### Introduction:

Trout Unlimited, Inc. (TU) will install 309 key logs in 71 features along 1.9 miles of lower Julius Creek. This project is necessary because legacy impacts of timber operations along with subsequent stream clearing has left the Julias Creek channel in a highly dysfunctional state as examined through the lens of fish habitat conditions. Completion of this project, along with the companion road decommissioning project will arguably address the two largest limiting factors inhibiting fisheries recovery in Julius Creek.

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):

This project will install 309 key pieces of wood in 1.9 miles of of core Steelhead trout recovery habitat in Julias Creek. This project will increase stream habitat complexity, pool frequency, pool depth, high-flow refugia, and over-summer rearing habitat for salmonids in the watershed.

#### Project Description:

#### Location:

The Julias Creek Watershed is located west of Leggett, California in the Usal Creek Watershed. Julius Creek intersects Usal Creek approximately 3.10 miles upstream of its confluence with the Pacific Ocean. The project will construct instream habitat features on the lowest 1.9 miles of Julias Creek. The project is located on the Hales Grove United States Geological Survey 24k Quad. Project coordinates are: 39.84281 north latitude, -123.80330 west longitude at the center point of the project reach.

#### Project Set Up:

There are three fundamental tasks that need to be completed to accomplish this project: (A) Grant Oversight and Project Administration, (B) Construction of the Large Woody Material (LWM) Features, and (C) Reporting.

(A) Grant Oversight and Project Administration: The TU 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 Final Landowner Agreement, subcontracts, and assure all permits are finalized (if required). This task will occur throughout the life of the project. Elizabeth Mackey will be available on a full-time basis to manage this project. Anna Halligan may assist with some aspects of grant management, administration, and project coordination. In addition to the TU Project Manager, the TU California Grants Assistant, Valerie Wasem, will assist with processing invoices and vendor payments, grant tracking, and reporting.

(B) Construction of the LWM Features: Construction of features will be designed and led by Pacific Watershed Associates (PWA), Associate Scientist. Under the responsible charge of Engineering Geologist, Thomas H. Leroy CEG #2593 (Professional Geologist) and a PWA Principal Geologist, PWA Technical staff will provide project layout and construction oversight. The PWA Project Manager (Associate Scientist) will manage project layout, construction oversight, monitoring, and reporting. PWA Technical Staff will conduct surveys, layout, construction oversight, pre-, during-, and post-construction monitoring as required by the Forest Land Anadromous Restoration program (FLAR), and any data entry. PWA Geographic Information Systems (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. The PWA Senior Scientist will conduct the Paleontology review for the California Environmental Quality Act (CEQA). All PWA work elements will be supervised by a PWA Principal.

Rice Construction will be the heavy equipment contractor for the project. PWA and Rice Construction 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. Revegetation will be conducted by Woodbenders. Redwood Forest Foundation Inc. (RFFI) forestry and botanical staff will conduct a cultural resource survey and a botanical resource survey. This information will be provided to the California Department of Fish and Wildlife (CDFW) prior to implementation. RFFI will also provide planting materials (e.g. trees) required to complete this project. These services will be contributed as inkind cost share. Woodbender will be the revegetation contractor. Woodbender will be in charge of planting 219 trees in disturbed areas. RFFI forestry and botanical staff will conduct a cultural resource survey and botanical resource survey and contribute as in-kind staff time to this project. RFFI will also provide planting materials (e.g. trees) and the LWM required to complete this project as in-kind materials.

(C) Reporting: An interim cultural resource survey and botanical resource report (RFFI) and a paleontological report will be provided to CDFW prior to implementation. The final reporting of the project will be done by the PWA Engineering Geologist and Project Leader with assistance and oversight from TU Project Manager. The final summary report will include project accomplishments such as the final project budget, photographic monitoring, as-built site information, and other project information as required by the grant.

#### Materials:

Trees (planting): Approximately 219 trees and shrubs will be planted by specialized laborers. RFFI will provide the trees for replanting. LWM: RFFI will be providing 309 LWM pieces (average length 40 feet by x 1.75 feet diameter) of Douglas Fir and Redwood.

Straw (PWA): Approximately 10 bales of straw mulch. Seed (PWA): Approximately 10 pounds of native seed. PWA will procure the seed for spreading by Rice Construction. Generator/hole hawg/drill bits (PWA): Materials required for structure anchoring (including extension cord and gasoline for generator). Rebar, nuts, plates. (PWA): Materials required for anchoring structures. Porta band (PWA): Blades required for structure installation. Pressure Washer (PWA): A (hot water) pressure washer is used to decontaminate heavy equipment between each use in different waterbodies and watersheds to prevent the spread of invasive species as per the equipment decontamination methods stated in the TU decontamination protocol. It will be the responsibility of the equipment sub-contractor to decontaminate all heavy equipment prior to entering the project area. PWA Field and Office Supplies: Field materials may include, but are not limited to flagging, metal identification tags, nails, rite-in-the rain paper, gloves, spray paint and measuring field tapes. Office supplies used to complete the project include photo duplication for final reports, copying/binding for final reports, report maps, and postage. PWA Mileage and Per Diem: PWA staff require mileage, lodging and per diem to accommodate travel needs to visit the site and meet with partners.

