Bull Creek Hamilton Reach Instream and Floodplain Habitat Restoration Project

2020

Introduction:

California Trout, Inc. (Permittee) will implement Bull Creek Hamilton Reach Instream and Floodplain Habitat Restoration Project. While the watershed currently has diminished but good quality habitat, Bull Creek was rated as containing high potential refugia habitat and there is high potential to provide high quality refugia habitat through implementation of restoration actions. Research indicates that overall fish habitat suitability conditions are improving, and further restoration is needed to accelerate recovery of salmonids. This project will create in-channel and off-channel winter and summer rearing habitat for juvenile salmonids and will enhance floodplain connectivity and riparian vegetation. The project will provide long term benefits to all life stages of salmonids in the Bull Creek watershed, reduce summer water temperature provide conditions for natural physical processes to accelerate habitat recovery including increased floodplain connectivity and lateral channel migration.

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

Objectives:

This project objective is to restore floodplain habitat along the Hamilton Sub-reach of Bull Creek. Design objectives include: (1) remediate legacy effects of sediment aggradation lingering from the catastrophic 1955 and 1964 floods; (2) restore and expand summer in-channel and winter off-channel rearing habitat; (3) increase large wood and wood jams to promote pool habitat creation and sediment sorting; and, (4) promote riparian forest regeneration to alleviate water temperature impairment.

Project Description:

Location:

Bull Creek is tributary to the South Fork Eel River, tributary to the Eel River, located in Humboldt County, California. Project coordinates at the center point or the project reach are 40.3441 north latitude and -124.0244 west longitude. The project is located on the Bull Creek 7.5 Minute U.S. Geological Survey (USGS) Quadrangle map.

Project Set Up:

The Permittee will provide all contracting oversight and administration including, but not limited to, obtaining permits, securing contracts, scheduling, invoicing, reporting, and agency and landowner communications.

Subcontractor California State Park (CSP) staff will oversee the construction management and implementation of the project. CSP will provide (1) assistance and support for development of the construction bid package, solicitation of bid, selection of contractor, and award of contract; (2) collection of source plant materials for seed, cuttings, and container stock, propagation of materials in a nursery until planting; (3) coordination, scheduling, and supervision of all construction activities at the project site, including equipment mobilization, stream dewatering, floodplain grading and hauling of materials to the spoil site, prairie restoration and tree removal and delivery to the project site, installation of engineered log jams in-channel and across the floodplain, final site contouring and installation of erosion control and site stabilization measures; (4) revegetation planning and implementation; and (5) as-built surveys and performance monitoring tasks.

Subcontractor Northern Hydrology and Engineering (NHE) will provide CSP with construction implementation services including (1) assistance and support for development of the construction bid package; (2) pre-construction site layout and staking; (3) construction supervision on building engineered log jams; (4) as-built surveys, and (5) project performance monitoring.

Subcontractor California Conservation Corps (CCC) will assist with collection of native seed and plant materials from the local area. They will also assist with hand planting and irrigation.

Subcontractor CalFire will assist with de-limbing and timber management operations at the Prairie site.

Subcontractor McBain Associates Inc. will provide assistance during vegetation flagging and revegetation efforts.

Subcontractor Construction Contractor will lead the dewatering effort and conduct all heavy equipment implementation work including floodplain grading, hauling of large wood material to the construction site, construction of engineered wood jams (EWJs), excavation of and construction of floodplain channels, off-channel habitat pond complex, alcoves and sediment basin, and erosion control installation.

Materials:

Exclusion Fencing and t-posts will be installed to surround and protect the sensitve vegetation areas on the floodplain. Water Pump and hoses will be installed at the upstream boundary of Hamilton Reach to aid in water diversion and channel dewatering during the in-channel construction work. Boulders will be used in engineered log jams as ballast to anchor large wood in the excavated hole. As much boulder as possible will be salvaged from removal of existing bank

armoring, and re-used for this purpose. Douglas fir logs will be salvagfed from CSP Prairie Restoration in the Cuneo Creek headwaters and used to construct instream habitat structures. Soil and planting containers will be used for plant propagation at CSP native plant nursery.

