

Introduction:

The Eel River Watershed Improvement Group (ERWIG) will add 28 instream structures containing 131 pieces of large wood (LW), including 19 pieces with rootwads attached, along 0.7-miles (3,696 feet) of Somerville Creek. The structures will benefit Coho and Chinook salmon, as well as steelhead, all of which have been documented in the project reach. The South Fork Eel River Watershed Assessment (CDFW, 2014) puts Somerville Creek in the Western Subbasin (WS) of the SF Eel River watershed. The assessment indicates that the WS has a pool quality, pool depth, and pool shelter suitability ratings of "low" and that Somerville Creek is in the refugia category of "medium potential". A 2017 stream habitat inventory survey of Somerville Creek performed in 2017 by CDFW recommended an increase in woody cover in the pools and flatwater habitat units. An ERWIG/CCC LW survey found 18 pieces of LW in the project reach, which is well short of the "good" threshold value as defined in the SONCC Coho Recovery Plan (NMFS, 2014).

ERWIG 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, Section VII <https://www.wildlife.ca.gov/Grants/FRGP/Guidance>).

Objective(s):

The objective of this project is to construct 28 LW features along 0.7-miles of Somerville Creek. These features will contain 131 pieces of LW, including 19 pieces with rootwads attached. The addition of these structures will enhance spawning and rearing habitats for both adult and juvenile salmonids and raise the LW count in the project reach from an average of 26 to 213 pieces of LW per mile.

Project Description:

Location:

This project is located on Somerville Creek, a tributary to Redwood Creek, which is a tributary to the South Fork Eel River on the Briceland 7.5 Minute U.S. Geological Survey Quadrangle map. The downstream extent of the project reach is located 0.25-miles upstream from the confluence with Redwood Creek. The reach extends upstream 0.7-miles. Project coordinates are 40.1029 ° north latitude, -123.8914 ° west longitude at the center of the project work reach on mainstem Somerville Creek.

Project Set Up:

- Eel River Watershed Improvement Group (ERWIG) Executive Director will assist with contract oversight and reporting.
- ERWIG Project Manager will assist with contract oversight, invoicing, and reporting and manage all aspects of project implementation as well as plant trees.
- Edwards Excavation & Restoration, Licensed timber Operator and Excavator Operator (LTO & EO) will be responsible for falling trees and placing logs and boulders according to design plans when equipment access is available.
- California Conservation Corps (CCC) Under supervision of the Conservationist 1, CCC corpsmembers will anchor the structures according to design and anchoring specifications.
- Paleontologist, TBD, will conduct paleontological research and prepare CEQA report.
- Archaeologist/Botanist TBD will conduct botanical and archaeological research and surveys and prepare CEQA report.
- Registered Professional Forester (RPF) will make sure trees chosen for project use are appropriate.

Materials:

- Anchoring Hardware: 1` rebar, 5/8` wire rope, 5/8` wire rope clamps, and nuts and plates (washers). These items are used to anchor logs to live trees, boulders, bedrock and other logs.
- Tools: Portable band saws, wood drills, chain saws, and timber bits.
- Hilti epoxy glue.
- Misc items: Small items such as chuck keys, allen wrenches, shear pins, hammers, socket wrenches and band saw blades.
- Erosion control materials (straw and native seed).
- 131 logs - Approximately half of the logs will be donated by the landowner and half will be purchased.
- Trees and Native Plants: Will be used to plant areas disturbed by project activities and areas within the project reach that are lacking canopy cover.

Tasks:

Task 1: Project Management and Administration

Grant oversight including invoicing and reporting will be conducted by Permittee Executive Director and Project Manager (Staff). Upon final execution of the Grant and prior to receiving a Notice to Proceed, Permittee 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 made 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 subcontractor 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 the 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 Permittee shall notify the CDFW Grant Manager a minimum of 10 business days prior to the beginning of project implementation.

Task 2. CEQA Surveys

Archaeological, botanical, and paleontological subcontractors will conduct research and 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.

