



CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)
NOTICE OF AVAILABILITY AND INTENT TO ADOPT
THE DRAFT INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION (IS/MND)
for the
HAT CREEK RIVER PARKWAY/WILD TROUT AREA PUBLIC ACCESS AND RESTORATION PROJECT

Lake or Streambed Alteration Agreement Number 1600-2014-0004-R1

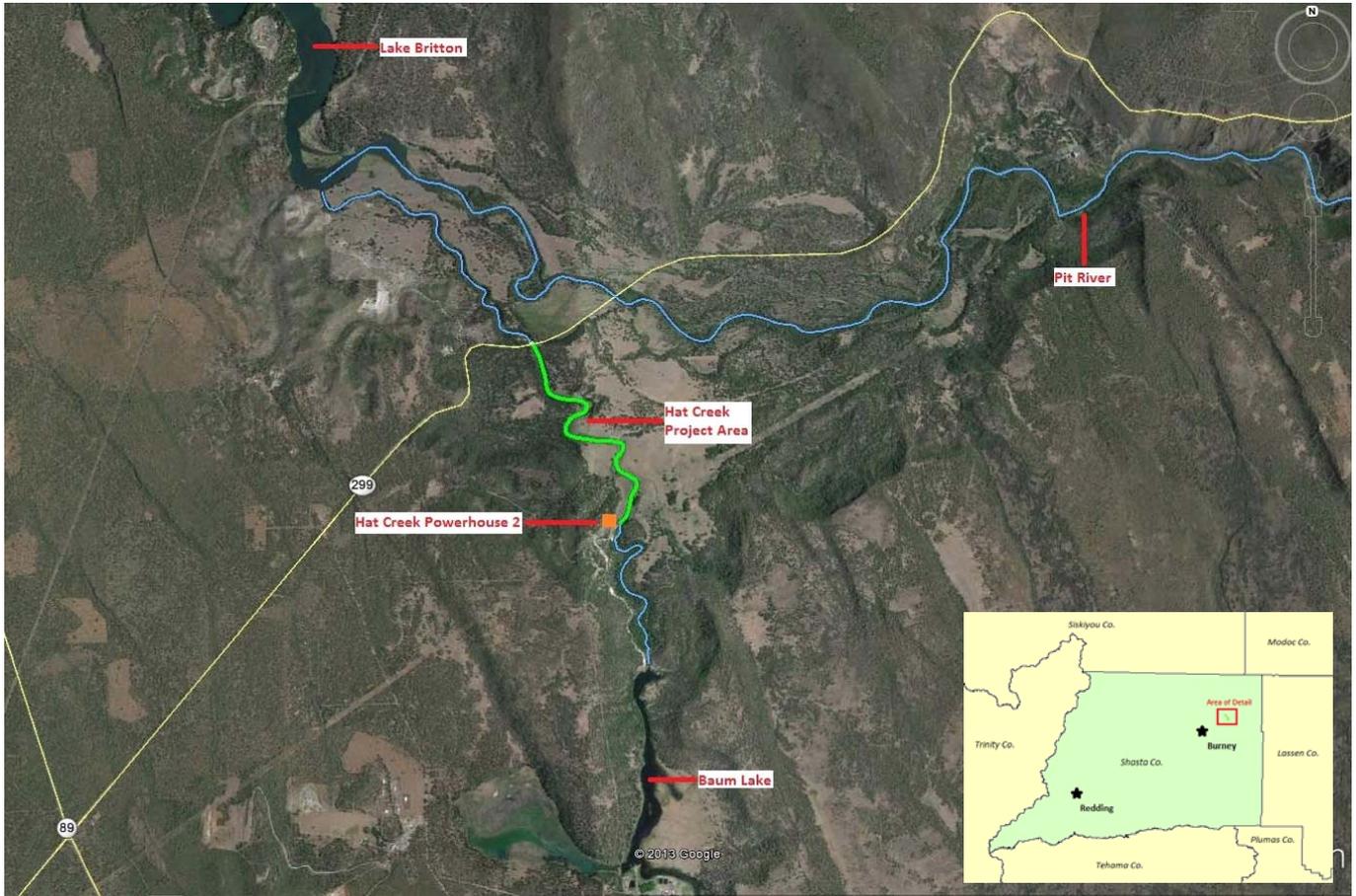
Published September 25, 2014

Project Description: The Hat Creek Wild Trout Area Public Access and Restoration Project is designed to help restore and enhance ecological function of the Hat Creek Wild Trout Area and provide improved recreational use opportunities. The Project includes three components: 1) recreational - a system of river trails, parking, and kiosk/informational signs; 2) native plant restoration - restoring/enhancing native riparian and upland plant species; and 3) instream restoration - improve instream complexity for trout and other native fish through the installation of large woody debris in key locations.

Project Location: Hat Creek, from the Pacific Gas & Electric (PG&E) Hat Creek Powerhouse #2 to the Hat Creek County Park near State Route 299 (SR299) Bridge crossing, Shasta County (Project area). Regional and Project area maps are provided below. The Project area is approximately 1.2 miles (1.6 river miles) long and includes approximately 6.3 acres of river corridor, 1.5 miles (21.2 acres) of recreational river trails, and approximately 0.18 miles of instream restoration. The size of the total Project area is approximately 67.8 acres. The elevation at SR299 Bridge crossing is approximately 2,275 feet above mean sea level (MSL).

Comment Period: Comments on the IS/MND may be provided through **October 31, 2014, at 5:00 pm.**

Document Availability: The IS/MND is available for review at Department of Fish and Wildlife (CDFW) Northern Region Office at 601 Locust Street, Redding, CA 96001 and at: CalTrout's Mt. Shasta Office, 701. S. Mt. Shasta Blvd., CA 96067; Burney Public Library, and Hat Creek County Park, Shasta County. Electronic copies may be requested by contacting the IS/MND contact person or online at <http://www.dfg.ca.gov/news/pubnotice/>



Hat Creek River and Parkway Project Area

Legend
— Project Extent



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Project Details and Impacts: Pursuant to Fish and Game Code section 1602, California Trout (Permittee) notified CDFW on January 9, 2014 with the intent to modify the bed and/or banks of Hat Creek in order to implement the proposed Project. CDFW has determined that the Project has the potential to substantially adversely affect existing fish and wildlife resources and therefore, a Lake or Streambed Alteration Agreement (LSAA) is required under Fish and Game Code section 1603. CDFW's issuance of the LSAA requires compliance with CEQA, and because no other discretionary public agency approvals have been required to date, CDFW has assumed lead agency status for the Project. Through mitigation measures contained in the LSAA and the IS/MND, CDFW has determined that the project will not result in significant impacts to the environment.

HAT CREEK RIVER PARKWAY/WILD TROUT AREA PUBLIC ACCESS AND RESTORATION PROJECT

INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

LAKE OR STREAMBED ALTERATION NUMBER: 1600-2014-0004-R1

SEPTEMBER 25, 2014

Project Title: Hat Creek Wild Trout Area Public Access and Restoration Project (Lake or Streambed Alteration Agreement Number 1600-2014-0004-R1)

Project Proponent:

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Lead Agency: California Department of Fish and Wildlife (CDFW)

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Project Area: Hat Creek, from the Pacific Gas & Electric (PG&E) Hat Creek Powerhouse #2 to the Hat Creek County Park near State Route 299 (SR299) Bridge crossing, Shasta County (Project area). Regional and Project area maps are provided as Figure 1. The Project area is approximately 1.2 miles (1.6 river miles) long and includes approximately 6.3 acres of river corridor, 1.5 miles (21.2 acres) of recreational river trails, and approximately 0.18 miles of instream restoration. The size of the total Project area is approximately 67.8 acres. The elevation at SR299 Bridge crossing is approximately 2,275 feet above mean sea level (MSL).

The downstream limit of the Project, as shown on Figure 1, is located approximately 1.4 miles (1.7 river miles) from the Hat Creek/Pit River (Lake Britton) confluence and approximately 7.6 miles northeast of the town of Burney. Most work areas will be located on PG&E land within 450 feet of the center of Hat Creek with one project feature (access trail/parking area) extending approximately 0.4 miles feet from Hat Creek.