Tasks:

Task 1. Hamilton Reach Construction CEQA and Permit Compliance:
CSP and Permittee will prepare and submit all necessary permit applications necessary to ensure the project is conducted within local, state, and federal compliance laws and meets all general contracting and insurance standards. CSP will facilitate archaeological and botanical field surveys in collaboration with FRGP partners, will obtain a California Department of Fish and Wildlife (CDFW) Lake and Streambed Alteration Agreement (LSA or 1600 Agreement), and obtain a County Encroachment Permit from the Public Works Department. CSP will assemble Habitat Mitigation and Monitoring Plans specifying Best Management Practices (BMPs) to be followed by general contractor during the project construction phase.

Finally, CSP will consult with local CDFW staff regarding instream construction and stream dewatering plans, develop guidelines and procedures to protect aquatic habitat and wildlife species. CEQA has already been completed for the Prairie restoration/large wood harvest and CSP will complete a Storm Water Pollution Prevention Plan prior to implementation.

Task 2. Collect and Propagate Plant Materials:
CSP staff with assistance from CCC will be responsible for completion of this task. CSP will identify locations of source plant materials for seed, cuttings, and container stock. Plant materials will be collected from areas in or near the project location and propagated at either Del Norte Coast Redwood State Park native plant nursery or at Humboldt Redwood State Parks' (HRSP) on-site nursery and allowed to grow until they are ready to be planted. Plant collections will follow North Coast Redwood District's (NCRD) Genetic Integrity Guidelines.

To protect migratory nesting birds from impacts, the floodplain vegetation will be removed, using hand tools, outside their nesting period prior to implementation.

Task 3. Hamilton Reach Construction Implementation - Prairie Restoration:
CSP will oversee day to day construction management for quality control and perform compliance monitoring to ensure protection of resources. NHE will provide onsite construction oversight to ensure adherence to contract specifications. CSP will oversee archeological and tribal monitoring throughout construction activities of the project to ensure compliance.

Task 4. Prairie Restoration - Large Wood extraction:
CSP will oversee and conduct most tree harvest/large wood removal operations on the Prairie site. A CalFire crew will assist with harvest operations. Activities include mobilization of all materials and equipment to the Prairie site, including all heavy equipment, water trucks and tanks, portable toilets, generators, maintenance equipment, materials for water management (pumps, hoses, and liners), erosion and sediment control materials, spill containment and fire prevention materials, safety and first-aid supplies. CSP will ensure equipment is clean before entering the work area to prevent the spread of exotic invasive species. Pre-construction project layout will be conducted by CSP. Preconstruction erosion control measures will be installed, as required by permits and BMPs.

Prairie restoration, as a source for instream wood, will begin at the end of Northern Spotted Owl (NSO) breeding season the year prior to floodplain implementation. This source of instream wood is located at the headwaters of Cuneo Creek. Identified trees ranging in size from 24” to 36” diameter at breast height (DBH) will be removed with an excavator with their root wad intact.

Task 5. Floodplain Construction Preparation: Mobilization, Equipment Access, Construction Staking:
CSP and NHE will assist with completion of this task. CSP will provide day-to-day construction oversight and compliance monitoring of construction activities. The construction contractor will begin with vegetation clearing to the extent of grading boundaries and preparation of spoil sites. A large size excavator and bulldozer will likely complete this task. Initial rough excavations will occur in high production where large features exist such as the floodplain connector and the pond complex. NHE will assist CSP to determine the maximum dimensions and prescribed elevations. Dump trucks will end-haul spoil material in succession to the Hamilton Barn spoil sites across the street from the project area, where another bulldozer will spread and compact in lifts according to the site specifications. Initial floodplain grading will allow staging areas to develop for wood storage needed for channel structures. Initial operations will allow for set up and removing bulk floodplain material during the early summer months while stream flows decline, and NSO nesting season ends before instream channel construction begins.

Task 6. Floodplain Grading and Hauling; Import Wood Material:
This task will be completed by a qualified construction contractor. Day-to-day construction oversight will be performed by CSP and the Permittee will provide oversight support. At the Prairie restoration site, a heel boom, or similar type machine will load trees into end dump trucks capable of holding two log stems with root wads attached, or six logs per truck for tree materials without root wads. Tree stems and organic slash will be hauled in succession to the staging area on the floodplain to be offloaded and used in log jams, wood clusters, and

revegetation pits. If necessary, the primary construction contractor will subcontract this element to a logging company for efficiency.