Task 3. Site Preparation

The ERWIG Project Manager will finalize site specific designs based on channel morphology, equipment access, and large wood availability. They will submit designs for CDFW Project Manager approval. The ERWIG Project Manager will flag sites for wood selection, staging, and installation, clear brush as needed, and designate staging areas for wood along the project reach. A wet ford stream crossing will be used to access features 16-28. This crossing will be used two times by an excavator (in and out) and eight times by an ATV for excavator fueling. ERWIG staff will set up fish exclusion fencing at the stream crossing. ERWIG staff will assist CDFW in fish and amphibian removal at the stream crossing. The crossing will be used for the shortest time frame possible, and for no more than two weeks, at which time ERWIG will remove the fencing and rehab the banks. 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. A porta potty will be rented and placed on site.

Task 4. Large Wood Structure Construction

Upon approval from the CDFW Project Manager, construction will begin on 28 LW features under the direction of the ERWIG Project Manager. Some features may involve cutting down or uprooting trees, which will be accomplished by the LTO or the licensed equipment operator, respectively. The RPF will sign off on all

trees chosen for use in the project. The licensed equipment operator will place downed logs into the stream in accordance with design plans. When necessary, CCC Corpsmembers will move logs into position using a grip hoist come-along. Site construction, wood placement, and anchoring will be in accordance with the CDFW California Salmonid Stream Habitat Restoration Manual, Section VII (Flosi et al. 2010). The project will utilize living riparian trees as anchors by wedging the logs between them where feasible. CCC Corpsmembers will anchor the sites according to design and anchoring specifications. Corpsmembers will use one-inch threaded rebar to anchor logs to mature riparian trees and other logs. Holes will be drilled through the logs and their anchor trees using a wood drill, timber bit, and drill bit extensions when necessary. One-inch rebar will be inserted through the log and secured with nuts and washers. 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 and along equipment corridors to eliminate the possibility of sediment transport to the stream. To address concerns over invasive species this project will follow the ERWIG Aquatic Invasive Species Decontamination Protocol, which is in line with the CDFW Aquatic Invasive Species Decontamination Protocol.

Task 5. Riparian Planting

ERWIG staff will return in the winter following project implementation to plant 80 trees, with a primary focus in areas lacking sufficient canopy cover or riparian vegetation and areas disturbed by project implementation.

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, a draft final report, and a final report.

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. Large Wood Structure Construction

28 LW structures made up of 131 logs.

Task 5. Riparian Planting

Eighty trees planted along the project reach.

Task 6. Post Project Photo & Data Collection

Post-project metrics and photos.

Task 7. Reporting

Annual reports, draft final report in electronic format, final report in electronic and hard copy formats.

Timelines:

Task 1 - Project Management and Administration. April 1, 2021 to February 28, 2023.

Task 2 - CEQA Surveys. April 30, 2021 to December 31, 2021.

Task 3. Site Preparation. June 14, 2021 to July 12, 2021.

Task 4. Large Wood Structure Construction. July 12, 2021 to October 31, 2021.

Task 5. Riparian Planting. December 1, 2021 to March 31, 2022.

Task 6. Post Project Photo & Data Collection. October 1, 2021 to February 1, 2023.

Task 7. Reporting. November 1, 20-21 to February 28, 2023.

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 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 Permittee shall notify the CDFW 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 CDFW 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 Permittee will implement the following measures to minimize harm and mortality to listed salmonids:

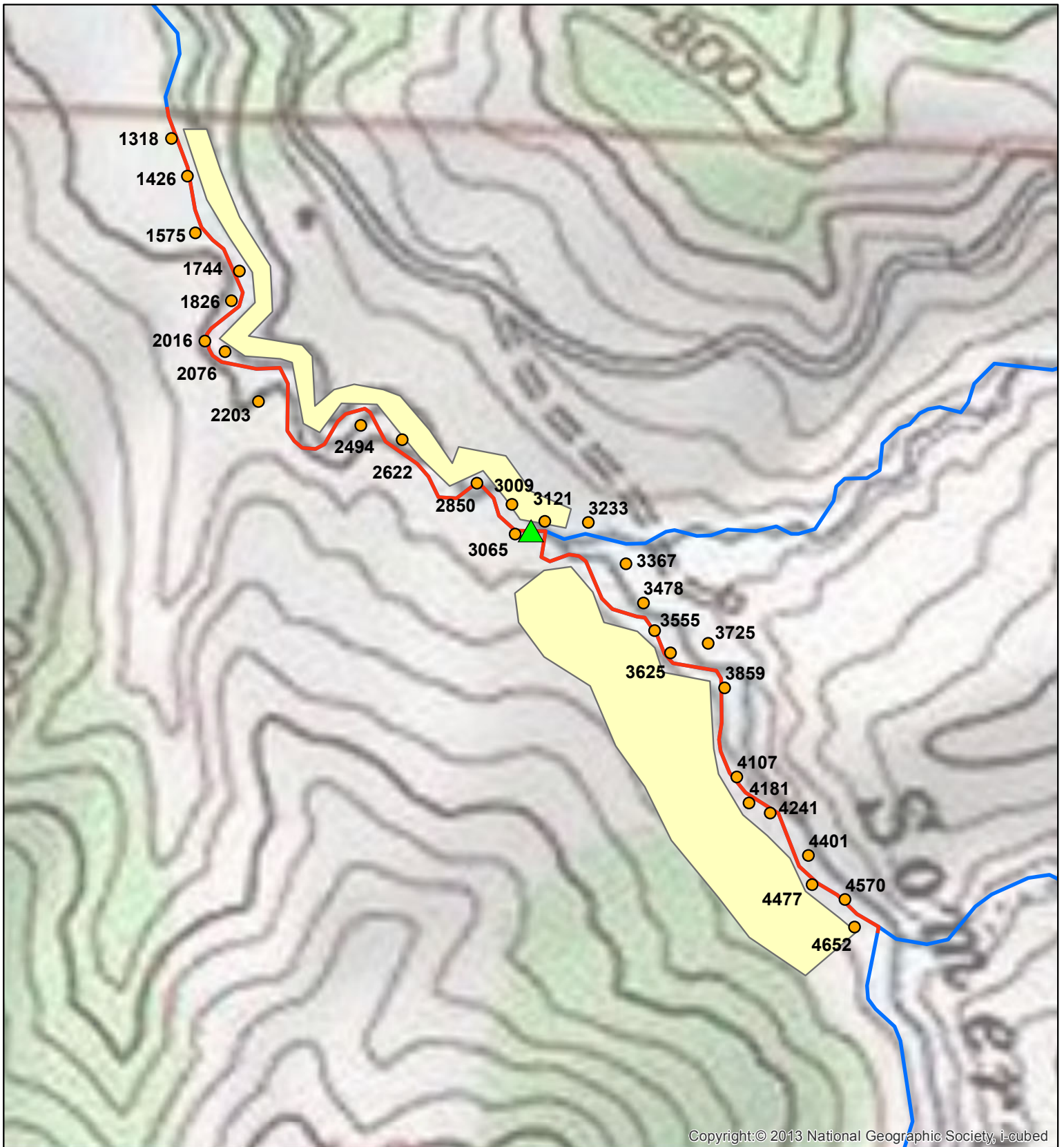
- a. Fish dewatering and relocation activities shall only occur between June 15 and October 31 of each year.
- b. Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.
- c. The Permittee 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 Permittee to the CDFW Grant Manager on a form provided by CDFW.

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

Project Location Topographic Map

Somerville Creek Instream Restoration Project

Briceland Quad



- Somerville Features
- ▲ Equipment Crossing
- Somerville Creek Project Reach
- Planting Area

