Bear Creek Sediment Reduction and Salmonid Recovery Project 2020

Introduction:

The Trout Unlimited, Inc. (TU) will decommission 3.5-miles of streamside riparian road to prevent potential future delivery of 6,555 cubic yards of sediment to Bear Creek. The project will also lightly upgrade 1.53-miles of road including five stream crossings to allow access to the project area. Sixteen acres of upslope area will be treated including eighteen (18) stream crossings and twelve (12) potential fill failures.

This project is necessary because excessive sediment inputs from legacy timber practices continue to adversely impact the channel geomorphology and fish habitat of the Bear Creek watershed, in the form of intermittent channel-stored sediments within the upper main stem and its tributaries, and as high turbidity levels during wet weather conditions (NMFS, 2008; PWA 2018). Decommissioning the highest threat roads in Bear Creek, would achieve a 35% reduction in overall road density, which exceeds the numeric target of 10% reduction outlined in Action Step UC-NCSW-23.2.3.1 from the Coastal Multispecies Plan and Recovery Action 23.2.3.1 from the CCC Coho Recovery plan.

The Permitee 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 II, Part X CDFG (2002) [https://www.wildlife.ca.gov/Grants/FRGP/Guidance].

Objective(s):

This project will result in the permanent removal of 3.5-miles of streamside riparian road which represents almost 100% of the streamside road along Bear Creek. Crews will also lightly upgrade 1.53-miles of midslope truck road to provide the only access to the project area. The project will prevent 6,555 cubic yards of future anthropogenic sediment from entering a focal species stream.

Project Description:

Location:

The Bear Creek Watershed is located west of Leggett, California in the Usal Creek Watershed intersects Usal Creek approximately 3.5-miles upstream of its confluence with the Pacific Ocean. Streamside road removal will occur on the mainstem and the largest tributaries for approximately 3.5-miles. The project is located in the Hales Grove and Piercy United States Geologic Survey Quadrangle maps.Project coordinates are 39.8757º north latitude, -123.8377º west longitude at the center point of the project.

Project Set Up:

TU Project Management:

- The Trout Unlimited Project Manager 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.), scheduling, implementation oversight, invoicing, reporting, and agency and landowner communications. 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, deliver the landowner access agreement, subcontracts, and assure all permits are finalized (if required). This task will occur throughout the life of the project
- The TU Project Manager will assist the TU Project Coordinator with processing invoices, financial tracking, and reporting.
- TU Project Coordinators, will assist in processing general grant management and reporting.
- TU's California Director will be the authorized agent to sign the agreement.
- Pacific Watershed Associates (construction manager) will complete implementation of the road decommissioning.
- PWA Engineering Geologist will provide project and construction oversight and QA/QC of project products.
- PWA Associate Scientist (Project Manager) will manage project layout, construction oversight, monitoring, and reporting tasks.
- PWA Natural Resource Specialists (Project Biologists) will assist with biological resource identification and mitigation (i.e. amphibians, birds, fish), conduct electrofishing, and conduct wetland identification, protection and overall avoidance measures as needed.
- PWA Senior. Scientist (paleontologist) will provide paleontology surveys for CEQA.
- PWA Staff Scientists will conduct surveys, be on-site to layout the proposed heavy equipment construction treatments in the project area, construction oversight, pre-, during-, and post-construction monitoring (as required by the FLAR focus), and data entry.
- PWA GIS staff will provide field layout maps, digitize layout and as-built project data, and develop report maps.
- PWA clerical staff will track and monitor hours and create invoices during the project.
- PWA Principal Geologist will supervise all PWA work elements. The will be done by the
- PWA Engineering Geologist and Associate Scientist will work on final reporting of the project with assistance and oversight from the Trout Unlimited Project Manager.
- Wylatti Resource Management will be the heavy equipment contractor for the project and will be providing all heavy equipment for the project

including Excavator, Dozer, Water Truck, Dump Truck, Low Boy, Pilot Car, Labor for erosion control, and truck and trailer.
- Woodbenders Revegetation will conduct revegetation.
- The Redwood Forest Foundation, Inc (RFFI) Botanist will lead a botanical resource assessment of the project area.
- The William Rich and Associates (WRA) Principal Investigator and Research Associate will conduct the required archaeological surveys to meet the requirements of CEQA.