Heavy Equipment (Rice Construction): Excavator, Dozer, Pilot Car, Lowboy, Feller and Labor. Rice Construction Mileage: Mileage is required for transportation costs to get the contractor (Rice Construction) to the project site on a daily basis.

TU Mileage: TU Project Manager requires mileage reimbursement for five round trips to the project site. TU Supplies: Includes costs associated with field

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supplies, meeting materials, and supporting supplies such as flagging, measuring tapes, wooden stakes, weather resistant paper, notebooks and notepads, writing utensils, charting pads, envelopes, poster board, and fastening supplies. TU Permit Fee: Required for Notification of Lake or Streambed Alteration.

#### <u>Tasks:</u>

**Task A. Grant Oversight and Project Administration:** TU personnel will provide all contracting oversight and administration 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 Final Landowner Agreement, subcontracts, and assure all permits are finalized. Additionally, the TU Grants Assistant will be available to assist with invoicing and vendor payment. This task will occur throughout the life of the project.

**Task B. Construction of the LWM features (PWA):** PWA staff will be responsible for executing project implementation and providing direct construction oversight. Rice Construction will complete equipment operation tasks.

**Task B-1. Environmental Compliance and CEQA Surveys:** PWA will coordinate with TU, CDFW, and RFFI to conduct the appropriate surveys for special status species, cultural resources, and botanical resources, as necessary. The Biologist will conduct an initial survey for foothill yellow-legged frog (*Rana boylii*) individuals and habitat in coordination with CDFW Grant Manager. TU will prepare and submit the Notification of Lake or Streambed Alteration and fee.

**Task B-2. Pre-project layout and surveys:** Following approval by CDFW of site-specific design plans, PWA will flag heavy equipment access routes and construction boundaries (layout, equipment exclusion areas for biological or cultural resource protection, and large woody debris (LWD) staging areas). They will also document the existing conditions at the feature locations 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.

**Task B-3. Road access development and tree procurement:** 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 a pilot car to move through the road system. Decontamination protocols will be employed prior to move in. An excavator and bulldozer will be used to reopen the roads along

Julius Creek 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 if prudent; these will be managed by a laborer. During the road opening phase of the project the excavator and dozer will be used to procure whole trees including root wads for installation in the adjacent channel reach. The trees will be skidded to flagged staging areas for the installation phase of the project. This task may begin as early as June 2020, if floristic surveys are feasible in that year. Otherwise construction activities will occur during low flow periods of 2021.

Task B-4. Construction of LWM features: Most of the features will be constructed with heavy equipment but in some locations, the features will be constructed by direct falling of trees by a professional tree faller. In general, the excavator and bulldozer will be used to create access routes to the proposed LWM features and construct said features. The features will be constructed with an excavator with a log tong attachment. To conduct the install, the excavator and bull dozer will create access to the streamside area and the excavator will install the logs while the dozer will deliver logs to the construction site from the adjacent road. The excavator will grapple each log with the log tongs and weave it through the existing riparian forest with the intention of wedging the log through the riparian trees such that the existing riparian forest provides natural anchoring for the features. In some locations, where equipment access is limited, trees will be inserted into the creek by direct falling by a Rice Construction tree faller. Where prudent, small and medium sized tree fragments that do not meet the criteria for key logs will be incorporated into the spider jams as pre-racked and loose material. These racked and loose logs/branches will reduce the spider jams porosity and more closely mimic naturally developed wood features. Once the primary architecture of the features has been completed, PWA in coordination with the CDFW project manager will determine if hard anchor points will be required at each of the constructed features (i.e. where LWM is less than 1.5 times bankfull width in length). Hard anchor points will be installed by Rice Construction. After the CDFW project manager approves of the final configuration and anchoring of each of the features, the excavator and dozer will winterize each feature access point by decompacting the disturbed ground surface and mulching all bare areas with wood slash and or straw. Native seed will be distributed in the bare areas to provide short to medium term erosion control.