Task 7. Dewatering, Fish Rescue, and Instream Construction:
CSP will lead block-net placement, fish relocation, and rescue with assistance from Permittee. The qualified construction contractor will lead dewatering and instream construction. Dewatering will occur only on a temporary basis at active instream work locations. CSP and Permittee will conduct monitoring during dewatering operations and implement BMPs to minimize impacts to Pacific lamprey. Clean streamflow will be dammed with small coffer dam and pumped around the project area. Turbid water generated within the active work area will be dammed before re-entering downstream and pumped to a temporary infiltration pond. Once dewatering and exclusion protection is in place, the construction contractor will begin in channel work to remove rocks from selected boulder structures and identified rock slope protection area to be reused as ballast in the four wood jams.

Task 8. Install Engineered Wood Jams:
The construction contractor will lead construction of the EWJs. NHE will provide oversight during construction of these structures to oversee adherence to design specifications for this task. Day-to-day assistance will be provided from CSP and Permittee. Each of the four wood jams will be constructed in 12 layers. Receiving holes 35 feet wide by 50 feet long will be excavated below scour depth to bedrock. The base layer will consist of an arrangement of vertical pile logs and 3-foot or greater diameter boulders. Voids will be backfilled with native bed material.

Successive layers will involve careful placement and weaving of wood pieces between vertical pile logs and horizontal key pieces, some with and some without root wads. Lower layers below thalweg will be backfilled with 3-foot or greater diameter boulders. Upper layers will be backfilled with native bed material and small woody debris for racking material. Bed material will backfill around the structures except at strategically placed scour hole locations. The EWJs are designed with a high degree of stability and are expected to withstand a 100-year flood following construction.

Task 9. Excavate Floodplain Channels, Swales, and Connector Channels:
The construction contractor will lead excavation and construction of floodplain channels, swales and connector channels outlined in the 100% designs. CSP will provide day-to-day oversight with general oversight support from Permittee. Detailed floodplain work may begin after instream work is finished. Floodplain lowering and connector channel will be excavated to design plan specifications. Clumps of established alder trees lining the main channel will remain in place, but additional high flow connections to the floodplain channel will be excavated between save vegetation areas. Spoil material will be hauled off with dump trucks

to the spoil location across the Mattole Road. Strategically placed wood clusters and revegetation pits/trenches will be installed at identified locations before heavy equipment access is cut off. CSP will conduct equipment operations at the spoils site as excavated material is delivered from the floodplain restoration site.

Task 10. Excavate Off-Channel Pond Complex, Alcoves, and Sediment Basin:
The construction contractor will lead excavation and construction of all off-channel habitat features following 100% designs. CSP will provide day-to-day oversight with general oversight support from Permittee. The pond complex is the final earthmoving task for the floodplain. This area of the project site will initially serve as staging area for wood storage during early phases of construction. The rough-in dimensions will be fine-tuned to the engineering plan depths and cross-sectional profiles. Connecter channels and the sediment basin area will be contoured, and the tributary will be realigned away from the Mattole Road toward a backwater alcove to reconnect the floodplain channel with the main channel. Wood clusters for habitat and cover will be installed in the pond where prescribed as access is eliminated. CSP will conduct equipment operations at the spoils site as excavated material is delivered from the floodplain restoration site.

Task 11. Demobilization, Erosion Control, and Re-watering:
The construction contractor will lead demobilization of the site, install erosion control, and re-watering of the channel. CSP, with assistance from NHE, will supervise final project site stabilization, installation of erosion control, and re-watering of stream channels (as needed), including at the Hamilton Floodplain project site and the spoils site. Re-watering of the main channel will take place immediately after instream work is completed when construction equipment moves onto floodplain to finish grading operations.