General Plan Designation and Zoning: Shasta County's General Plan zoning designation for the project and surrounding area is "unclassified" (U). The unclassified (U) district is intended to be applied as a holding district until a precise principal zone district has been adopted for the property. All new uses in this district shall be consistent with all applicable policies of the general plan.

Purpose of Initial Study: This document is an Initial Study/Mitigated Negative Declaration (IS/MND) for the Hat Creek Hat Creek River Parkway/Wild Trout Area Public Access and Restoration Project (Project). Pursuant to Fish and Game Code section 1602, CalTrout (Permittee) notified CDFW on January 8, 2014 with the intent to modify the bed and/or banks of Hat Creek in order to implement the proposed Project. CDFW has determined that the Project has the potential to substantially adversely affect existing fish and wildlife resources and therefore, a Lake or Streambed Alteration Agreement (LSAA) is required under Fish and Game Code section 1603. CDFW's issuance of the LSAA requires compliance with the California Environmental Quality Act (CEQA), and because no other discretionary public agency approvals have been required to date, CDFW has assumed Lead Agency status for the Project under CEQA.

The purpose of this IS/ND is to present an analysis of environmental consequences related to CDFW's approval of the proposed Project through the issuance of the LSAA.

Availability of Document: The IS/ND and documents incorporated by reference herein are being made available to the public for review and comment for a period of 30 days at the following locations:

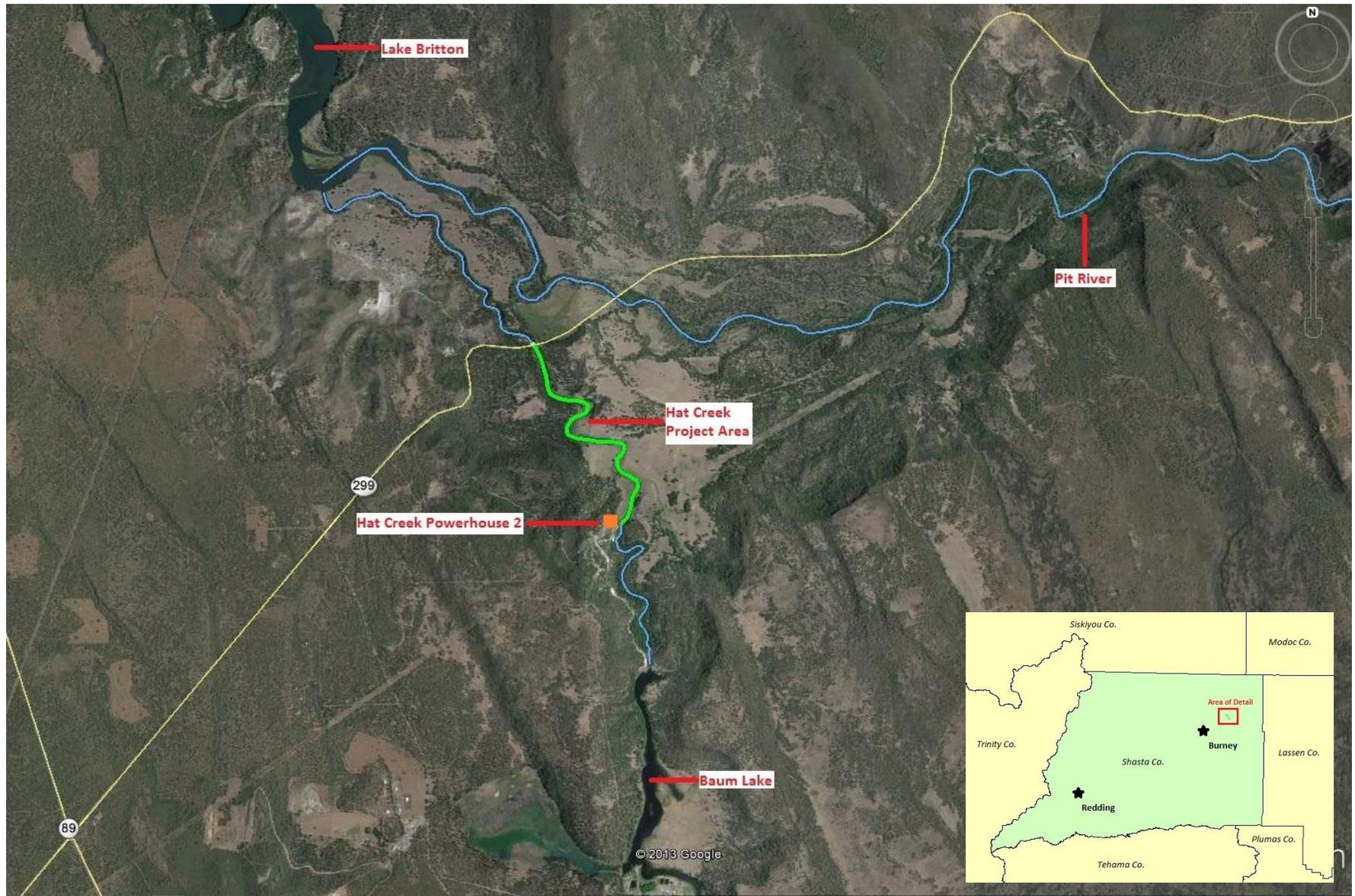
- California Department of Fish and Wildlife, 601 Locust Street, Redding, CA 96001
<http://www.dfg.ca.gov/news/pubnotice/>
- CalTrout's Mt. Shasta Office, 701. S. Mt. Shasta Blvd., CA 96067
- Burney Public Library
- Hat Creek County Park, Shasta County
- Shasta County
http://www.co.shasta.ca.us/index/drm_index/planning_index/drm_legal.aspx

Questions or comments regarding this proposed Mitigated Negative Declaration may be addressed to:

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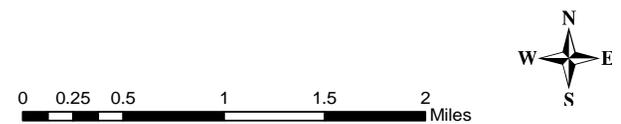
Figure 1. Aerial map of the Hat Creek Wild Trout Area Restoration Project.



Hat Creek River and Parkway Project Area

Legend

 Project Extent



Introduction and Background: Hat Creek originates as a small mountain stream in northern California's Lassen Volcanic National Park and flows northward for about 45 miles before entering Lake Britton, a hydroelectric impoundment on the Pit River. The Wild Trout Area of Hat Creek (WTA) is a 3.5 mile reach of stream located just above the lake. A PG&E hydroelectric plant, called the Hat Creek Powerhouse No. 2, and Lake Britton form the upper and lower boundaries of the WTA (Figure 1). The majority of water flowing into the WTA is a combination of two large spring systems, Rising River and Crystal Lake. The combination of spring sources and historical releases through the PG&E powerhouse provide a stable (usually 400 to 650 cfs) flow regime in the WTA (Deinstadt & Berry 1999).

