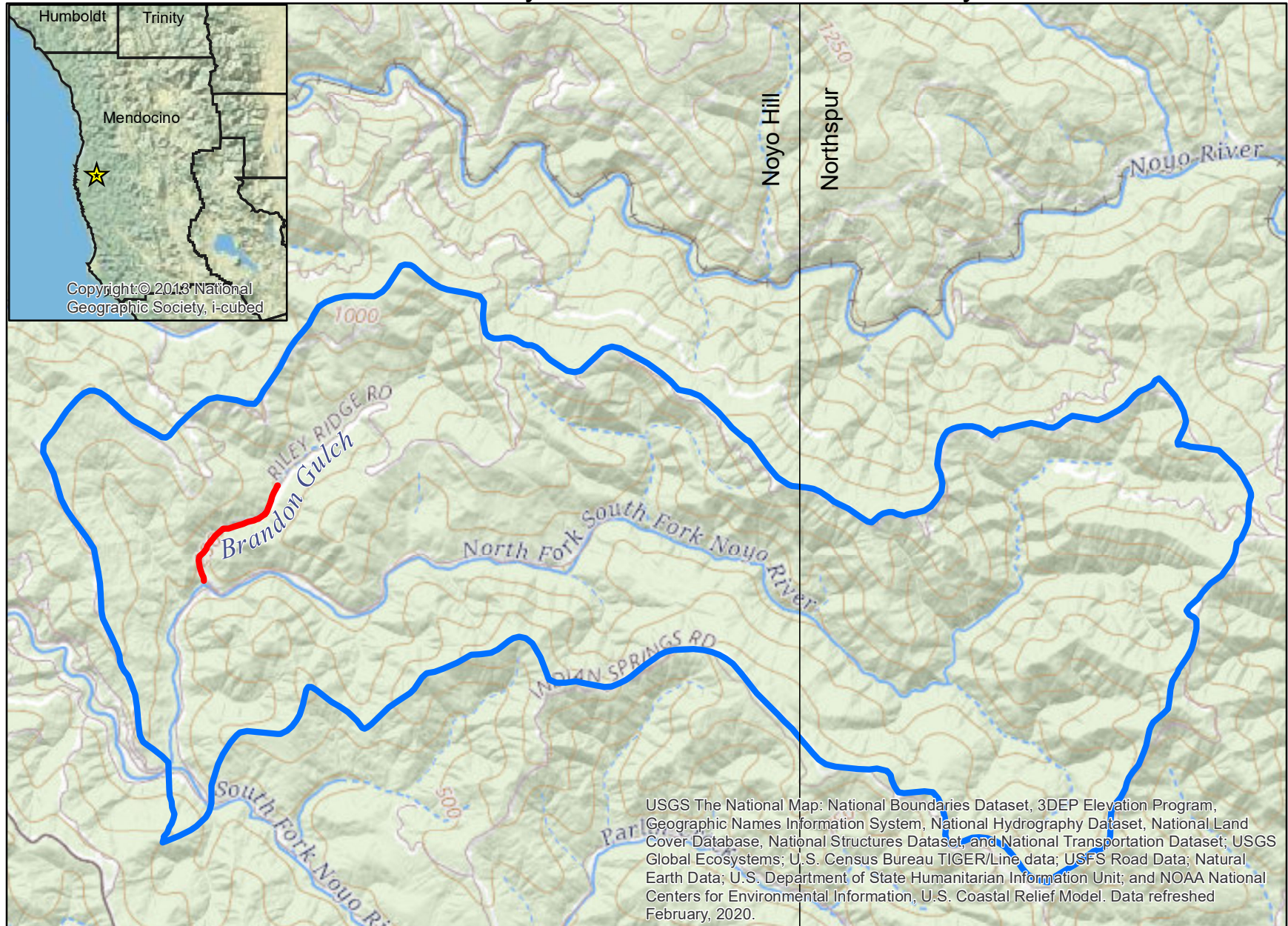
- Brandon Gulch Features
- Upstream & Downstream Ends of Project Reach
- PSS1A Wetland
- Brandon Gulch Project Reach