Materials:

- Approximately 1267 trees (provided by RFFI as cost share) will be planted by Woodbenders Revegetation.
- Rip-Rap sized material will be required to construct armored fill stream crossings and slope protection on upgraded stream crossings on the access road.
- Approximately 218 bales of straw mulch and approximately 150 pounds of native seed will be used to re-plant bare earth areas and reduce surface erosion. Debris/Trash Pump used during construction to pump clean stream flow around the construction features and manage turbidity.
- Pressure washer to be used to decontaminate heavy equipment.
- 500ft. of 6ft. flex pipe to be used for stream dewatering.
- 240ft of 24” diameter culvert to upgrade one stream crossings on the access road and to construct Spittler crossings where the road network crosses flowing streams site.
- Electrofishing gear to conduct fish relocations including a 3` centrifugal pump, exclusion fencing and water quality testing equipment.

Tasks:

Task 1 - Grant Administration and Project Management:
Trout Unlimited personnel will provide all contracting oversight and administration as pursuant to grant and regulatory guidelines. This includes but is not limited to obtaining permits, securing contracts, scheduling, implementation oversight, invoicing, reporting, and agency and landowner communications. Upon Final execution of the Grant and prior to receiving a Final Notice to Proceed, TU personnel will deliver the landowner access agreements, executed subcontracts, and assure all permits are secured. Additionally, the TU Project Coordinator will be available to assist with invoicing and financial tracking. This task will occur throughout the life of the project.

Task 2 - Environmental Compliance, Pre-project layout, and Equipment Mobilization:
PWA will coordinate with RFFI and WRA to conduct the appropriate surveys for listed species and archeological resources. RFFI and WRA staff will complete necessary cultural resource and botanical surveys of the project area. Prior to implementation all required botanical, biotic, cultural, and paleontological survey information will be provided to TU and CDFW. TU will be responsible for securing the CDFW 1600 LSAA from the Grant Manager prior to requesting the Notice to Proceed with project implementation. Interim CEQA reports and biotic survey results will be provided to the CDFW Grant Manager with the LSAA application as required. No equipment work shall occur in advance of the final NTP. Exclusionary fencing for salmonids and other aquatic species will be installed at the confluence of flowing tributaries to prevent upstream migration into the construction areas as deemed necessary by the grant manager, PWA NR Specialist, and the PWA Associate Scientist. This component of the project may require fish and amphibian exclusion and relocation. This task will be conducted by the PWA NR Specialist. PWA will flag heavy equipment access routes and construction boundaries (layout) as well as spoils disposal sites, equipment exclusion areas for biologic, wetland, or cultural resource protection, and LWD staging areas. They will also document the existing conditions on a subset of the stream crossings and setup photo point monitoring stations at the construction locations for final reporting. Pre-construction monitoring will be performed by PWA in a manner consistent with CDFW guidelines and as required by the FLAR focus.

Road opening, feature treatment, and erosion control - PWA will work with Wylatti heavy equipment operators to reopen the proposed road sites for equipment access and decommissioning treatments. All treatment prescriptions proposed in the project follow guidelines in the "Handbook for Forest, Ranch, and Rural Roads" (Weaver et al., 2015), and the "California Salmonid Stream Habitat Restoration Manual, Chapters 9 and 10" (CDFW, 1998; Weaver et al., 2006). Additionally, all equipment, vehicles and materials used to implement this project will be cleaned and treated in accordance with the TU Aquatic Invasive Species Decontamination Plan included in the supplemental documents with this proposal. Personal field gear and heavy equipment working in or near a stream will be decontaminated as well. Several methods will be employed to avoid the spread of invasive species during the implementation of the project. During this phase of the project, a qualified Biologist from PWA (NR Specialist), in coordination with the CDFW Project Manager, will install exclusionary fencing and remove any aquatic species form wetted channels where prudent. We anticipate this occurring on 1 class one stream crossing and possibly 3 other class II streams which may or may not exhibit surface flow during the construction window. Water quality parameters will be measured during this component of the project, if prudent, to assure protection of downstream resources.