0 0.1 0.2 Miles

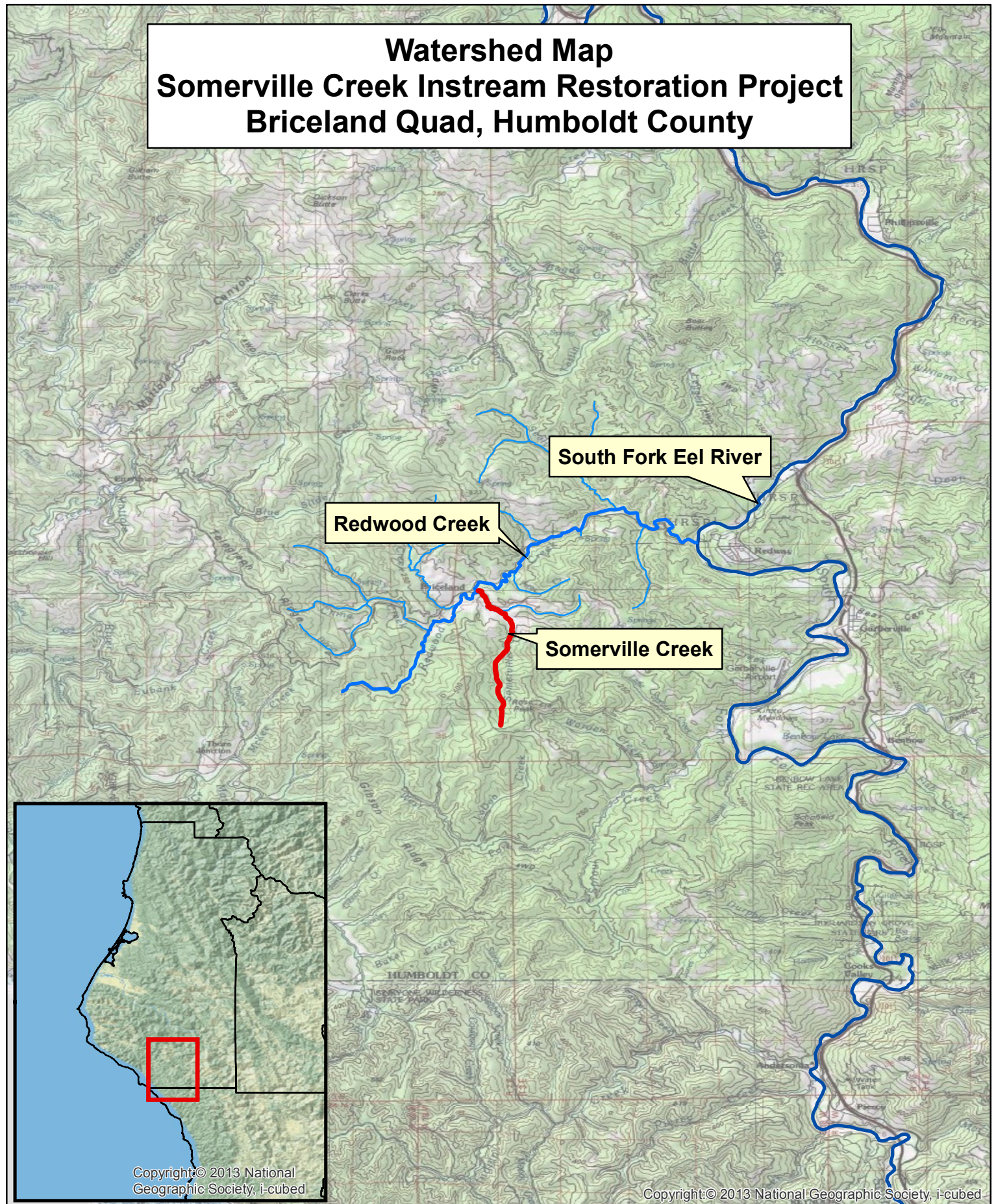
Eel River Watershed Improvement Group
March 2020



Watershed Map

Somerville Creek Instream Restoration Project

Briceland Quad, Humboldt County



- Somerville Creek
- Redwood Creek
- South Fork Eel River

0 0.75 1.5 3 4.5 6 Miles

Eel River Watershed Improvement Group
March 2020





Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Briceland (4012318) OR Bear Harbor (3912388) OR Shelter Cove (4012411) OR Honeydew (4012421) OR Ettersburg (4012328) OR Miranda (4012327) OR Garberville (4012317) OR Piercy (3912387))

