Introduction:

The Eel River Watershed Improvement Group (ERWIG) will add 24 instream structures along 0.7 miles of Little Sproul Creek. The structures will be placed at locations that ERWIG and the California Conservation Corps (CCC) found suitable for large woody debris (LWD) placement and which will be beneficial to coho salmon (*Oncorhynchus kistuch*). The structures will contain a total of 49 logs, including 45 key pieces as defined in Table 1 of the 2019 CDFW FHR PSN. Coho salmon have been documented throughout the project reach. This project will provide immediate shelter, velocity refugia, and increased pool quality, to the benefit of coho salmon.

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 I, Part VII (https://www.wildlife.ca.gov/Grants/FRGP/Guidance).

Objective(s):

The objective of this project is to build 24 LWD structures along 0.7 miles of Little Sproul Creek. The structures will contain 49 pieces of LWD, 45 of which will be key pieces. These structures will provide shelter, velocity refugia and will increase pool quality to benefit coho salmon, Chinook salmon (*Oncorhynchus tshawystcha*) and steelhead trout (*Oncorhynchus mykiss*). Additionally, 200 redwood seedlings will be planted to increase canopy density and to improve the stream valley microclimate.

Project Description:

Location:

The project is located on Little Sproul Creek, a tributary to Sproul Creek, tributary to the South Fork Eel River. It is located near the town of Garberville, CA in Township 4 South, Range 3 East, Section 28 of the Garberville 7.5 Minute U.S. Geological Survey Quadrangle. The downstream extent of the project reach is 6,500 feet from the confluence with Sproul Creek and extends upstream 0.7 miles. The middle of the project reach is at 40.08174 degrees north latitude and -123.85306 degrees west longitude.

Project Set Up:

ERWIG Staff:
-ERWIG Executive Director: Tasks 1 & 7. Contract oversight and reporting will be conducted by ERWIG Executive Director with assistance from the ERWIG Project Manager.

-ERWIG Project Manager: Tasks 1, 3, 4, 6 and 7. Will assist with contract oversight, invoicing, and reporting. Will manage all aspects of project implementation.

Subcontractors:
-Edwards Excavation & Restoration (LTO): Task 4. Will be responsible for falling trees as the source of Large Wood for the project.
-CCC Corpsmembers: Task 4. Under supervision of the Conservationist 1 will move the logs into place according to design specifications.
-Archaeology/Botany Subcontractor: Task 2. Will conduct botanical and archeological surveys and prepare CEQA reports.
-Paleontology survey crew: Task 2. Will conduct paleontological surveys and prepare CEQA report.
-Registered Professional Forestor (RPF): Task 3. Will make sure trees chosen for project use are appropriate.
-Wailaki Nonprofit (Tree Planters): Task 5. Will plant the trees for the project and will check for survival after one year, will re-plant trees if necessary.

Materials:

Materials needed for this project include: Griphoist TU-32: Used to move the biggest logs into place; Griphoist TU-28: Used to move the smaller logs into place; Chainsaws: Used to buck up trees, limb trees, and for clearing dead trees that are hazards or in way of the project; Bio-bar oil: A fish-friendly chainsaw bar oil that will be used in all chainsaws involved in this project; Mainline cables: Used in griphoist to move logs; Redwood seedlings: Used to plant the riparian zone; Misc. Gripping Materials- shear pins, hammers, gripbox handle presses, etc.: used to fix gripboxes that suffer minor breakdowns.

Tasks:

Task 1: Project Management and Administration: Grant oversight including invoicing and reporting will be conducted by Grantee Executive Director and Project Manager (Staff). Upon final execution of the Grant and prior to receiving a Notice to Proceed, Grantee shall deliver the following items to the CDFW Grant Manager: 1. Request to spend project funds in order to prepare for implementation (e.g., obtain permits, secure subcontracts, purchase supplies, apply for a Streambed Alteration Agreement, etc.). Requests shall be sent by email or telephone. 2. Access agreement that will be project specific and meet grant agreement requirements. 3. Subcontractor Agreements. A written copy of the sub agreement shall be submitted to the CDFW Grant Manager. The subcontract shall include specific language which establishes the rights of the auditors of the State to examine the records of the subcontractor relative to the services and materials provided under the grant. 4. CEQA survey interim reports for archaeological and botanical surveys. Interim reports shall be delivered prior to receiving notice to proceed, as part of the Notification of Lake or Streambed

Alteration Application (LSAA) package. Final archaeological, botanical and paleontological surveys shall be delivered prior to the End Term date. 5. Send Grantor LSAA with a check for the most current permit fee. The Grantee shall notify the CDFW Grant Manager a minimum of 10 business days prior to the beginning of project implementation.