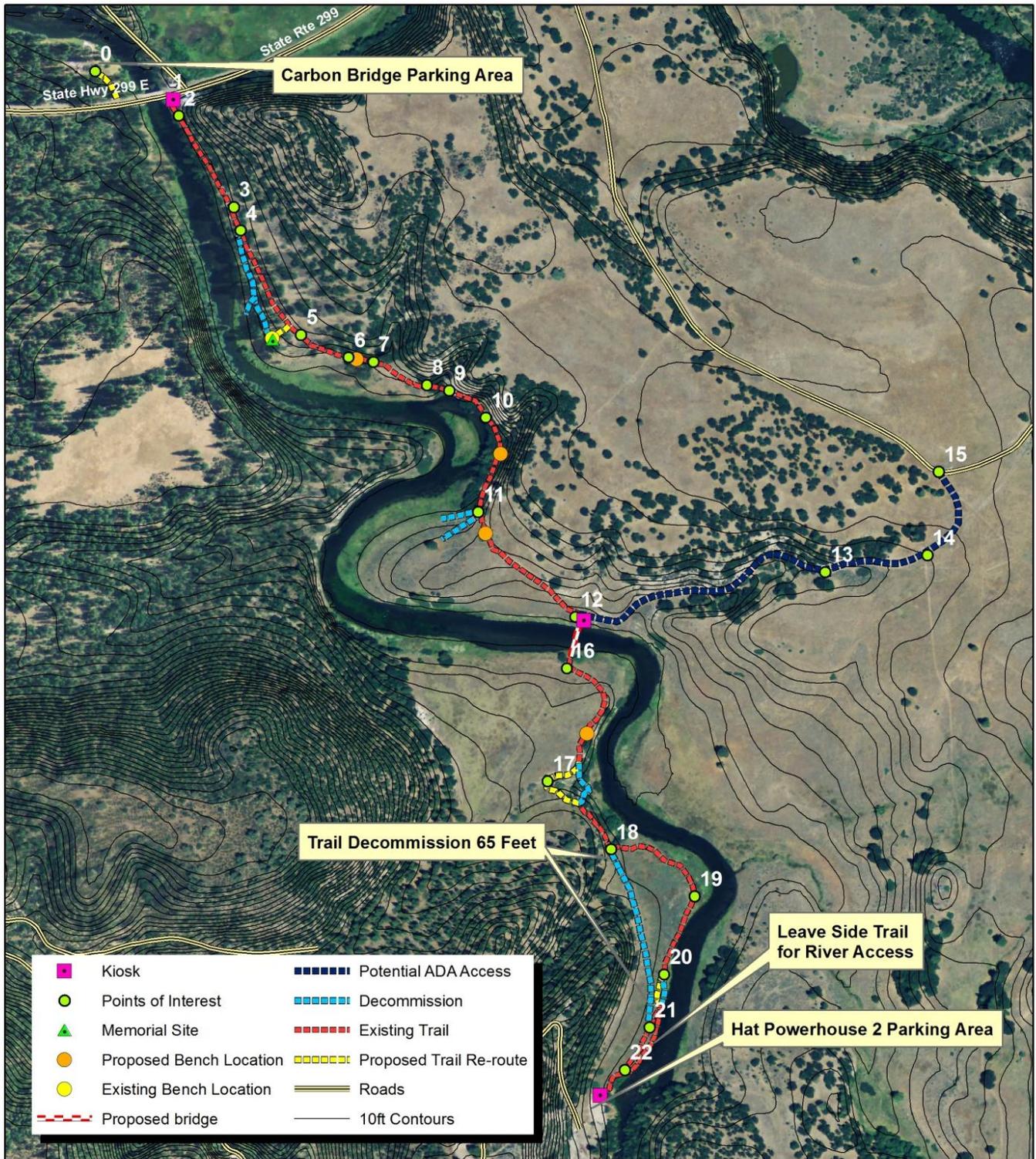
In the early 1900's Hat Creek reportedly sustained an excellent trout fishery. Shortly after the construction of Lake Britton in 1927 the trout fishery began to decline. Starting in 1968 a trout restoration project changed Hat Creek from a stream overpopulated with non-game fish into one of the state's most productive wild trout fisheries (Deinstadt & Berry, 1999). Following the success of the restoration project, Hat Creek has held an iconic position as one of the premier fly fishing destinations in the western United States. In 1972, the California Fish and Game Commission designated Hat Creek as one of the state's first "Wild Trout Streams." Between 1979 through 1988 the WTA reached a highpoint in angler satisfaction, with fly-fishermen arriving from all over the world to experience the unique spring-creek fishery. Habitat conditions, however, began to significantly deteriorate during the late 1980's and throughout much of the 1990's apparently due to a "sediment slug" that may be linked to a past PG&E Hat 2 Flume spill or geological volcanic event in the area. The sediment slug moving through the WTA will likely take decades to move through system due to the relatively constant flows of the spring-fed creek. In addition, late 19th and 20th century cattle grazing and the introduction of muskrats in the 1930's were likely exacerbating the problem with additional sediment input through bank erosion and runoff. Currently, land use practices have improved with cattle exclusion in the WTA, but other impacts remain, such as, residual sediment from the "sediment event," muskrat bank damage, and angler/recreational use traffic continue to degrade the WTA.

In 2012 CalTrout was awarded funding by the California Natural Resources Agency through the California Rivers Parkway Program (Prop. 84 funds) to create new recreational opportunities and restore fish habitat in the upstream section of the Hat Creek WTA. The project improvements include: system of new trails (including ADA compliant) to improve public access as well as protect sensitive areas, planting native riparian and upland plant species to restore quality and function, and adding new large woody debris (LWD) for native fish habitat.

Project Description: The Hat Creek Wild Trout Area Restoration Project is designed to help restore and enhance ecological function of the Hat Creek WTA and provide recreation use opportunities. The Project includes three components: 1) recreational - a system of river trails, parking, and kiosk/informational signs, 2) native plant restoration - restoring/enhancing native riparian and upland plant species, and 3) instream restoration - improve instream complexity for trout and other native fish through the installation of LWD in key locations.

Recreational Component: The Project will include approximately 1.5 miles of recreational trails (including ADA compliant trails), a new foot bridge, information kiosk/signs, and parking areas (Figure 2). The recreational component will improve the function of this existing trail system, while decommissioning poorly designed or nonfunctioning sections. Additional work will focus on minimizing off-trail deviation through selectively decommissioning trail offshoots.

Figure 2. Hat Creek map of existing and proposed trail system (map from Lomakatsi Restoration Project).



Lomakatsi Restoration Project
 Hat Creek Existing and
 Proposed Trail System
 January 23, 2014



Specific recreational components will include:

- eight-foot wide paved ADA compliant river trail (1.2 miles),
- three-foot wide unpaved multi-use river trail (3.4 miles),
- footbridge over Hat Creek (160 feet long x 8 feet wide) at the historic Carbon Bridge site,
- road and trail signs (31 signs) including a River Parkway sign,
- trailhead kiosks with maps and interpretive panels,
- streamside picnic area at historic Carbon Bridge site, and
- upgrade one existing parking area (0.09 acres) and relocate one existing parking area (0.18 acres).

The methods used to design the Hat Creek Parkway Trail follow the procedures outlined in the US Department of Transportation's *Trail Construction and Maintenance Notebook*. Streamside trails will be constructed primarily by hand to avoid soil compaction by heavy equipment. Trail construction will follow standardized Department of Transportation Federal Highway Administration Trail Construction and Maintenance Guidelines and United States Access Board Guidelines and Standards. Access roads to the relocated parking lot will be constructed with heavy equipment implementing measures to control runoff and minimize erosion.

The rehabilitation work proposed in this plan will focus on reducing sedimentation into Hat Creek primarily through providing proper drainage and stabilization of the existing trail system. Where applicable the trail will be out-sloped to approximately 2-5% to provide better drainage (also called sheet flow) to keep the tread soil intact. Certain sections of the trail will be constrained to reduce the overall width of the trail tread, and other areas will be rerouted entirely due to previously poor design or function.

Approximately 1.2 miles of the trail will be fully accessible per 2010 Americans with Disabilities Act (ADA) Accessibility Guidelines (ADAAG). The other 3.4 miles will not be paved. In 2007, Shasta County renovated a small rest area off of Highway 299 (Hat Creek Park) with fully ADA compliant parking, restroom, picnic area, and 50 yard paved ramp to river for wheel chairs. This project will utilize and build on this existing infrastructure to increase accessible trails by over 3 miles. The trail system will be hardened as needed to provide appropriate tread firmness for intended user groups in relation to soil capability, grade, season of use and expected wear of the tread surface. Existing soils in the project area are sandy, porous, and well-draining. The project will utilize armoring methods for improving firmness as needed.

Kiosks will be located at the new Carbon Bridge picnic area, the new parking area for Carbon Bridge access, and at the SR299 trailhead access point. The recreational component contractor will be working closely with CalTrout and the Pit River Tribe to develop signs that incorporates cultural history, local ecology and aquatic habitat and overall information about restoration efforts.

Trail signs will be developed to highlight key locations or features, provide distance to locations or access points, and to encourage trail users to follow the proper travel routes. The trail signs will also be developed in coordination with the project partners.