0 0.05 0.1 0.2 0.3 0.4 0.5 Miles



Watershed Map  
Brandon Gulch Coho Habitat Enhancement Project  
Mendocino Land Trust  
Brandon Gulch, Noyo Hill Quad, Mendocino County, CA



- Brandon Gulch Project Reach
- USGS Quads
- North Fork South Fork Noyo River Sub-Watershed



0 0.25 0.5 1 1.5 2 Miles



## Selected Elements by Scientific Name

### California Department of Fish and Wildlife

### California Natural Diversity Database



**Query Criteria:** Quad< IS </span>(Noyo Hill (3912346)<span style="color:Red"> OR </span>Northspur (3912345)<span style="color:Red"> OR </span>Comptche (3912335)<span style="color:Red"> OR </span>Mathison Peak (3912336)<span style="color:Red"> OR </span>Mendocino (3912337)<span style="color:Red"> OR </span>Fort Bragg (3912347)<span style="color:Red"> OR </span>Inglenook (3912357)<span style="color:Red"> OR </span>Dutchmans Knoll (3912356)<span style="color:Red"> OR </span>Sherwood Peak (3912355))

Possible species within the Noyo Hill and surrounding quads for 1725864 - Brandon Gulch Coho Stream Habitat Enhancement Project, Mendocino County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Abronia umbellata</i> var. <i>breviflora</i> pink sand-verbena	PDNYC010N4	None	None	G4G5T2	S2	1B.1
<i>Accipiter gentilis</i> northern goshawk	ABNKC12060	None	None	G5	S3	SSC
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
<i>Agrostis blasdalei</i> Blasdale's bent grass	PMPOA04060	None	None	G2	S2	1B.2
<i>Arboreus pomo</i> Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
<i>Arctostaphylos nummularia</i> ssp. <i>mendocinoensis</i> pygmy manzanita	PDERI04280	None	None	G3?T1	S1	1B.2
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Ascapus truei</i> Pacific tailed frog	AAABA01010	None	None	G4	S3S4	SSC
<i>Astragalus agnicidus</i> Humboldt County milk-vetch	PDFAB0F080	None	Endangered	G2	S2	1B.1
<i>Atractelmis wawona</i> Wawona riffle beetle	IICOL58010	None	None	G3	S1S2	
<i>Blennosperma nanum</i> var. <i>robustum</i> Point Reyes blennosperma	PDAST1A022	None	Rare	G4T2	S2	1B.2
<i>Bombus caliginosus</i> obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
<i>Brachyramphus marmoratus</i> marbled murrelet	ABNNN06010	Threatened	Endangered	G3	S2	
<i>Calamagrostis crassiglumis</i> Thurber's reed grass	PMPOA17070	None	None	G3Q	S2	2B.1
<i>Calileptoneta wapiti</i> Mendocino leptonetid spider	ILARAU6040	None	None	G1	S1	
<i>Calystegia purpurata</i> ssp. <i>saxicola</i> coastal bluff morning-glory	PDCON040D2	None	None	G4T2T3	S2S3	1B.2
<i>Campanula californica</i> swamp harebell	PDCAM02060	None	None	G3	S3	1B.2