**Task B-5. Post-construction monitoring and documentation:** Postconstruction monitoring, including photographic monitoring, and documentation of as-built conditions, will be performed by PWA consistent with the CDFW guidelines and as required by the FLAR focus. As built drawings will include structure placement and alignment, cross sections and longitudinal profiles, and the sizes and quantity of materials added. **Task C. 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. Reports will be submitted annually by November 15, 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 resolution 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 A. Grant Oversight and Project Administration:** Project deliverables will include the information listed below as well as everything that will be delivered to the CDFW Project Manager during the life of the project: Final Landowner Agreements (prior to receiving Notice to Proceed); Executed subcontractor agreements (prior to receiving the Notice to Proceed), and Invoices and Progress Reports (submitted at least quarterly).

**Task B. Construction of the LWM features (PWA):** Installation of 71 LWD jams over a 1.9 mile stream reach, containing approximately 309 pieces of wood. Wood will be woven into the existing riparian corridor. Hardware anchors will be used where required.

**Task B-1. Environmental Compliance and CEQA Surveys:** Interim Cultural resource, botanical, biological, and paleontological reports (completed prior to receiving Notice to Proceed); Final Cultural resource, botanical, and paleontological reports (to be completed prior to project Final Report); Preparation and payment of Notification of Lake or Streambed Alteration (prior to receiving Notice to Proceed).

**Task B-2. Pre-project layout and surveys:** Initial layout and pre-construction existing conditions of all LWM features and flagged staging areas and equipment exclusion zones; Final layout and design of LWD features; Pre-project monitoring data.

**Task B-3. Road access development and tree procurement:** Development of access roads for project construction; establishing staging areas for LWM.

**Task B-4. Construction of LWM features:** Construction of 71 LWM features throughout the 1.9 mile stream sections in Julias Creek including 309 key logs. Installation of hard anchor points where required. Erosion control Best Management Practices on all streamside access areas and disturbed ground. Actual performance measures by site, as-built drawings, before and after photographs, post-project longitudinal profile and cross sections.

**Task C. 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 A. Grant Oversight and Project Administration: 04/01/2020 to 03/31/2022.

Task B. Construction of the LWM features (PWA): 06/15/2020 to 10/31/2021.

Task B-1. Environmental Compliance and CEQA Surveys: 04/01/2020 to 07/01/2021.

Task B-2. Pre-project layout and surveys: 06/15/2020 to 07/01/2021

Task B-3. Road access development and tree procurement: 06/15/2020 to 08/31/2021.

Task B-4. Construction of LWM features: 06/15/2020 to 10/30/2021.

Task C. Reporting: 11/15/2020 to 03/31/2022.

#### **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.* 

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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.



Map 1. Project location topographic map for the Julias Creek Instream Habitat Enhancement Project, Mendocino County, California. Grantee: Trout Unlimited





Query Criteria: Quad<span style='color:Red'> IS </span>(Hales Grove (3912377)<span style='color:Red'> OR </span>Noble Butte (3912386)<span style='color:Red'> OR </span>Lincoln Ridge (3912366)<span style='color:Red'> OR </span>Westport (3912367)<span style='color:Red'> OR </span>Mistake Point (3912378)<span style='color:Red'> OR </span>Bear Harbor (3912388)<span style='color:Red'> OR </span>Piercy (3912387))

Possible species within the Hales Grove and surrounding quads for 3091 Julias Creek Instream Habitat Enhancement Project, Mendocino County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abronia umbellata var. breviflora	PDNYC010N4	None	None	G4G5T2	S2	1B.1
pink sand-verbena						
Accipiter cooperii	ABNKC12040	None	None	G5	S4	WL
Cooper's hawk						
Accipiter gentilis	ABNKC12060	None	None	G5	S3	SSC
northern goshawk						
Agrostis blasdalei	PMPOA04060	None	None	G2	S2	1B.2
Blasdale's bent grass						
Anodonta californiensis	IMBIV04020	None	None	G3Q	S2?	
California floater						
Antrozous pallidus	AMACC10010	None	None	G5	S3	SSC
pallid bat						
Arabis mcdonaldiana	PDBRA06150	Endangered	Endangered	G3	S3	1B.1
McDonald's rockcress						
Arborimus pomo	AMAFF23030	None	None	G3	S3	SSC
Sonoma tree vole						
Arctostaphylos stanfordiana ssp. raichei Raiche's manzanita	PDERI041G2	None	None	G3T2	S2	1B.1
Ascaphus truei	AAABA01010	None	None	G4	S3S4	SSC
Pacific tailed frog						
Astragalus agnicidus	PDFAB0F080	None	Endangered	G2	S2	1B.1
Humboldt County milk-vetch						
Bombus caliginosus	IIHYM24380	None	None	G4?	S1S2	
obscure bumble bee						
Bombus crotchii	IIHYM24480	None	None	G3G4	S1S2	
Crotch bumble bee						
Bombus occidentalis	IIHYM24250	None	None	G2G3	S1	
western bumble bee						
Calamagrostis foliosa	PMPOA170C0	None	Rare	G3	S3	4.2
leafy reed grass						
Cardamine angulata	PDBRA0K010	None	None	G4G5	S3	2B.1
				00	00	
Castilleja litoralis	PDSCR0D012	None	None	G3	\$3	2B.2
		Nese	Ness	<u></u>	<b>C</b> 0	40.0
Casuneja mendocinensis	PDSCR0D3N0	NONE	None	62	32	IB.Z
Ceanothus foliosus var vinostus		None	None	C3T1	<b>S</b> 1	1B 1
Vine Hill ceanothus		NUIG		0011	01	10.1