Task 2. CEQA Surveys: Survey teams will conduct archeological and botanical surveys within the project reach to fulfill CEQA requirements for FRGP. Interim survey reports will be delivered to CDFW Grant Manager prior to receiving a Notice to Proceed. Paleontological survey crew will conduct paleontological research and surveys and prepare reports.

Task 3. Site Preparation: The ERWIG Project Manager will finalize site specific designs based on channel morphology, live tree location, and LWD availability. They will submit designs for CDFW Project Manager approval. The ERWIG Project Manager will flag features for wood selection, staging, and installation, clear brush as needed, and work with RPF to identify trees for falling. Pre-project photos and metrics will be collected by ERWIG. Tools and materials will be purchased by ERWIG prior to the start of implementation and on an as needed basis throughout the project.

Task 4. LWD Structure Construction: With approval from the CDFW grant manager and under the direction of the ERWIG Project Manager, site construction on 24 LWD features will begin. Features construction will involve cutting down riparian trees, this will be accomplished by the LTO with guidance from the RPF. CCC Corpsmembers will move LWD into position using a grip hoist come along. Where feasible, the CCC will use live trees to wedge the logs into place. Corpsmembers will be supervised by a trained Conservationist 1 (C1) and the ERWIG Project Manager. Erosion control methods will be employed by the CCC as required at each structure if there is potential for erosion of soil into the stream channel. To address concerns over invasive species this project will follow the ERWIG Aquatic Invasive Species Decontamination Protocol, which is compatible with the CDFW Aquatic Invasive Species Decontamination Protocol.

Task 5. Riparian Planting: A tree planting crew will return in the winter following project implementation to plant 200 redwood seedlings, with a primary focus in areas lacking sufficient conifer cover or riparian vegetation. A random selection of 50 trees will be marked and re-visited a year from planting. If less than 80% of the marked trees survive, additional trees will be planted to bring the number of surviving trees back to 200.

Task 6. Post Project Photo & Data Collection: Following implementation ERWIG will take post-project photos and quantitative implementation metrics will be collected which satisfy the Project Annual Progress Reports and Final Report.

Task 7. Reporting: ERWIG Staff will write and deliver Annual Reports, Draft and Final Report to CDFW Grant Manager.

Deliverables:

Task 1: Project Management and Administration: 1600 Permit, Subcontractor Agreements, Access Agreements, Invoices, Invoice Progress Reports.

Task 2. CEQA Surveys: Interim and Final Survey Reports.

Task 3. Site Preparation: Finalized design plans, flagged equipment access routes, pre-project photos and metrics.

Task 4. LWD Structure Construction: Twenty-four LWD structures made up of 49 logs, including 45 key pieces.

Task 5. Riparian Planting: Planting of 200 redwood seedlings.

Task 6. Post Project Photo & Data Collection: Post-project metrics and photos.

Task 7. Reporting: Yearly Annual Report, Draft Final Report in electronic format, Final Report in electronic and hard copy formats.

Timelines:

Task 1: Project Management and Administration: 04/01/2020 to 02/28/2022.

Task 2. CEQA Surveys: 04/30/2020 to 06/30/2020.

Task 3. Site Preparation: 07/01/2020 to 07/31/2020.

Task 4. LWD Structure Construction: 08/03/2020 to 09/30/2020.

Task 5. Riparian Planting: 12/01/2020 to 01/31/2022.

Task 6. Post Project Photo & Data Collection: 10/01/2020 to 01/31/2021.

Task 7. Reporting: 01/31/2021 to 01/31/2022.

Additional Requirements: The Grantee 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 the California Department of Fish and Wildlife.

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. Any and 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 California Department of Fish & Wildlife 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.

The Grantee shall notify the Grantor Project Manager a minimum of five working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for Grantor personnel to oversee the implementation of the water diversion plan and the safe removal and relocation of salmonids and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:

a. Fish dewatering and relocation activities shall only occur between June 15 and October 31 of each year.

b. Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.

c. The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW Grant Manager and pursuant to conditions in the USACE Regional General Permit and NMFS Biological Opinion.