# Selected Elements by Scientific Name

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### California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b>Carex californica</b> California sedge	PMCYP032D0	None	None	G5	S2	2B.2
<b>Carex lenticularis var. limnophila</b> lagoon sedge	PMCYP037A7	None	None	G5T5	S1	2B.2
<b>Carex livida</b> livid sedge	PMCYP037L0	None	None	G5	SH	2A
<b>Carex lyngbyei</b> Lyngbye's sedge	PMCYP037Y0	None	None	G5	S3	2B.2
<b>Carex saliniformis</b> deceiving sedge	PMCYP03BY0	None	None	G2	S2	1B.2
<b>Carex viridula ssp. viridula</b> green yellow sedge	PMCYP03EM5	None	None	G5T5	S2	2B.3
<b>Castilleja ambigua var. humboldtiensis</b> Humboldt Bay owl's-clover	PDSCR0D402	None	None	G4T2	S2	1B.2
<b>Castilleja litoralis</b> Oregon coast paintbrush	PDSCR0D012	None	None	G3	S3	2B.2
<b>Castilleja mendocinensis</b> Mendocino Coast paintbrush	PDSCR0D3N0	None	None	G2	S2	1B.2
<b>Charadrius nivosus nivosus</b> western snowy plover	ABNNB03031	Threatened	None	G3T3	S2	SSC
<b>Chorizanthe howellii</b> Howell's spineflower	PDPGN040C0	Endangered	Threatened	G1	S1	1B.2
<b>Clarkia amoena ssp. whitneyi</b> Whitney's farewell-to-spring	PDONA05025	None	None	G5T1	S1	1B.1
<b>Coastal and Valley Freshwater Marsh</b> Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
<b>Coastal Brackish Marsh</b> Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
<b>Coelus globosus</b> globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
<b>Collinsia corymbosa</b> round-headed Chinese-houses	PDSCR0H060	None	None	G1	S1	1B.2
<b>Coptis laciniata</b> Oregon goldthread	PDRAN0A020	None	None	G4?	S3?	4.2
<b>Cornus canadensis</b> bunchberry	PDCOR01040	None	None	G5	S2	2B.2
<b>Corynorhinus townsendii</b> Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
<b>Cuscuta pacifica var. papillata</b> Mendocino dodder	PDCUS011A2	None	None	G5T1	S1	1B.2
<b>Emys marmorata</b> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC





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<b><i>Entosphenus tridentatus</i></b> Pacific lamprey	AFBAA02100	None	None	G4	S4	SSC
<b><i>Erethizon dorsatum</i></b> North American porcupine	AMAFJ01010	None	None	G5	S3	
<b><i>Erigeron supplex</i></b> supple daisy	PDAST3M3Z0	None	None	G2	S2	1B.2
<b><i>Erysimum concinnum</i></b> bluff wallflower	PDBRA160E3	None	None	G3	S2	1B.2
<b><i>Erysimum menziesii</i></b> Menzies' wallflower	PDBRA160R0	Endangered	Endangered	G1	S1	1B.1
<b><i>Erythronium revolutum</i></b> coast fawn lily	PMLIL0U0F0	None	None	G4G5	S3	2B.2
<b><i>Eucyclogobius newberryi</i></b> tidewater goby	AFCQN04010	Endangered	None	G3	S3	
<b><i>Fen</i></b> Fen	CTT51200CA	None	None	G2	S1.2	
<b><i>Fratercula cirrhata</i></b> tufted puffin	ABNNN12010	None	None	G5	S1S2	SSC
<b><i>Gilia capitata ssp. pacifica</i></b> Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
<b><i>Gilia millefoliata</i></b> dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
<b><i>Grand Fir Forest</i></b> Grand Fir Forest	CTT82120CA	None	None	G1	S1.1	
<b><i>Hemizonia congesta ssp. congesta</i></b> congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
<b><i>Hesperovax sparsiflora var. brevifolia</i></b> short-leaved evax	PDASTE5011	None	None	G4T3	S3	1B.2
<b><i>Hesperocyparis pygmaea</i></b> pygmy cypress	PGCUP04032	None	None	G1	S1	1B.2
<b><i>Horkelia marinensis</i></b> Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
<b><i>Hydrobates homochroa</i></b> ashy storm-petrel	ABNDC04030	None	None	G2	S2	SSC
<b><i>Juncus supiniformis</i></b> hair-leaved rush	PMJUN012R0	None	None	G5	S1	2B.2
<b><i>Lasiurus cinereus</i></b> hoary bat	AMACC05030	None	None	G3G4	S4	
<b><i>Lasthenia californica ssp. bakeri</i></b> Baker's goldfields	PDAST5L0C4	None	None	G3T1	S1	1B.2
<b><i>Lasthenia californica ssp. macrantha</i></b> perennial goldfields	PDAST5L0C5	None	None	G3T2	S2	1B.2