Task 3 - Project Construction:
This task will be completed by Wylatti Resource Management with direct oversight from PWA staff. Low bed trucks will be used to move heavy equipment in and out of the project area at the beginning and end of the work season, these will require two pilot cars to move through the road system. An excavator and bulldozer will be used to reopen the road proposed for decommissioning by removing the vegetation and developing temporary stream crossings if prudent. A gasoline powered water pump will be used to protect water quality during installation of temporary crossings; these will be managed by a laborer. The excavator, bulldozer and dump truck will be used to remove the anthropogenic road fill material from the proposed stream crossing decommissioning features and other site-specific features specified for treatment. Similarly, they will be used to treat and restore all road surface drainage as they work their way out from the end of the road. A gas-powered water pump will be used to divert flow and protect water quality during decommissioning of live stream crossings; these will be managed by a laborer. Concurrently working with the excavator and bulldozer, the dump truck will end haul spoil from decommission areas to designated spoil disposal sites. The water truck will be used for achieving soil compaction and dust abatement to protect water quality and riparian vegetation, and laborers will be used to spread seed and straw, and plant trees and shrubs at completed construction sites. In accordance with the invasive species protocol included in this proposal, all heavy equipment will be cleaned before and after entering/leaving the work area.

Task 4 - Post-Implementation Surveys and Revegetation:
Post-construction monitoring, including photographic monitoring, and stream crossing profiles, will be performed by PWA consistent with the CDFW guidelines and as required by the FLAR focus. PWA will conduct post-decommissioning surveys on a subset of the stream crossings and reoccupy photopoints to document pre- and post-conditions at the feature locations. Where tree planting is required for erosion control, Woodbenders staff will complete planting activities during the winter intermediately following construction as soon as conditions allow.

Task 5 – Reporting:
TU and PWA will develop project reports (annual and a final project report), based on CDFW requirements, that documents work completed and the total costs to implement the project. Progress reports will be supplied to the Grant Manager for review in approval with reimbursement requests (no more frequently than monthly), Annual Reports will be submitted annually by December 1, and a Final Project Report will be prepared and submitted prior to grant close-out (including Final Project Budget and Final Invoice). Annual and final reports will include summaries of the following information as required: (1) general grant information, (2)location of work,(3) project access, (4)participating landowners name and address, (5) a description and analysis of the restoration and planning

person hours expended,(6) a quantified description of the results of the project, including as-built site information, (7) dates of work and the number of person hours expended, (8) labeled before-and-after photos of constructed sites, (10) GIS generated maps and shapefiles of the project area, and (11)monitoring checklists, databases, spreadsheets and any other data products produced during the grant term.

Deliverables:

Task 1 - Grant Administration and Project Management:
Project deliverables will be provided to the CDFW Grant Manager and includes the information listed below as well as any other documents pursuant to Grant requirements during the life of the project: Final Landowner Access Agreements; Notification and payment of LSAA/1600 Agreement Application; Progress Reports submitted with invoices, Annual Reports, and a Final Report, including Final Project Budget. The Final Report will include required information for the HU Project Type, such as as-built road log, actual performance measure by site, and project monitoring data (i.e. pre-/post-project photographs, pre-/post-project cross sectional profiles).

Task 2 - Environmental Compliance, Pre-project layout, and Equipment:
Final Site layout: Interim cultural resource, botanical, biological, wetland, and paleontological reports (completed prior to receiving Notice to Proceed); Fish relocation and water quality monitoring information (as required); CDFW LSAA Agreement; Final Notice to Proceed with project construction.

Task 3 - Project Construction:
Treatment of 32 specific sediment source features and permanent decommissioning 3.5 mi of abandoned road, and upgrade 5 stream crossings on the only available access road. The project will result in the total treatment of 5.3-miles of road.

Task 4 - Post-Implementation Surveys and Revegetation:
Actual performance measures by site, as-built road log, before and after photos, stream crossing profiles.

Task 5 – Reporting:
Progress Reports (pdf format); Annual Reports (pdf format); and Final Grant Report (cd and hard copy), including all pre-and post-project data produced as a part of the project; Final Invoice and Final Budget.

Timelines:

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

Task 2 - Environmental Compliance, Pre-project layout, and Equipment. April 15, 2021 to August 1, 2022.