Bench locations have been proposed in four strategic locations along the trail system. The locations were chosen to capture some of the impressive views of this area. Benches were also spaced relatively uniformly along the trail system. Additionally, the bench placement recommendations were placed in areas representing unique ecological features e.g., legacy pines and oaks.

The footbridge will be a 160 foot single span pre-constructed steel bridge where the old Carbon Bridge was previously located. Grading and fill material needed to install the bridge will be minimized as the former bridge site still

maintains the grading/sloping from the historic bridge. New bridge abutments made of concrete and class II aggregate base will be installed within the banks to support the single-span bridge and reduce future erosion. Access and staging for heavy equipment use during road and bridge construction will utilize existing old Carbon Bridge access roads and pull-outs maintained by PG&E. If additional staging area(s) are required, the new parking lot area (described below) or PG&E's old Carbon Bridge/SR299 access point can be utilized. Heavy equipment will avoid all cultural resources areas, sensitive habitat areas, and sensitive species.

The new parking area (0.18 acres) will replace an existing parking design (0.09 acres) which allows motorized vehicle use within close proximity to eroded stream banks and riparian vegetation. The new parking design will accommodate up to 10 vehicles or parking spaces and will minimize further degradation due to its location approximately 0.45 miles from Hat Creek. The existing parking area will be decommissioned and converted into a picnic area. The parking area surface and trail construction will utilize crushed granite or other permeable surface material to reduce dust, erosion, rutting, and other environmental impacts. The trail leading from the new parking lot to the Carbon footbridge crossing will be ADA compliant.

Native Plant Restoration Component: The project will enhance and restore approximately 6.3 acres of native emergent, hydrophytic, mesic, and xeric plant assemblages (Figure 3). An initial planting of 4,500 native plants is scheduled for the Project (Table 1). Native plant selection assemblages will serve to restore/enhance the loss of these communities through past land practices, help stabilize bank erosion, enhance streamside cover/structure for aquatic species, help direct recreational traffic, and provide cultural resources. An Eco-cultural restoration strategy will be incorporated into the riparian planting design in an effort to address the loss of culturally significant plant resources along the project area reach, which are valuable to the Illmawi and Atsuge bands of the Pit River Tribe. Cultural plant restoration will be complimentary to the overall riparian planting objectives contributing to an increase in plant and wildlife habitat diversity.

Within the Project boundary there are several invasive plant species that could pose a threat to the long term health of native plant communities. In the riparian planting zones, the dominant invasive weeds are reed canary grass (*Phalaris arundinacea*), teasel (*Dipascus sp.*), and poison hemlock (*Conium maculatum*). In the adjacent upland transition zone, yellow star thistle (*Centaurea solstitialis*) and several non-native grasses including quackgrass (*Elymus repens*) and cheatgrass (*Bromus tectorum*) occur. Weed management strategies will be implemented for the following species: teasel, reed canary grass (RCG), and poison hemlock.

During implementation of planned restoration work, care will be taken to avoid the introduction and spread of invasive weeds on site. Tools will be washed prior to moving from areas infested with weeds to areas not visibly infested, even within the same planting zone. Water jugs or buckets will be transported with other planting gear to facilitate tool cleaning. Excess mud will be washed off boots and tools on the soil, not in the stream channel, to prevent stream transport of seeds or root fragments.

Muskrat damage has been noted as a source of accelerated bank erosion in the Project area. Plant selection and location is expected to discourage muskrat burrowing through the growth of dense root mats.

Figure 3. Planting zones within the Project area on lower Hat Creek (map from Lomakatsi Restoration Project).



Native plant species were selected to meet the riparian objectives of the Project and share the following characteristics:

- native species found in the lower Hat Creek riparian zone;
- suited to their target planting zone soil and water depths;
- commonly used riparian restoration species; and
- available for purchase and/or propagation to meet the 2014-2015 planting timeline.

Planting zones were delineated to include previously mapped stream bank erosion areas (HatRAC, 2013). Within each zone, proposed plantings were clustered in large and small plant assemblages at varying densities to achieve bank stabilization and revegetation goals.

Larger plant guilds containing a mix of emergent, hydrophytic, mesic, and xeric plant assemblages and are recommended for planting at three different spacing regimes: low, moderate and high density. High density plantings are characterized by willow cuttings or rooted stock planted at 6-inch spacing, while moderate density patches are planted at 1 foot spacing and low density patches are planted at 2-foot spacing. Additional species are planted at regular spacing intervals increasing with distance from the water edge. Continuous plantings that would obstruct access to the stream channel will not be implemented. Plantings and protective fences are intentionally clustered, both to create dense root networks, and to allow for angler and tribal subsistence access between trails and the stream channel.

Smaller plant clusters or assemblages were designed for placement in the narrow transition zones between peat and upland soils, and also to fill in gaps between larger guilds where additional plant density is desired. Smaller plant assemblages will include: willow/alder, tule/rush, mesic shrub; and xeric transition.

Plants will be installed with hand tools such as planting shovels, hoe-dads and dibbles. These tools are all specially designed to be utilized for restoration out-plantings. Planting shovels have long skinny planting blades for digging deep holes that are not too wide. Hoe-dads are generally designed for bare roots, but can also be used for plants that need a shallow hole. A dibble is long rod-like tool used for creating deep holes for willow cuttings. A planting auger may be used for larger container stock in deeper overbank and upland soils. The auger can also be used ahead of the crew to open up planting holes ahead of the planters, especially in difficult areas. Lastly, the McLeod tool has a hoe-like blade on one side (and a rake on the other side) that is useful for removing the sod layer prior to planting.

Planting will occur during the dormant season, starting as early as November 15, 2014 and extending no later than March 1 of each year. This range is proposed because weather conditions will have a direct influence on the exact month, week and day(s) that the planting will be implemented. The duration between late fall (mid-November) and late winter (early March) is acceptable for restoration out-plantings, as long as the ground is not frozen or covered in excessive amounts of snow. Dormant rather than actively growing plants can handle the highest amount of disturbance from nursery to staging area to out-planting. Once the plants start to come out of dormancy, the new root and vegetative growth should be in the field and not in the container. Late fall is ideal because the plants get a chance to acclimate during dormancy. Late winter is also acceptable, especially if the fall was dry and unseasonably cold.

Table 1. Native plant species recommended for planting and propagation in the Project area (table from Lomakatsi Restoration Project).

Common Name	Scientific Name	Type	Purpose	Composition	Total Number
Pacific willow	<i>Salix lasiandra</i>	hydrophytic	1	49.4%	2224
Cattail	<i>Typha</i> spp.	emergent	1	8.2%	368
Tule	<i>Scirpus</i> spp.	emergent	1	8.2%	368
Spreading rush	<i>Juncus patens</i>	hydrophytic	1	8.2%	368
"White Root" sedge	<i>Carex barbarae</i>	hydrophytic	1	7.7%	348
White alder	<i>Alnus rhombifolia</i>	hydrophytic	1	3.7%	165
Sierra gooseberry	<i>Ribes roezlii</i>	mesic	1, 2	2.5%	112
Douglas spirea	<i>Spiraea douglasii</i>	hydrophytic	1, 2	2.5%	112
Oregon ash	<i>Fraxinus latifolia</i>	hydrophytic	1, 2	1.3%	60
Black hawthorn	<i>Crataegus douglasii</i>	mesic	1, 2	1.2%	53
Klamath plum	<i>Prunus subcordata</i>	mesic	1, 2	1.2%	53
Red osier dogwood	<i>Cornus sericea</i>	mesic	1, 2	1.2%	52
Ponderosa pine	<i>Pinus ponderosa</i>	mesic/ xeric	1, 3	1.0%	44
Skunkbush	<i>Rhus trilobata</i>	mesic/ xeric	1, 2	1.0%	44
California rose	<i>Rosa californica</i>	mesic	1, 2	0.8%	37
Common chokecherry	<i>Prunus virginiana</i>	mesic/ xeric	1, 2	0.8%	37
Blue elderberry	<i>Sambucus mexicana</i>	mesic/ xeric	1, 2	0.8%	36
Incense cedar	<i>Calocedrus decurrens</i>	mesic/ xeric	1, 3	0.4%	17
Totals:				100%	4500

Purpose codes:

1 = stabilize banks with dense root network

2 = increase native plant diversity

3 = provide for future in-stream large wood recruitment

Some Project planting stock will be purchased from a supplier who specializes in propagation of native California plants (e.g., Floral Native Nursery in Chico). In addition, local cuttings will be collected during the dormant season and planted directly in the field. Locally collected and propagated native plants will also be raised at the Pit River Tribe's native plant nursery and ready for out-planting 2-3 years after collections.