Possible species within the Briceland and surrounding quads for 1723381 - Somerville Creek Instream Restoration Project, Humboldt County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Accipiter cooperii</i> Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Aquila chrysaetos</i> golden eagle	ABNKC22010	None	None	G5	S3	FP
<i>Arboreus pomo</i> Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
<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>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>Calamagrostis foliosa</i> leafy reed grass	PMPOA170C0	None	Rare	G3	S3	4.2
<i>Carex arcta</i> northern clustered sedge	PMCYP030X0	None	None	G5	S1	2B.2
<i>Castilleja litoralis</i> Oregon coast paintbrush	PDSCR0D012	None	None	G3	S3	2B.2
<i>Castilleja mendocinensis</i> Mendocino Coast paintbrush	PDSCR0D3N0	None	None	G2	S2	1B.2
<i>Clarkia amoena ssp. whitneyi</i> Whitney's farewell-to-spring	PDONA05025	None	None	G5T1	S1	1B.1
<i>Coptis laciniata</i> Oregon goldthread	PDRAN0A020	None	None	G4?	S3?	4.2
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
<i>Empidonax traillii brewsteri</i> little willow flycatcher	ABPAE33041	None	Endangered	G5T3T4	S1S2	
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Erethizon dorsatum</i> North American porcupine	AMAFJ01010	None	None	G5	S3	
<i>Erythronium oregonum</i> giant fawn lily	PMLIL0U0C0	None	None	G4G5	S2	2B.2



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Erythronium revolutum</i> coast fawn lily	PMLIL0U0F0	None	None	G4G5	S3	2B.2
<i>Eumetopias jubatus</i> Steller (=northern) sea-lion	AMAJC03010	Delisted	None	G3	S2	
<i>Falco peregrinus anatum</i> American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
<i>Gilia capitata ssp. pacifica</i> Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
<i>Helminthoglypta arrosa monticola</i> mountain shoulderband	IMGASC2035	None	None	G2G3T1	S1	
<i>Kopsiopsis hookeri</i> small groundcone	PDORO01010	None	None	G4?	S1S2	2B.3
<i>Lasthenia californica ssp. macrantha</i> perennial goldfields	PDAST5L0C5	None	None	G3T2	S2	1B.2
<i>Lathyrus palustris</i> marsh pea	PDFAB250P0	None	None	G5	S2	2B.2
<i>Mitellastra caulescens</i> leafy-stemmed mitrewort	PDSAX0N020	None	None	G5	S4	4.2
<i>Montia howellii</i> Howell's montia	PDPOR05070	None	None	G3G4	S2	2B.2
<i>Myotis evotis</i> long-eared myotis	AMACC01070	None	None	G5	S3	
<i>Myotis thysanodes</i> fringed myotis	AMACC01090	None	None	G4	S3	
<i>Myotis yumanensis</i> Yuma myotis	AMACC01020	None	None	G5	S4	
<i>Noyo intersessa</i> Ten Mile shoulderband	IMGASC5070	None	None	G2	S2	
<i>Oncorhynchus kisutch pop. 2</i> coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	G4T2Q	S2?	
<i>Oncorhynchus mykiss irideus pop. 36</i> summer-run steelhead trout	AFCHA0213B	None	Candidate Endangered	G5T4Q	S2	SSC
<i>Pandion haliaetus</i> osprey	ABNKC01010	None	None	G5	S4	WL
<i>Pekania pennanti</i> fisher - West Coast DPS	AMAJF01021	Endangered	Threatened	G5T2T3Q	S2S3	SSC
<i>Piperia candida</i> white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
<i>Rhyacotriton variegatus</i> southern torrent salamander	AAAAJ01020	None	None	G3G4	S2S3	SSC



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Sidalcea malachroides</i> maple-leaved checkerbloom	PDMAL110E0	None	None	G3	S3	4.2
<i>Sidalcea malviflora ssp. patula</i> Siskiyou checkerbloom	PDMAL110F9	None	None	G5T2	S2	1B.2
<i>Taricha rivularis</i> red-bellied newt	AAAAF02020	None	None	G4	S2	SSC
<i>Upland Douglas Fir Forest</i> Upland Douglas Fir Forest	CTT82420CA	None	None	G4	S3.1	
<i>Usnea longissima</i> Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2

Record Count: 45