Task 12. Revegetation:
CSP will lead the revegetation construction and plant installation with general oversight from Permittee. McBain Associates Inc. will provide assistance during save-vegetation flagging and revegetation efforts. CCC crews will assist with revegetation and planting efforts. CSP will supervise vegetation management and revegetation during and after the construction phase. Revegetation of the project site will be accomplished by three general methods: 1) preserving desirable vegetation during construction as save-vegetation areas, 2) excavating revegetation cluster pits/trenches down to groundwater during construction, inserting willow or cottonwood cutting poles and woody debris to wick moisture toward the surface, and backfilling with organic material and finer grained alluvium, and 3) active replanting of native vegetation stock and casting seed at the appropriate season after construction is completed. Save-Vegetation will be mapped prior to construction, demarcated in the field during project staking, and reviewed with construction managers to ensure the plant protection. The save-tree areas increase the complexity of the floodplain and create lower velocity

zones on the downstream side during high flows. Planting clusters and trenches are designed throughout the graded area. Seven different configurations of planting clusters or trenches are designed. Both clusters and trenches require excavation of floodplain material and placement of woody debris that extends from the base of the hole/trench to the surface. This woody debris acts to wick moisture toward the surface. Gravel and cobble particles larger than 3-inches will be removed from the excavated floodplain material. Finer-grained sand and gravel (less than 2mm) will be stockpiled for re-use to backfill the planting trenches. Sand and gravel are mixed 50/50 with organics (wood chips and leaves to hold moisture) and replaced in the trench with willow or cottonwood cuttings. Revegetation with container stock and seed will follow planting designs where cluster pits were excavated during construction and will occur during late winter/early spring to ensure the best ground moisture conditions for survivorship. Four distinct revegetation zones, or types of planting clusters, will create a mosaic of vegetation patches that are appropriate to the geomorphic surfaces available across the floodplain.

Approximately 24 native plant species are currently in the vegetation design for use in Bull Creek. A seed mix (six species) will be broadcast over the planted and disturbed areas after construction and installation of individual bare root and container stock plants. Willow and cottonwood pole cuttings will have already been installed during construction into pits/trenches that were excavated to groundwater level. Non-permeable weed mats and tree protectors may be installed after revegetation is complete, to protect plant materials. Irrigation will be implemented as needed to aid in plant survival during the first three growing seasons.

Task 13. Conduct As-Built Surveys and Geomorphic Surveys:
NHE, assisted by CSP, will conduct post-construction as-built surveys. Final site photos will be collected during this time. Survey will include the channel thalweg through the entire project reach, at least 10 survey cross sections (partially re-using existing longer term cross sections in the reach) re-or newly monumented for long-term monitoring, and 2-dimensional topographic surveys of re-contoured areas of the floodplain to document volume and area changes resulting from construction. As-built surveys will include surface sediment composition mapping, quantifying the D50 particle sizes of each sediment facies to establish baseline sediment conditions. Post-construction surveys will be conducted during and after the first fall/winter to evaluate instream and floodplain hydraulic conditions and responses to one winter high flow regime. During winter flows (~50-80% 2-year exceedance flows), riffle crest thalweg and pool depths, water depths and velocities associated with constructed habitat features, reference cross sections, and off-channel ponds will be surveyed. Following winter flows, thalweg and cross section surveys will be repeated, and sediment scour and deposition will be re-mapped.

Deliverables:

Task 1: Completed permit package covering all operations.
Task 2: Plantings prepared to re-vegetate construction areas.
Task 3, Task 4, Task 5, and Task 6: State Park report on Prairie Restoration Activities.
Task 7: Biological report detailing dewatering activities.
Task 8: Installed Wood Jam Features.
Task 9: Floodplain designed according to plans.
Task 10: Construction of all off-channel habitat features outlined in the 100% designs.
Task 11: None.
Task 12: Re-vegetation operations will be documented in as-built surveys and re-vegetation monitoring report.
Task 13: As built and performance monitoring conducted pre- and post-construction according to Monitoring Plan.

Timelines:

Task 1: April 15, 2021 through April 30, 2022
Task 2: June 1, 2021 through October 31, 2022
Task 3, Task 4, Task 5, and Task 6: May 1, 2021 through July 31, 2022
Task 7: June 15, 2022 through September 30, 2022
Task 8: August 1, 2022 through October 31, 2022.
Task 9: June 1, 2022 through October 31, 2022.
Task 10: June 1, 2022 through October 31, 2022.
Task 11: April 1, 2021 through April 1, 2022
Task 12: April 1, 2021 through April 1, 2022
Task 13: September 1, 2022 through December 31, 2022

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 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.