# 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
Clarkia amoena ssp. whitneyi	PDONA05025	None	None	G5T1	S1	1B.1
Whitney's farewell-to-spring						
Coptis laciniata	PDRAN0A020	None	None	G4?	S3?	4.2
Oregon goldthread						
Corynorhinus townsendii	AMACC08010	None	None	G3G4	S2	SSC
Townsend's big-eared bat						
Erethizon dorsatum	AMAFJ01010	None	None	G5	S3	
North American porcupine						
Eriogonum kelloggii	PDPGN083A0	None	Endangered	G2	S2	1B.2
Kellogg's buckwheat						
Erysimum concinnum	PDBRA160E3	None	None	G3	S2	1B.2
bluff wallflower						
Erythronium revolutum	PMLIL0U0F0	None	None	G4G5	S3	2B.2
coast fawn lily						
Gentiana setigera	PDGEN060S0	None	None	G2	S2	1B.2
Mendocino gentian						
Gilia capitata ssp. pacifica	PDPLM040B6	None	None	G5T3	S2	1B.2
Pacific gilia						
Hesperocyparis pygmaea	PGCUP04032	None	None	G1	S1	1B.2
pygmy cypress						
Horkelia marinensis	PDROS0W0B0	None	None	G2	S2	1B.2
Point Reyes horkelia						
Margaritifera falcata	IMBIV27020	None	None	G4G5	S1S2	
western pearlshell						
Mitellastra caulescens	PDSAX0N020	None	None	G5	S4	4.2
leafy-stemmed mitrewort						
Myotis thysanodes	AMACC01090	None	None	G4	S3	
fringed myotis						
Myotis yumanensis	AMACC01020	None	None	G5	S4	
Yuma myotis						
North Central Coast Fall-Run Steelhead Stream	CARA2631CA	None	None	GNR	SNR	
North Central Coast Fall-Run Steelhead Stream				_	_	
Northern Interior Cypress Forest	CTT83220CA	None	None	G2	S2.2	
Northern Interior Cypress Forest						
Oncorhynchus kisutch pop. 2	AFCHA02032	Threatened	Threatened	G4T2Q	S2?	
ESU						
Oncorhynchus kisutch pop. 4	AFCHA02034	Endangered	Endangered	G4	S2?	
coho salmon - central California coast ESU						
Oncorhynchus mykiss irideus pop. 16	AFCHA0209Q	Threatened	None	G5T2T3Q	S2S3	
steelhead - northern California DPS						
Oncorhynchus mykiss irideus pop. 36	AFCHA0213B	None	None	G5T4Q	S2	SSC
summer-run steelhead trout						



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



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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rank/CDFW SSC or FP
Pekania pennanti	AMAJF01021	None	Threatened	G5T2T3Q	S2S3	SSC
fisher - West Coast DPS						
Piperia candida	PMORC1X050	None	None	G3	S3	1B.2
white-flowered rein orchid						
Rana aurora	AAABH01021	None	None	G4	S3	SSC
northern red-legged frog						
Rana boylii	AAABH01050	None	Candidate Threatened	G3	S3	SSC
foothill yellow-legged frog						
Rhyacotriton variegatus	AAAAJ01020	None	None	G3G4	S2S3	SSC
southern torrent salamander						
Sedum laxum ssp. eastwoodiae	PDCRA0A0L1	None	None	G5T2	S2	1B.2
Red Mountain stonecrop						
Sidalcea malachroides	PDMAL110E0	None	None	G3	S3	4.2
maple-leaved checkerbloom						
Silene campanulata ssp. campanulata	PDCAR0U0A2	None	Endangered	G5T3Q	S3	4.2
Red Mountain catchfly						
Taricha rivularis	AAAAF02020	None	None	G4	S2	SSC
red-bellied newt						
Thermopsis robusta	PDFAB3Z0D0	None	None	G2	S2	1B.2
robust false lupine						
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						
Viburnum ellipticum	PDCPR07080	None	None	G4G5	S3?	2B.3
oval-leaved viburnum						

Record Count: 53