Task 3 - Project Construction. June 30, 2021 to October 31, 2022**.**

Task 4 - Post-Implementation Surveys and Revegetation. July 30, 2021 to February 20, 2023.

Task 5 - Reporting. March 1, 2021 to February 28, 2023.

Additional Requirements:

The Permitee 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 Permitee 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 Permitee 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 Permitee 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 Permitee to the CDFW Grant Manager on a form provided by CDFW.

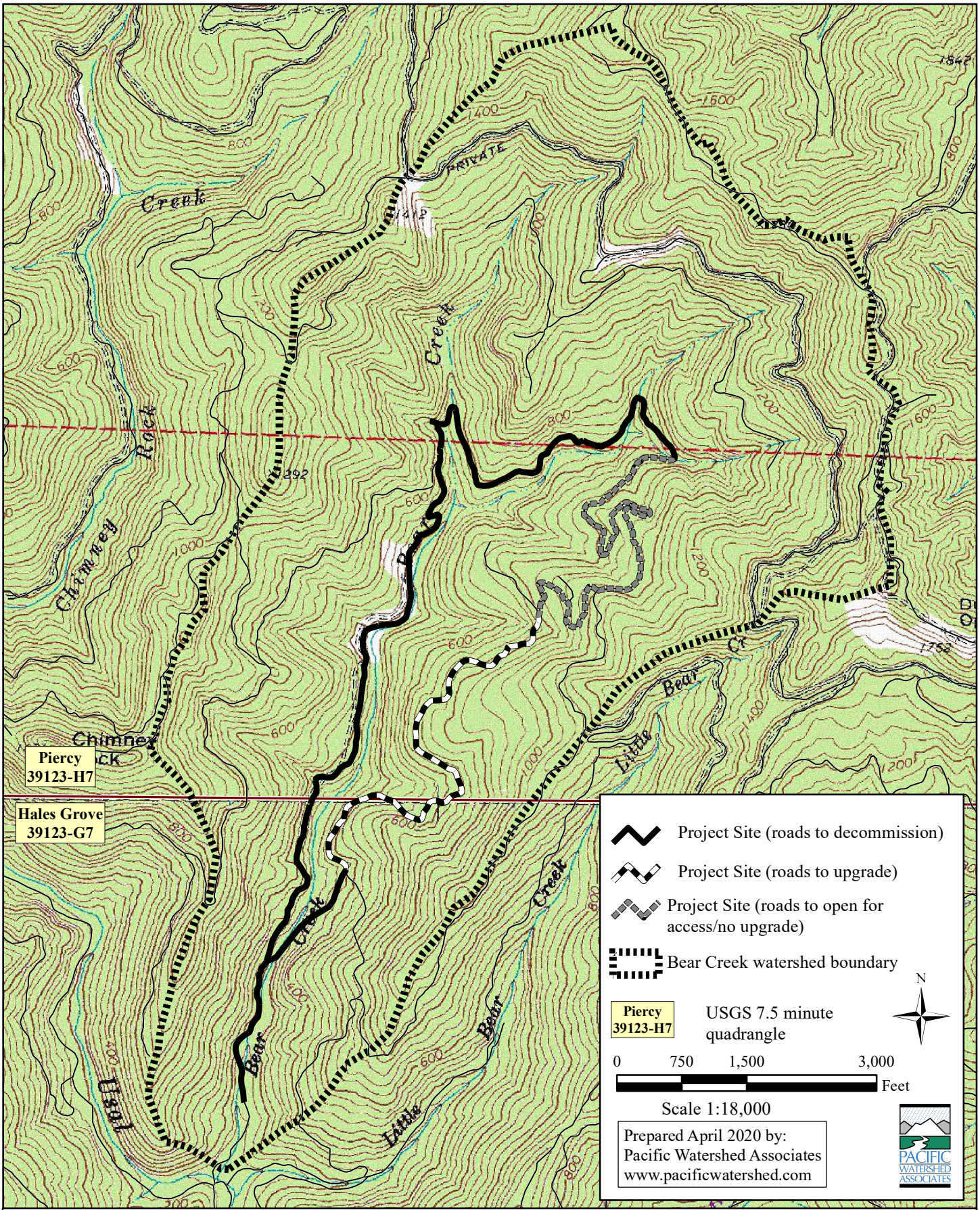
All road decommissioning will be done in accordance with techniques described in the Handbook for Forest and Ranch Roads, (PWA, 1994c.) and the *California Salmonid Stream Habitat Restoration Manual*, Volume II, Part X. All road upgrade and decommissioning sites and techniques shall be approved by the Grantor Project Manager before any equipment work takes place.