Layout of plants will be performed by a team of restoration professionals. Plants will be handled carefully at all times. Planting zones will be accessed by an ATV and on foot. Upon completion of each zone delivery, the team of planting technicians will set out the plants in the field prior to planting as the design specifies. Adjustments for layout can be made +/- 20% based on field observations. Spreadsheets will be made available to the layout crew to assist in subdividing and tracking the prescribed plant inventory into species amount per zone, guild and assemblages.

Once plants have been properly laid out in a zone, a crew will begin site preparation, planting, mulching and caging with the oversight of a technical team. Planting technicians will work in conjunction with the crew to ensure that plants are properly installed while the next zone layout is being finalized. Layout and installation will be coordinated in an organized sequence to create an orderly flow and ensure proper oversight and review at all stages of the operation.

Routine maintenance of restoration out-plantings is important to improve overall quantity and quality of survival rates. The maintenance strategy may be modified as a result of information obtained from bi-annual plant survival monitoring assessments gathered in the field. Upon analysis of the monitoring data, an adaptive management approach will be utilized to improve planted species survival. The standard protocol for long-term out-planting success is to invest in varying degrees of repeated maintenance during the first two to three years. After a period of two to three years, out-plantings should become established to survive without general maintenance, although attention to repair of fencing may still be required to prevent depredation from animal damage such as deer, beaver or small mammal activity.

Restoration out-plantings will need routine watering, depending on their field specifications (plant type and field placement). The watering regime per plant grouping can also be modified based on observations during the period of active plant monitoring. From June 15 to September 15, during decreased rain and higher average temperatures in the project area, mesic and xeric restoration out-plantings will be consistently hand-watered. This will encourage acclimation for containerized plant stock (and some cuttings) to successfully transition to the long-term field setting. The underlying principle is to encourage plant root establishment and rapid growth patterns into the water table.

In general, it is recommended in the first year that the mesic and xeric plants be periodically hand-watered a minimum of once every 7-10 days between the months of June 15 to September 15. This schedule may be changed following precipitation trends. A rule of thumb is that 1" total local rainfall is sufficient to postpone a 10-day period until the next cycle.

A minimum of one gallon per plant per watering will assist in specimen survival. Due to the planting location in proximity of the water's edge in a guild and cluster assemblage arrangement, a system of hand-watering can be achieved by dipping 5-gallon buckets into Hat Creek and pouring it onto the base of the plants. A small, portable in-stream water pump may also be used to assist this process. A "bucket brigade" can be efficiently facilitated through California Trout's Youth Program, a volunteer-coordinated group, or through the Pit River Tribal workforce. A central person will need to coordinate and document the amount and frequency of watering events to ensure that baseline watering measures are being met. Plants can adapt to routines and have a better chance of survival if practices are established and continued. The frequency of watering can lessen as the plants show signs of establishment over the course of two to three years. The land owner (PG&E) has no concerns over these methods to irrigate the new plantings.

Aquatic specimens properly planted in the hydrophytic zone may not need to be considered for a watering routine, unless monitoring suggests otherwise. Xeric and mesic type plantings will need routine watering where they are not planted in contact with the water table. Alternative watering methods, other than what is currently proposed in this plan, include irrigation systems that require a large initial investment in infrastructure. Gravity-fed systems require holding tanks placed at strategic locations higher in the elevation profile. Holding tanks need to be leveled on multiple points of the landscape. Timers, irrigation fittings, pipe and water-emitters all need to be laid out from tank to plant. Holding tanks need to be filled by means of a pump system. Overall, the final design of a holding tank system may require a professional irrigation specialist. Once established, this system can efficiently operate at programmed intervals, although it will also need routine maintenance.

In addition, there are a variety of water pumps on the market that can be manually placed in the creek and watered with a hose attachment per zone. This may be needed to supplement the hand watering effort as planned.

Restoration out-plantings will benefit from periodic reduction and removal of invasive weed competition. Mowing by means of gas-powered weed-eaters is the most effective way to reduce competition. Cutting back the weeds around the fence perimeter will provide the out-plantings with more access to sun, nutrients and water.

Hand-weeding around the base of out-plantings may also be necessary to remove competition. Wood chippings and/or natural mulch fabric can become compromised by aggressive invasive plants, wind, animals or other disturbance. In this case, maintenance can be achieved by digging up the roots of invasive plants with planting shovels. A concentrated effort will be made to not further damage the restoration specimen when removing invasive plant competition near the base. After weeding, the mulch fabric be repaired and pinned back in place.

Oregon white oak (*Quercus garryana*) and ponderosa pine (*Pinus ponderosa*) occur within the riparian area of influence of the project. These trees are presently providing streamside shade and will provide future large wood for the aquatic system.

Young conifer encroachment poses the main threat to these larger trees. Due to lack of recent fire disturbance, many young sapling and pole size, 1-10 inch diameter at breast height (dbh) ponderosa pine have become established in high densities. Encroachment affects individual oaks as well as understory associates. The oaks are showing signs of vigor loss from conifer encroachment including large limb mortality and crown dieback. Many young conifers are already piercing into or are poised to pierce through the woodland canopy within the next two decades. If conifer density is not reduced, these large older legacy trees will decline with time due to increased shade and competition for nutrients, sunlight and water resources.

In an effort to increase the “hang time” of these large trees that are serving an important ecological function for both the aquatic and terrestrial system, the planting contractor will remove the small encroaching tree stems from under and around the larger trees. The purpose of this radial thinning is to release and increase the vigor of preferred species, while ensuring favorable fuel conditions that limit possibility for fire-related mortality. This legacy tree release prescription calls for thinning trees less than 10” dbh in a radius of twice the dripline, or 30-50’ from the legacy bole, however, distances for drip line-radial thinning will be site specific. Generated activity fuels will be piled and burned.

Plant monitoring will consist of a science-based monitoring regime to enable use of adaptive management strategies to improve restoration success. During the time of planting an inventory database of each planting assemblage with a unique identifier and spatial location will be compiled. This database will be updated during bi-annual inventory assessments of plant survival to detect patterns of plant mortality or other damage to plantings. A brief report will summarize the results of each bi-annual inventory assessment to enable adaptive management. Immediate changes to site management (i.e., changes to the watering regime, fencing, signage, replacement planting, etc.) can then be