The Permitee shall notify the CDFW a minimum of five working days before the project site is dewatered 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*.

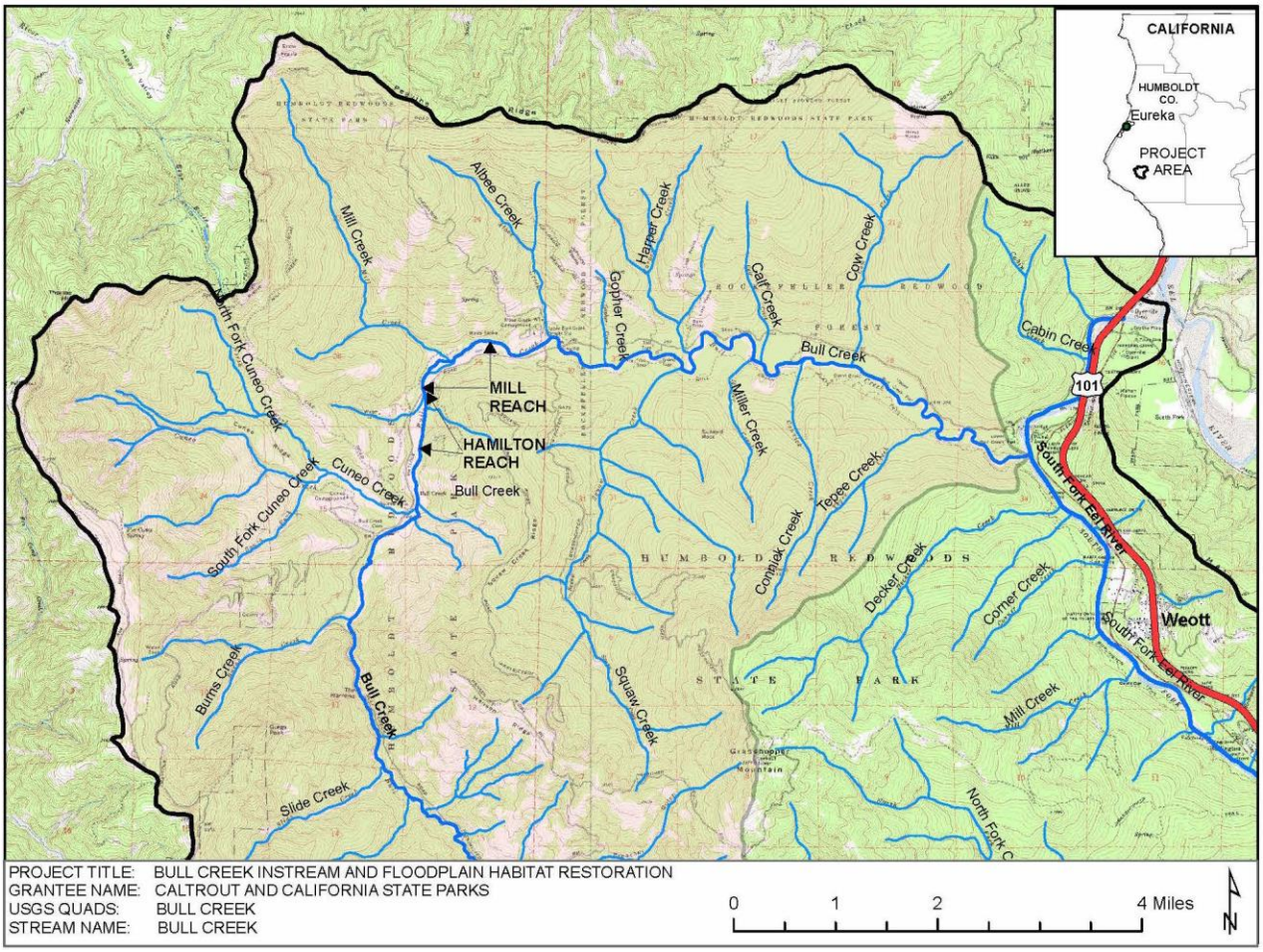
c. The Permittee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible as approved by the CDFW personnel and pursuant to conditions in the United State Army Corp of Engineers (USACE) Regional General Permit and National Marine Fisheries Service (NMFS) Biological Opinion.