All crossings treated in fish bearing reaches of streams will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and the criteria for adult and juvenile salmonid fish passage as described in Volume II, Part IX of the *California Salmonid Stream Habitat Restoration Manual.*

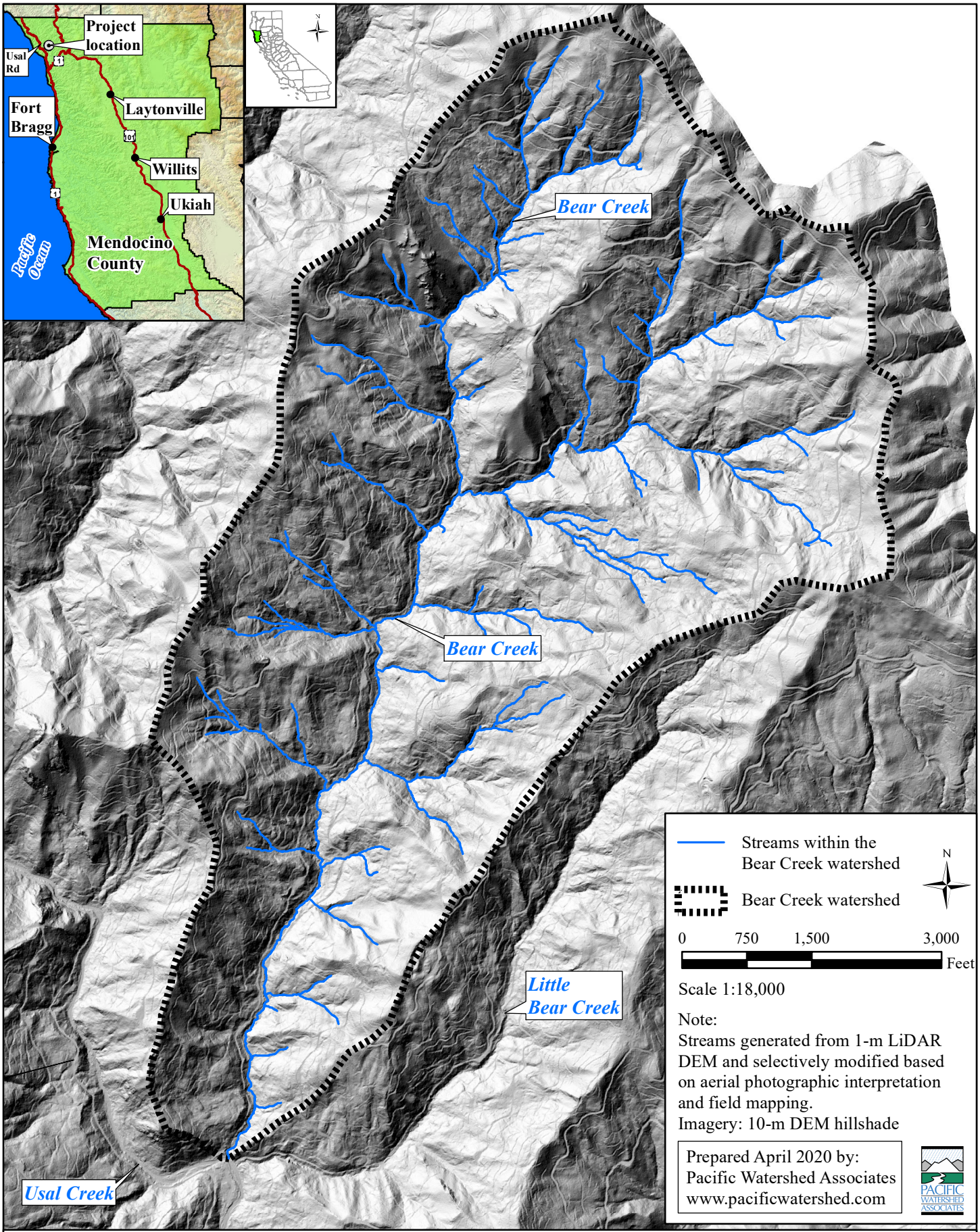
Seeding and mulching of all exposed soils shall be done for all slopes which may deliver sediment to a stream. Woody debris will be concentrated on finished slopes adjacent to stream crossings. The standard for success is 80% ground cover for broadcast planting of seed, after a period of three years. 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 insure the best chance of survival of the seedlings.