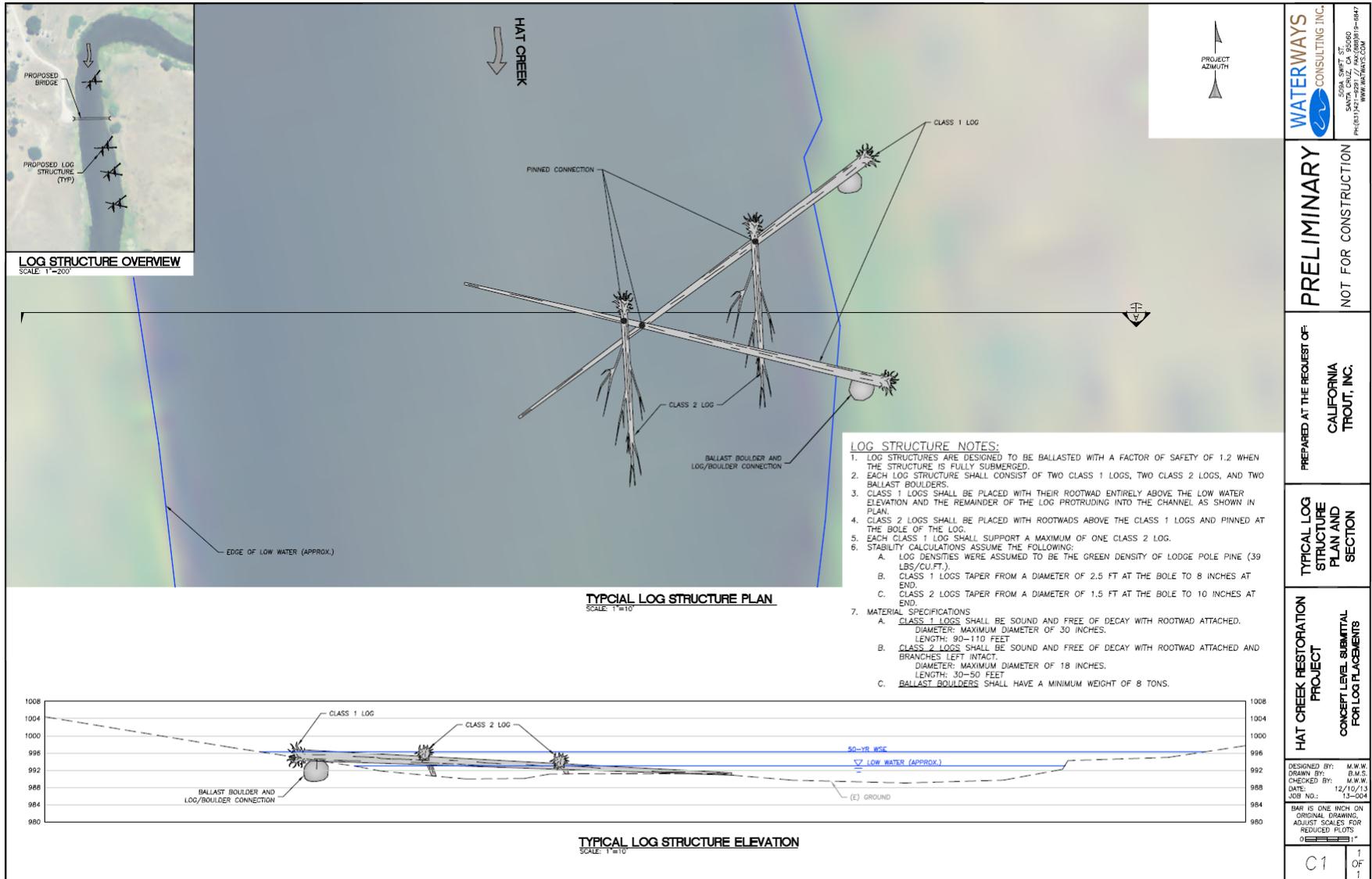
implemented. Monitoring of survival and maintenance of plantings will be conducted throughout the life of the project (through November 2016). A survival target of 70 - 80% will be maintained.

Photo points will also be established in each planting zone. Photo points will be established prior to planting and will be re-sampled following planting and during the final inventory (November 2016). Photo points will be re-sampled as needed to accompany bi-annual inventory assessments. At each photo point the use of a wooden stake hammered in low to the ground in addition to a spatial location description to facilitate accurate point resampling. A standard reference photo board will serve both as a size reference and to identify each point in each photograph. The camera type and settings will be recorded along with the date, height of photo, and photo location. At the close of the project the planting contractor will provide inventory data and a summary report of native planting survival.

An adaptive management strategy will be implemented throughout all phases of this restoration project and feedback from all interested parties is crucial to informing future restoration success. Both implementation and effectiveness monitoring will be used within an adaptive management context. Implementation monitoring will occur during plant installation where site conditions may dictate changing strategies. Effectiveness monitoring will be conducted on a bi-annual basis to assess planting survival that will inform ongoing maintenance, future planting design, and propagation approaches.

Instream Restoration Component: This component will incorporate a series of LWD (instream log structures) to increase channel complexity and help restore channel morphology at the old Carbon Bridge area of Hat Creek. More specifically the large woody debris at the Carbon reach is designed to: increase habitat heterogeneity, increase overhead cover, promote reach-scale deposition and channel narrowing, and increase fishing opportunities.

Figure 4. Concept design of instream large wood debris structure and cross section (figure from WaterWays Consulting Inc.).



The Carbon reach was selected due to numerous factors including:

- this reach is overly wide and a left-bank lateral bar has formed. The long-term trend is likely toward channel narrowing, which would improve habitat by increasing depth. Wood placement on the left bank would assist in the narrowing process by generally promoting sediment deposition in the reach on the lateral bar;
- habitat in the reach is highly uniform, especially on the left bank bar. Wood presents an opportunity to increase habitat heterogeneity through local scour and overhead cover;
- fish surveys done by CDFW have found very low levels of fish use in this reach;
- due to excellent access on the Carbon road, fisherman use of the reach is relatively high even though catch rates are low; and
- equipment access is good, and construction disturbance will be minimized.

All stream corridor restoration and LWD placement methodologies will follow the Stream Corridor Restoration: Principles, Processes, and Practices Manual (Federal Interagency Stream Restoration Working Group). In addition, stakeholders generally supported a conceptual design to mimic, to the extent feasible, the natural process of large trees falling into the creek.

Six larger trees are grouped into three clusters downstream of the Carbon bridge location. Smaller trees with limbs attached are pinned to the larger logs to provide additional overhead cover for fish. Larger trees are designed to reach the edge of the lateral left bank bar. In addition, a single large tree is located upstream of the bridge (Figure 4). The primary objective of this tree is to help direct flows to the right bank through the Carbon area, where the channel is deeper, promoting better habitat conditions. This tree will also provide, to a lesser extent, the other benefits described above.

Design of the structures downstream of the bridge location was guided by stability analysis based on buoyancy calculations. To remain stable during a 50-year flood without ballast, the root wad of larger trees would need to be above the 50-year water surface elevation. The left bank in the Carbon area typically has a narrow lower floodplain surface. To get the root wad above the 50-year water surface elevation, it would have to be placed fairly high and well back from the edge of the creek. The angle between the tree and the water surface would be relatively high, reducing the overhead cover benefits, and very long trees would be required to reach the edge of the lateral bar. These factors make the use of unballasted trees in the downstream portion of the Carbon area infeasible.

The design for the structures downstream of the bridge therefore includes rocks as ballast. To make the structures look as natural as possible, the rocks will be buried under the rootwad of the tree. The trees will be placed such that the trunk of the tree just above the rootwad rests on the existing bank of the channel. No excavation of the streambank will be necessary. Placing the larger trees in pairs and pinning the ends together also helps provide the stability necessary to prevent movement given the additional flotation and rotational force generated by the smaller trees. Because the channel is narrower upstream of the bridge, the single tree there can be placed with its root wad above the 50-year flood and no ballast will be required.

To promote channel narrowing, the placed large trees will extend to approximately the instream edge of the existing lateral bar. This will require trees approximately 100 ft in length. At average annual flow level, the unobstructed channel width will be about 115 ft, consisting of a smaller channel along the left bank and the larger right bank channel. This width is similar to functional areas of the channel upstream of the Carbon reach, which indicates that the structures will not promote substantial erosion on the right bank. Additionally, the right bank in this area was highly stabilized with larger rock during a previous restoration project.

Approximately 40-50 ft of the channel will be mostly obstructed by wood at base flow level. This will likely promote deposition on the lateral bar upstream of each of the structures. Over time, water depths will likely become shallower, and the left bank channel will probably fill in. Additional channel adjustments may then include some erosion of the instream edge of the current bar as the right bank channel widens in response to deposition on the bar.

Transport of large trees to the site and placement in the creek will likely be most effectively accomplished by helicopter. Trees of this size, with the root wad attached, would be difficult to transport by ground, and would require a large excavator for placement in the channel. Placement by helicopter will eliminate the need for ground transport to the site and will significantly reduce ground disturbance at the site.

An excavator will be required, however, for placement of the ballast rocks at each of the sites downstream of the Carbon Bridge. Heavy equipment will also be needed for construction of the bridge in this area, and equipment access for the wood placement will follow the same existing access route. From the bridge, a couple of passes by the excavator will be required to each of the tree installation locations to transport rocks. Because excavators have relatively low ground pressure, ground disturbance connected with access will be minimal.