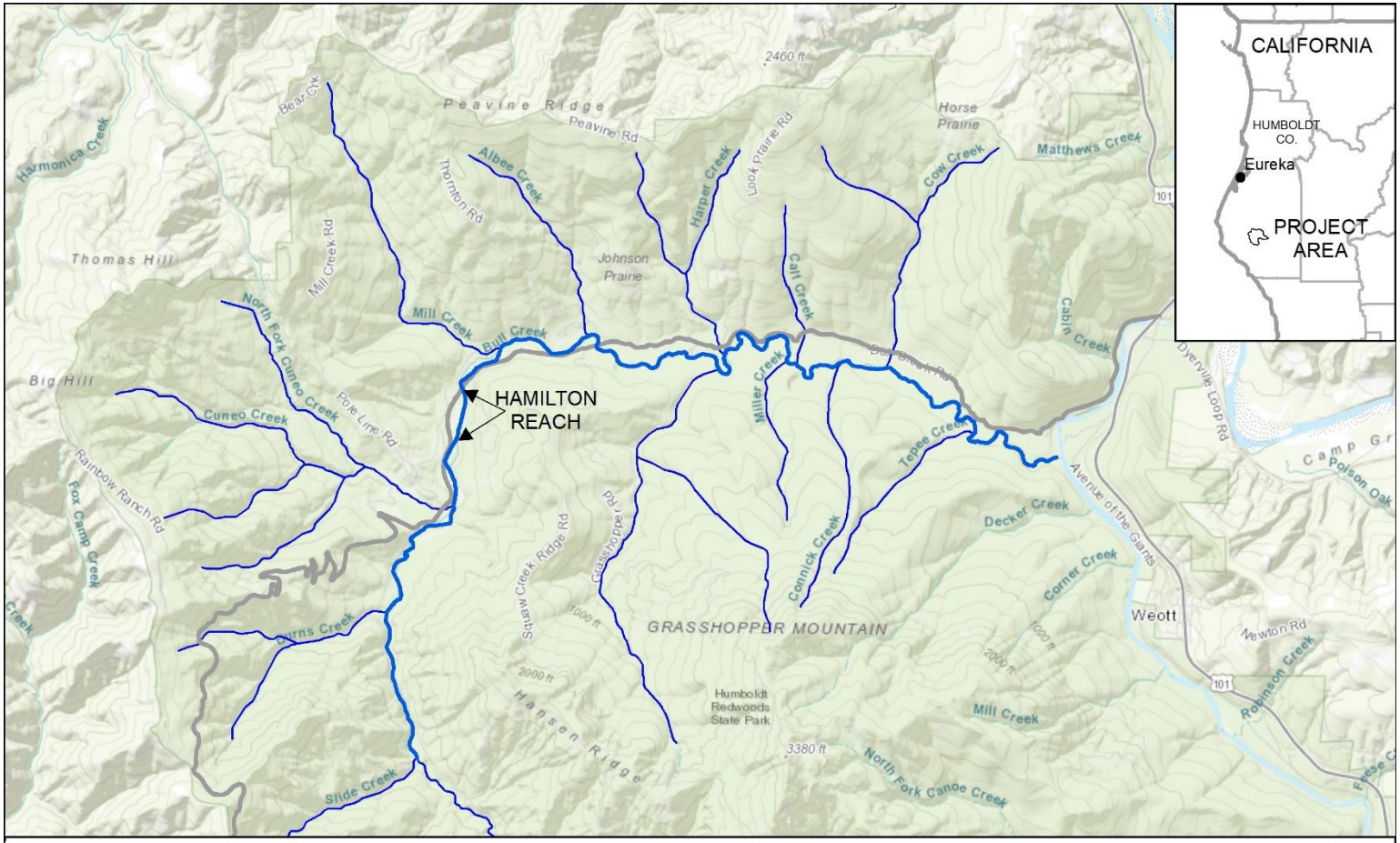
d. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.

e. U.S. Fish and Wildlife Service (USFWS) Approved fisheries biologists will provide fish relocation data via the Permittee to the CDFW personnel on a form provided by CDFW.