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<b><i>Lathyrus palustris</i></b> marsh pea	PDFAB250P0	None	None	G5	S2	2B.2
<b><i>Lilium maritimum</i></b> coast lily	PMLIL1A0C0	None	None	G2	S2	1B.1
<b><i>Lycopodium clavatum</i></b> running-pine	PPLYC01080	None	None	G5	S3	4.1
<b><i>Mendocino Pygmy Cypress Forest</i></b> Mendocino Pygmy Cypress Forest	CTT83161CA	None	None	G2	S2.1	
<b><i>Microseris borealis</i></b> northern microseris	PDAST6E030	None	None	G5	S1	2B.1
<b><i>Mitellastra caulescens</i></b> leafy-stemmed mitrewort	PDSAX0N020	None	None	G5	S4	4.2
<b><i>Navarretia leucocephala ssp. bakeri</i></b> Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
<b><i>Northern Coastal Salt Marsh</i></b> Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
<b><i>Noyo intersessa</i></b> Ten Mile shoulderband	IMGASC5070	None	None	G2	S2	
<b><i>Oenothera wolffii</i></b> Wolf's evening-primrose	PDONA0C1K0	None	None	G2	S1	1B.1
<b><i>Oncorhynchus kisutch pop. 4</i></b> coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G5T2T3Q	S2	
<b><i>Oncorhynchus mykiss irideus pop. 16</i></b> steelhead - northern California DPS	AFCHA0209Q	Threatened	None	G5T2T3Q	S2S3	
<b><i>Packera bolanderi var. bolanderi</i></b> seacoast ragwort	PDAST8H0H1	None	None	G4T4	S2S3	2B.2
<b><i>Pandion haliaetus</i></b> osprey	ABNKC01010	None	None	G5	S4	WL
<b><i>Phacelia insularis var. continentis</i></b> North Coast phacelia	PDHYD0C2B1	None	None	G2T2	S2	1B.2
<b><i>Pinus contorta ssp. bolanderi</i></b> Bolander's beach pine	PGPIN04081	None	None	G5T2	S2	1B.2
<b><i>Piperia candida</i></b> white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
<b><i>Plebejus idas lotis</i></b> lotis blue butterfly	IILEPG5013	Endangered	None	G5TH	SH	
<b><i>Pleuropogon hooverianus</i></b> North Coast semaphore grass	PMPOA4Y070	None	Threatened	G2	S2	1B.1
<b><i>Progne subis</i></b> purple martin	ABPAU01010	None	None	G5	S3	SSC
<b><i>Puccinellia pumila</i></b> dwarf alkali grass	PMPOA531L0	None	None	G4?	SH	2B.2



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<b><i>Ramalina thrausta</i></b> angel's hair lichen	NLLEC3S340	None	None	G5?	S2S3	2B.1
<b><i>Rana aurora</i></b> northern red-legged frog	AAABH01021	None	None	G4	S3	SSC
<b><i>Rana boylei</i></b> foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
<b><i>Rhyacotriton variegatus</i></b> southern torrent salamander	AAAAJ01020	None	None	G3G4	S2S3	SSC
<b><i>Rhynchospora alba</i></b> white beaked-rush	PMCYP0N010	None	None	G5	S2	2B.2
<b><i>Sanguisorba officinalis</i></b> great burnet	PDROS1L060	None	None	G5?	S2	2B.2
<b><i>Sidalcea malachroides</i></b> maple-leaved checkerbloom	PDMAL110E0	None	None	G3	S3	4.2
<b><i>Sidalcea malviflora ssp. purpurea</i></b> purple-stemmed checkerbloom	PDMAL110FL	None	None	G5T1	S1	1B.2
<b><i>Sphagnum Bog</i></b> Sphagnum Bog	CTT51110CA	None	None	G3	S1.2	
<b><i>Taricha rivularis</i></b> red-bellied newt	AAAAF02020	None	None	G2	S2	SSC
<b><i>Taxidea taxus</i></b> American badger	AMAJF04010	None	None	G5	S3	SSC
<b><i>Trifolium buckwestiorum</i></b> Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1
<b><i>Trifolium trichocalyx</i></b> Monterey clover	PDFAB402J0	Endangered	Endangered	G1	S1	1B.1
<b><i>Triquetrella californica</i></b> coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
<b><i>Usnea longissima</i></b> Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2
<b><i>Viola palustris</i></b> alpine marsh violet	PDVIO041G0	None	None	G5	S1S2	2B.2

Record Count: 97