Excavation for the ballast rock placement will occur back from the streambank. The excavated area will be separated from live flow, such that water quality impacts are not anticipated. Excavated material will be placed around the ballast rocks or the rootwad, and covered by sod obtained from excavation, or transported to upland areas for disposal. All instream construction will be supervised by someone with experience in placing woody structures for fish habitat.

Monitoring will include channel cross sections at approximately three locations in each structure. These channel cross sections will be done prior to structure placement, and yearly post placement. Sections will be surveyed during base flow, and should be done at the same time each year. At regular intervals, velocity should also be measured at 0.6 total depth (average velocity of the water column). These cross sections would be used to evaluate changes in habitat heterogeneity and, to a lesser extent, evaluate channel depositional response at a reach-scale.

To evaluate reach-scale deposition response, cross sections will be established between the structures and one hundred feet upstream and downstream of the sites. The primary purpose of these cross sections would be to evaluate changes in streambed elevation. Timing and frequency of the surveys would be similar to the cross section surveys at individual structures.

Project Duration and Timing: It is anticipated that Project work will be initiated in 2014 and will continue for a period of 3 years. Component implementation of this proposed project will occur each year - 1) recreation component work (non-heavy equipment) will occur between April 1 and November 15; 2) native plant restoration component work (non-heavy equipment) will occur year-round; and 3) instream and other heavy equipment related work will occur between August 15 and November 30.

Project Monitoring: CalTrout and their contractors will monitor both implementation and effective monitoring of the planting plan throughout the Project duration (2014-2017). Effective monitoring will be conducted bi-annual inventory assessments with reports summarizing the results.

Surrounding Land Uses and Setting: The Project area lies in the southern range of the volcanic Cascade Mountains, just north of Mount Lassen. The Project is located in rural northeastern Shasta County approximately 8 miles northeast of Burney. PG&E owns the land where the Project is located and operates a hydroelectric powerhouse at the upstream extend of the project. The land use of the area contains larger private ranches/parcels, rural towns, and public land. The lower Hat Creek vegetation communities include a mix of northern oak woodlands and ponderosa pine forest. The meandering creek corridor has a mix of fragmented emergent and riparian vegetation.

Other Public Agencies Whose Approval may be Required:

- Army Corps of Engineers (Clean Water Act, Section 404)
- United States Fish and Wildlife Service(ESA)
- Central Valley Regional Water Quality Control Board (Clean Water Act, Section 401)
- Shasta County Resource Management - Planning Division

Proposed Mitigation Measures: The following is a list of Mitigation Measures that shall be implemented by the CalTrout and its contractors in order to avoid or minimize potential environmental impacts. Implementation of these Mitigation Measures would reduce the potential environmental impact of the proposed Project to a less-than-significant level.

Summary of Findings: This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared to assess the Project's potential effects on the environment and the significance of those effects. Potentially significant environmental effects could result from the proposed Project. CalTrout revised its Project plans and has agreed to implement Mitigation Measures, which will eliminate or reduce environmental impacts to a less-than-significant level. Based upon this IS/MND, CDFW has determined that the proposed Project would have no significant effects on the environment once mitigation measures are implemented. CDFW has found, in consideration of the entire record, that there is no substantial evidence that the proposed Project as currently revised and mitigated would result in a significant effect upon the environment. The IS/MND is therefore the appropriate document for CEQA compliance.

This conclusion is supported by the following findings:

- The Project would result in no impacts to Agriculture and Forest Resources, Air Quality, Land Use and Planning, Mineral Resources, Population and Housing, and Transportation and Traffic.
- The Project would have impacts below a level of significance to Aesthetics, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Public Services, Recreation, and Utilities and Service Systems.
- Mitigation Measures would be implemented to reduce potentially significant impacts to less-than-significant levels for Biological Resources and Cultural Resources.
- The Project would not substantially degrade the quality of the environment. It is anticipated that the Project would benefit the habitat for riparian habitat and special status species.
- The Project would not achieve short term environmental improvement to the disadvantage of long term environmental improvement.
- The Project would not have environmental effects that are individually limited but cumulatively considerable.
- The Project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.
- The Project incorporates all applicable Mitigation Measures as listed below and described in the initial study.
- The MND reflects the independent judgment of the Lead Agency.

Mitigation Measures:

Bio-1: To avoid disturbance-related impacts to special status plant species, CalTrout shall have a qualified botanist survey potentially suitable habitat for special status plant species within the Project area. Surveys and reporting shall be conducted prior to project initiation and during the season when any special status plants would be evident, in accordance with the Department's November 2009 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* available at: https://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html. Special status plant species for the Project area include the following:

- Boggs Lake hedge-hyssop, *Gratiola heterosepala* (state Endangered, 1B.2)
- Greene's tuctoria, *Tuctoria greenei* (federal endangered, state Rare, 1B.1)
- Tracy's eriastrum, *Eriastrum tracyi* (state Rare, 3.2)
- Bellinger's meadowfoam, *Limnanthes floccose* spp. *bellingiana* (1B.2)
- Broad-nerved hump moss, *Meesia uliginosa* (2B.2)
- Castlegar hawthorn, *Crataegus castlegarensis* (3)
- Eel-grass pondweed, *Potamogeton zosteriformis* (2B.2)
- English Peak greenbrier, *Smilax jamesii* (1B.3)
- Lemmon's milk-vetch, *Astragalus lemmonii* (1B.2)
- Long-haired star-tulip, *Calochortus longebarbatus* var. *longebarbatus* (1B.2)
- Long-stiped campion, *Silene occidentalis* ssp. *longistipitata* (1B.2)
- Marsh skullcap, *Scutellaria galericulata* (2B.2)
- Modoc County knotweed, *Polygonum polygaloides* spp. *esotericum* (1B.1)
- Red Bluff dwarf rush, *Juncus leiospermus* var. *leiospermus* (1B.1).
- Santa Lucia dwarf rush, *Juncus luciensis* (1B.2)
- Slender-leaved pondweed, *Stuckenia filiformis* ssp. *alpina* (2B.2)
- Tufted loosestrife, *Lysimachia thyrsiflora* (2B.3) Watershield, *Brasenia schreberi* (2B.3)
- Water star-grass, *Heteranthera dubia* (2B.2)

The CalTrout Project Manager shall demonstrate compliance with this measure through the submission of a Botanical Survey Report to the California Department of Fish and Game's Northern Region Lake and Streambed Alteration Agreement Program for approval prior to initiation of work. If special status plants are identified during the surveys, CalTrout shall prepare and submit a Botanical Resources Protection Plan within the Botanical Survey Report. At a minimum, occurrences of sensitive plants shall be clearly marked (flagging and/or exclusionary fencing). CalTrout and its contractors shall avoid the marked area(s), including a 25 foot buffer. If a sensitive plant species occurs at a site where heavy equipment work is planned, the Project Manager shall notify the Department of Fish and Wildlife in writing and develop an alternative construction/location plan to perform the work where sensitive species or habitats will not be impacted. If an alternative location is not feasible, the Project Manager shall notify the Department of Fish and Wildlife in writing and develop measures to mitigate the loss of any sensitive plant species. The measures shall reduce impacts below a level of significance and shall include methods for successful long-term establishment of the mitigated sensitive species. Mitigation measures shall be included in the Botanical Resources Protection Plan. Upon written Department of Fish and Wildlife approval of the Botanical Survey Report, Project work may proceed.