Final structure design and placement will be determined by field consultation between the Permitee and the CDFW Personnel.

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 insure the best chance of survival of the seedlings.


CALIFORNIA
HUMBOLDT CO.
Eureka
PROJECT AREA
MILL REACH
HAMILTON REACH
Bull Creek
Albee Creek
Mill Creek
Harper Creek
Gopher Creek
Carr Creek
Cow Creek
Cabin Creek
Miller Creek
Tepee Creek
Conklek Creek
Decker Creek
Comer Creek
South Fork Eel River
Weott
North Fork Cuneo Creek
South Fork Cuneo Creek
Cuneo Creek
Burns Creek
Slide Creek
Squaw Creek
101
PROJECT TITLE: BULL CREEK INSTREAM AND FLOODPLAIN HABITAT RESTORATION
GRANTEE NAME: CALTROUT AND CALIFORNIA STATE PARKS
USGS QUADS: BULL CREEK
STREAM NAME: BULL CREEK
0 1 2 4 Miles
N



Location of the Bull Creek project and the Hamilton sub-reach, within Humboldt Redwoods State Park, Humboldt County, CA.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Weott (4012338) OR Ettersburg (4012328) OR Honeydew (4012421) OR Bull Creek (4012431) OR Scotia (4012441) OR Redcrest (4012348) OR Bridgeville (4012347) OR Myers Flat (4012337) OR Miranda (4012327))

Possible species within the Weott and surrounding quads for 1723439 - Bull Creek Hamilton Reach Instream and Floodplain Habitat Restoration Project, 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
Accipiter striatus sharp-shinned hawk	ABNKC12020	None	None	G5	S4	WL
Aplodontia rufa humboldtiana Humboldt mountain beaver	AMAFA01017	None	None	G5TNR	SNR	
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arborimus pomo Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
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	
Brachyramphus marmoratus marbled murrelet	ABNNN06010	Threatened	Endangered	G3G4	S1	
Calamagrostis foliosa leafy reed grass	PMPOA170C0	None	Rare	G3	S3	4.2
Carex arcta northern clustered sedge	PMCYP030X0	None	None	G5	S1	2B.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
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	
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

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Gilia capitata ssp. pacifica Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
Helminthoglypta arrosa monticola mountain shoulderband	IMGASC2035	None	None	G2G3T1	S1	
Kopsiopsis hookeri small groundcone	PDORO01010	None	None	G4?	S1S2	2B.3
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lycopodium clavatum running-pine	PPLYC01080	None	None	G5	S3	4.1
Martes caurina humboldtensis Humboldt marten	AMAJF01012	Proposed Threatened	Endangered	G5T1	S1	SSC
Meesia triquetra three-ranked hump moss	NBMUS4L020	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 volans long-legged myotis	AMACC01110	None	None	G5	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
North Central Coast Summer Steelhead Stream North Central Coast Summer Steelhead Stream	CARA2634CA	None	None	GNR	SNR	
Noyo intersessa Ten Mile shoulderband	IMGASC5070	None	None	G2	S2	
Oncorhynchus mykiss irideus pop. 36 summer-run steelhead trout	AFCHA0213B	None	Candidate Endangered	G5T4Q	S2	SSC
Oncorhynchus tshawytscha pop. 17 chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	G5	S1	
Packera bolanderi var. bolanderi seacoast ragwort	PDAST8H0H1	None	None	G4T4	S2S3	2B.2
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
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

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
Rhyacotriton variegatus	AAAAJ01020	None	None	G3G4	S2S3	SSC
southern torrent salamander						
Riparia riparia	ABPAU08010	None	Threatened	G5	S2	
bank swallow						
Sidalcea malachroides	PDMAL110E0	None	None	G3	S3	4.2
maple-leaved checkerbloom						
Sidalcea malviflora ssp. patula	PDMAL110F9	None	None	G5T2	S2	1B.2
Siskiyou checkerbloom						
Taricha rivularis	AAAAF02020	None	None	G4	S2	SSC
red-bellied newt						
Upland Douglas Fir Forest	CTT82420CA	None	None	G4	S3.1	
Upland Douglas Fir Forest						
Usnea longissima	NLLEC5P420	None	None	G4	S4	4.2
Methuselah's beard lichen						

Record Count: 47