Sites that are expected to erode and deliver sediment to the stream are the only locations where work will be authorized for reimbursement under the terms of this agreement. Reimbursement will not be authorized for work done to improve aesthetics only.

The landowner or responsible party must sign an access agreement stating they agree to maintain the erosion control project for a period of not less than 10 years. Maintenance will consist of repair to the road or stream crossing to a level that will effectively reduce sediment from entering the stream. In the event of an act of nature which results in partial or complete failure of the project, the landowner or applicant will not be held responsible for costs incurred after the act of nature. Acts of nature include, but are not limited to floods, earthquakes, volcanic eruptions, and windstorms.



Map 1. Project location topographic map for the Bear Creek Sediment Reduction and Salmonid Recovery Project, Mendocino County, California. (Piercy and Hales Grove USGS 7.5' topographic quadrangles; Grantee/Applicant: Trout Unlimited)



Map 2. Watershed map for the Bear Creek Sediment Reduction and Salmonid Recovery Project, Mendocino County, California. Grantee/Applicant: Trout Unlimited

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Piercy (3912387) OR Hales Grove (3912377) OR Mistake Point (3912378) OR Bear Harbor (3912388) OR Briceland (4012318) OR Garberville (4012317) OR Harris (4012316) OR Noble Butte (3912386) OR Leggett (3912376))

Possible species within the Piercy and surrounding quads for 1723370 Bear Creek Sediment Reduction and Salmonid Recovery Project, Mendocino 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
Accipiter gentilis northern goshawk	ABNKC12060	None	None	G5	S3	SSC
Anodonta californiensis California floater	IMBIV04020	None	None	G3Q	S2?	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
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	Candidate Endangered	G2G3	S1	
Calamagrostis foliosa leafy reed grass	PMPOA170C0	None	Rare	G3	S3	4.2
Cardamine angulata seaside bittercress	PDBRA0K010	None	None	G4G5	S3	2B.1
Carex arcta northern clustered sedge	PMCYP030X0	None	None	G5	S1	2B.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
Clarkia amoena ssp. whitneyi Whitney's farewell-to-spring	PDONA05025	None	None	G5T1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Coptis laciniata Oregon goldthread	PDRAN0A020	None	None	G4?	S3?	4.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
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
Erythronium revolutum coast fawn lily	PMLIL0U0F0	None	None	G4G5	S3	2B.2
Eumetopias jubatus Steller (=northern) sea-lion	AMAJC03010	Delisted	None	G3	S2	
Gentiana setigera Mendocino gentian	PDGEN060S0	None	None	G2	S2	1B.2
Gilia capitata ssp. pacifica Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
Hesperocyparis pygmaea pygmy cypress	PGCUP04032	None	None	G1	S1	1B.2
Horkelia marinensis Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
Margaritifera falcata western pearlshell	IMBIV27020	None	None	G4G5	S1S2	
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	
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	Candidate Endangered	G5T4Q	S2	SSC
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Pekania pennanti fisher - West Coast DPS	AMAJF01021	Endangered	Threatened	G5T2T3Q	S2S3	SSC
Piperia candida white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
Rana aurora northern red-legged frog	AAABH01021	None	None	G4	S3	SSC
Rana boylii foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
Rhyacotriton variegatus southern torrent salamander	AAAAJ01020	None	None	G3G4	S2S3	SSC
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
Sidalcea malviflora ssp. patula Siskiyou checkerbloom	PDMAL110F9	None	None	G5T2	S2	1B.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
Thermopsis robusta robust false lupine	PDFAB3Z0D0	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: 53