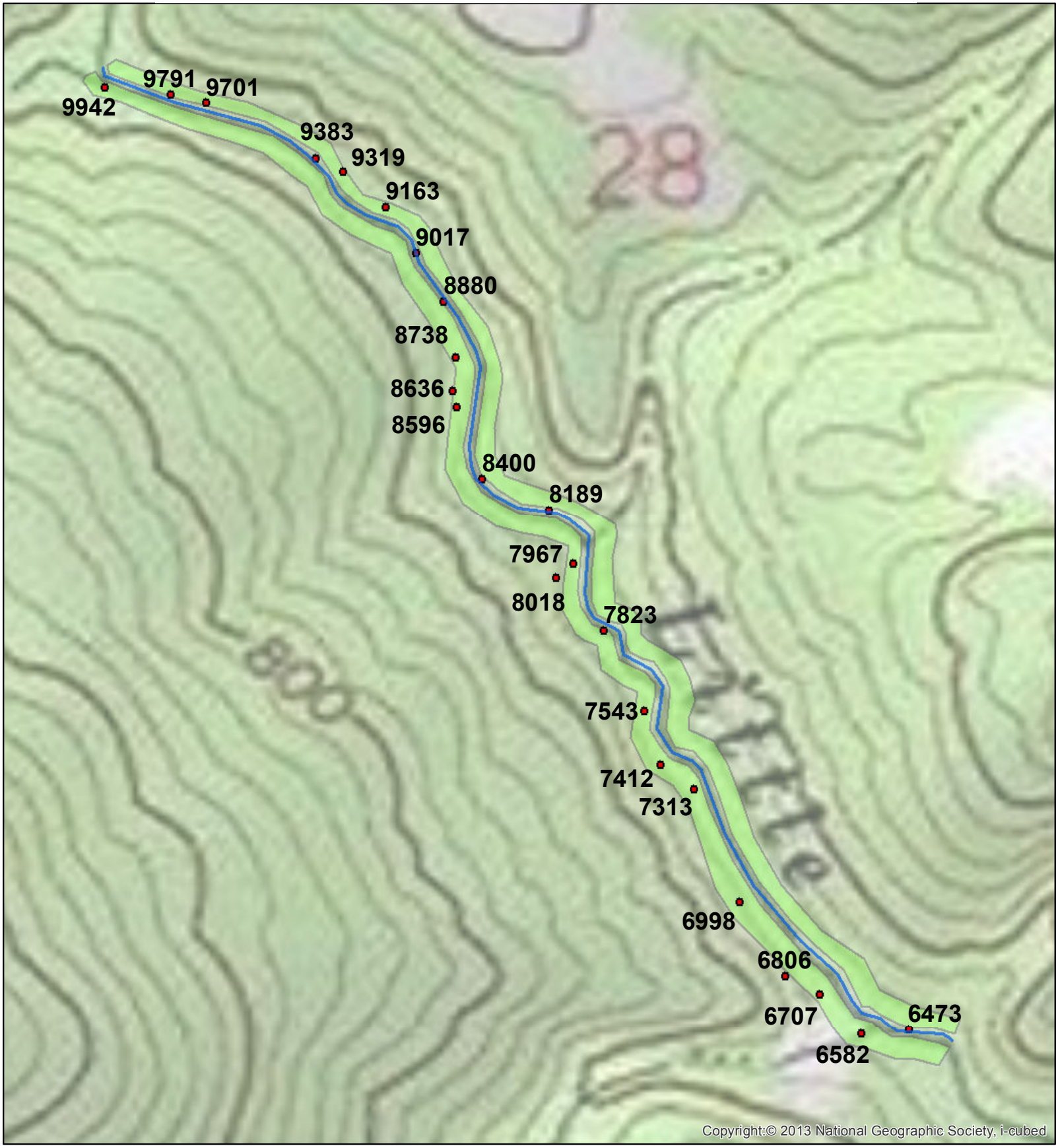
d. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.

e. USFWS Approved fisheries biologists will provide fish relocation data via the Grantee to the CDFW Grant Manager on a form provided by CDFW.

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

All habitat improvements will follow techniques described in the *California Salmonid Stream Habitat Restoration Manual.* 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.

Little Sproul Habitat Enhancement Feature Map
Little Sproul Creek, Garberville Quad, Humboldt County
Eel River Watershed Improvement Group



Little Sproul Project Reach

Little Sproul Features

Riparian Planting Area

0 0.1 0.2 Miles

N

Eel River Watershed Improvement Group
April 2019

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

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

Possible species within the Garberville and surrounding quads for 3103 Little Sproul Habitat Enhancement, Humboldt County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arabis mcdonaldiana McDonald's rockcress	PDBRA06150	Endangered	Endangered	G3	S3	1B.1
Arborimus pomo Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
Arctostaphylos stanfordiana ssp. raichei Raiche's manzanita	PDERI041G2	None	None	G3T2	S2	1B.1
Ascaphus truei Pacific tailed frog	AAABA01010	None	None	G4	S3S4	SSC
Astragalus agnicidus Humboldt County milk-vetch	PDFAB0F080	None	Endangered	G2	S2	1B.1
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	None	G2G3	S1	
Calamagrostis foliosa leafy reed grass	PMPOA170C0	None	Rare	G3	S3	4.2
Castilleja litoralis Oregon coast paintbrush	PDSCR0D012	None	None	G3	S3	2B.2
Castilleja mendocinensis Mendocino Coast paintbrush	PDSCR0D3N0	None	None	G2	S2	1B.2
Ceanothus foliosus var. vineatus Vine Hill ceanothus	PDRHA040D6	None	None	G3T1	S1	1B.1
Coptis laciniata Oregon goldthread	PDRAN0A020	None	None	G4?	S3?	4.2
Empidonax traillii brewsteri little willow flycatcher	ABPAE33041	None	Endangered	G5T3T4	S1S2	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Eriogonum kelloggii Kellogg's buckwheat	PDPGN083A0	None	Endangered	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Erythronium oregonum giant fawn lily	PMLIL0U0C0	None	None	G4G5	S2	2B.2
Erythronium revolutum coast fawn lily	PMLIL0U0F0	None	None	G4G5	S3	2B.2
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Gentiana setigera Mendocino gentian	PDGEN060S0	None	None	G2	S2	1B.2
Gilia capitata ssp. pacifica Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
Howellia aquatilis water howellia	PDCAM0A010	Threatened	None	G3	S2	2B.2
Kopsiopsis hookeri small groundcone	PDORO01010	None	None	G4?	S1S2	2B.3
Mitellastra caulescens leafy-stemmed mitrewort	PDSAX0N020	None	None	G5	S4	4.2
Montia howellii Howell's montia	PDPOR05070	None	None	G3G4	S2	2B.2
Myotis evotis long-eared myotis	AMACC01070	None	None	G5	S3	
Myotis thysanodes fringed myotis	AMACC01090	None	None	G4	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Northern Interior Cypress Forest Northern Interior Cypress Forest	CTT83220CA	None	None	G2	S2.2	
Noyo intersessa Ten Mile shoulderband	IMGASC5070	None	None	G2	S2	
Oncorhynchus kisutch pop. 2 coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	G4T2Q	S2?	
Oncorhynchus mykiss irideus pop. 36 summer-run steelhead trout	AFCHA0213B	None	None	G5T4Q	S2	SSC
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Pekania pennanti fisher - West Coast DPS	AMAJF01021	None	Threatened	G5T2T3Q	S2S3	SSC
Piperia candida white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
Rana boylii foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Rhyacotriton variegatus southern torrent salamander	AAAAJ01020	None	None	G3G4	S2S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Sedum laxum ssp. eastwoodiae Red Mountain stonecrop	PDCRA0A0L1	None	None	G5T2	S2	1B.2
Sidalcea malachroides maple-leaved checkerbloom	PDMAL110E0	None	None	G3	S3	4.2
Silene campanulata ssp. campanulata Red Mountain catchfly	PDCAR0U0A2	None	Endangered	G5T3Q	S3	4.2
Taricha rivularis red-bellied newt	AAAAF02020	None	None	G4	S2	SSC
Tracyina rostrata beaked tracyina	PDAST9D010	None	None	G2	S2	1B.2
Upland Douglas Fir Forest Upland Douglas Fir Forest	CTT82420CA	None	None	G4	S3.1	
Usnea longissima Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3

Record Count: 48