Bio-2: To reduce impacts to aquatic organisms and macrophytes below a level of significance, any streambed or streambank work involving the use of heavy equipment to excavate, fill, and/or move earth material potentially causing excess silt/turbidity in the water column, CalTrout and its contractors shall install silt curtains (screens) to

contain and minimize silt/turbidity impacts. Silt curtains shall be installed after Bio-1 has been conducted and cleared by a qualified biologist (if applicable for the specific activity) and before any construction activities are initiated in or adjacent to Hat Creek. Silt curtains shall be installed to minimize in-channel disturbances while effectively catching excess silt from specific activities involving excavating or moving earth materials in-channel or on the stream bank. Silt curtains shall be installed as close to the construction as practical. The silt curtains will fully enclose the area of disturbance with the opening facing the bank. The bottom, top and ends of the curtain shall be securely anchored or keyed to prevent movement due to screen resistance and stream flow. Silt curtains shall remain in place until the specific activity has ceased, sediment has settled or is captured by the screens, and the suspended sediment load is equivalent from disturbed and undisturbed areas. Silt curtain removal shall be conducted as to not create or dispose of excess silt in the water column. Silt screens shall be disposed off-site following local ordinances for disposal. Any excess earth material from excavating, filling, moving, and silt screens/silt shall be disposed away from the stream channel and stream bank where it will not impact Hat Creek and shall be disposed of following local ordinances. The CalTrout Project Manager shall demonstrate compliance with this measure through submission of annual reports due to the California Department of Fish and Game's Northern Region Lake and Streambed Alteration Agreement Program no later than December 31 of each year that the project is implemented.

Bio-3: To reduce potential impacts to rough sculpin (*Cottus asperimus*) below a level of significance and to avoid take, CalTrout and its contractors shall direct all heavy equipment use during instream/stream bank work including bridge abutments and instream structures in the following manner: before any instream or stream bank work can begin, a qualified biologist with experience in rough sculpin biology and identification shall dive survey areas where work will occur. Dive surveys shall occur during the same day as major instream work. If instream work is to occur over multiple days, a dive survey shall be conducted each day of planned instream or stream bank work. During each dive survey, all sculpin species shall be allowed to leave on their own volition. Instream and stream bank work may begin after a qualified biologist has confirmed there are no sculpin species in the work and buffer area. CalTrout and its contractors shall demonstrate compliance with this measure through the submission of annual report(s) due to the California Department of Fish and Wildlife's Northern Region Lake and Streambed Alteration Agreement Program no later than December 31st of each year that the project is implemented.

Bio-4: To reduce indirect impacts (noise, visual disturbances) to nesting bald eagle (*Haliaeetus leucocephalus*), CalTrout and its contractors shall not commence heavy equipment activities, including but not limited to bulldozer, excavator, grader, or helicopter work, between the time periods of February 1st through August 15th of each year throughout duration of the Project. Project activities that do not require the use of heavy equipment can occur throughout the year. CalTrout and its contractors shall demonstrate compliance with this measure through written notification to the California Department of Fish and Wildlife's Northern Region Lake and Streambed Alteration Agreement Program one week prior to any heavy equipment use.

Bio-5: To minimize and avoid significant impacts to birds and mammals utilizing conifer trees for nest or den sites, CalTrout and its contractors shall not harvest any conifer trees for the large woody debris (LWD) work with visible active nests or den sites. If an active nest or den site is located, the area shall be left undisturbed including a 100 foot buffer radius (for non-raptor species) from the active nest and/or den tree. If raptor nests are observed, an appropriate buffer shall be determined in consultation with the Department. Before the harvest of any tree for LWD work, a qualified wildlife biologist with avian and small mammal experience will survey potential harvest locations. If the survey reveals an active nest or den site, tree removal may not proceed within the pre-described buffer area, if no nest or den site is observed, tree removal may proceed.

Cul-1: To reduce potential cultural and historical resource impacts below a level of significance, CalTrout shall ensure that the project will be monitored, during all phases of construction, by the Illmawi and Atsuge bands. There shall be continued monitoring as the project is implemented. This will assure that activities remain compatible with the sensitivity of the traditional cultural property and adjustments can be made to protective measures. In addition,

protective and interpretive signs shall be installed near trailheads, kiosks, and locations where cultural sensitive areas have been identified. The signs will serve to inform the public of the cultural and historical past of the area and help to minimize disturbance to culturally sensitive areas within the Project area. The bands will be involved with the selection of text, placement of signs, and educational materials associated with the project. Overall, the sum of the activities proposed are likely to result in more protection, less degradation, and restoration of traditional cultural resources. If any changes or modification occur to the Project (as previously agreed upon between the Illmawi and Atsuge bands and project proponent) that will potentially adversely affect culturally sensitive areas, the project proponent and its contractors will immediately stop work and discuss/resolve these changes with Illmawi and Atsuge representatives before any potentially adverse work can continue. In addition to monitoring all phases of construction, specific Project activities to be monitored include:

- All trail work leading down to the new proposed pedestrian footbridge shall be monitored by appropriate cultural monitors. This monitoring shall be patrolled several times a week during the first month of the first two fishing seasons. This time frame coincides with the highest angler use and subsequent foot traffic in the Hat Creek WTA. The frequency of monitoring after that will be negotiated with the bands. If issues created by the presence of the footbridge are encountered, the bands will enter into further consultations with the bands to determine how to best adaptively manage the resource. The bridge will be closed during these negotiations.

Initial Study and Environmental Checklist Form

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

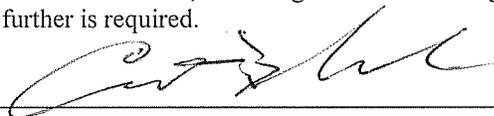
The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|--|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems | <input checked="" type="checkbox"/> Mandatory Findings of Significance | |

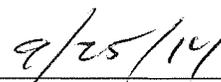
DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- I find that the proposed Project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.
- I find that the proposed Project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.
- I find that the proposed Project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by Mitigation Measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or **NEGATIVE DECLARATION**, including revisions or Mitigation Measures that are imposed upon the proposed Project, nothing further is required.



Signature



Date

Curt Babcock
Environmental Program Manager
California Department of Fish and Wildlife

INITIAL STUDY/ENVIRONMENTAL CHECKLIST

ANALYSIS OF POTENTIAL ENVIRONMENTAL IMPACTS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. Aesthetics. Will the Project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which will adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion: The Hat Creek WTA is set in the Hat Creek Valley on the north side of the Lassen National Forest. This area contains unique geological features such as remnant volcanic basalt flows, exposed diatomaceous earth, cool spring fed streams and rivers. The proposed Project will have minor and limited temporal changes to aesthetics and visual character during Project operations. Although, once the Project is completed and grow out has occurred, the overall aesthetics will be improved through increased native plant assemblages, control of erosive processes and increased wildlife habitat features.

a) State Route 299 bisects the WTA. Although the highway contains scenic vistas through its course in the Hat Creek Valley and northern area of the Lassen National Forest it is not designated as a state scenic highway and the Project area does not contain designated scenic vistas.

b and d) No impacts.

c) The project proposes to improve/decommission trails, create/decommission parking lots, and install instream habitats and a public access foot bridge. These activities will have limited short-term impacts but will improve the long-term overall visual character of the Hat Creek Wild Trout Area.

Impact: *Impacts to Aesthetics are below a level of significance.*

ENVIRONMENTAL ISSUES

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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II. Agriculture and Forest Resources.

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-e) The Project area is located on private and county lands in rural Shasta County with no agriculture or active forest production. The Project proposes to restore and enhance existing land functions for public use. There will be no conversion or lands or conflict with zoning.

Impact: No impacts to Agricultural and Forest Resources are anticipated.

ENVIRONMENTAL ISSUES

Potentially Significant Impact Less Than Significant with Mitigation Incorporated Less Than Significant Impact No Impact

III. Air Quality.

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations. Will the Project:

- a) Conflict with or obstruct implementation of the applicable air quality plan?
- b) Violate any air quality standard or contribute substantially to an existing or Projected air quality violation?
- c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?
- d) Expose sensitive receptors to substantial pollutant concentrations?
- e) Create objectionable odors affecting a substantial number of people?

a-e) The Project proposes no new structures or activities (short or long-term) that would impact air quality. Heavy equipment will be used temporarily to construct/decommission roads, install LWD for aquatic enhancement, and installation of a pedestrian footbridge. The use of heavy equipment to complete these activities is common to the rural Shasta County area.

Impact: No impacts to Air Quality are anticipated.

ENVIRONMENTAL ISSUES

Potentially Significant Impact Less Than Significant With Mitigation Incorporated Less Than Significant Impact No Impact

IV. Biological Resources. Will the Project:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| c) Have a substantial adverse effect on wetlands as defined by the Department of Fish and Game (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
-

a) **Discussion:** A query of the California Natural Diversity Database (CNDDDB) was carried out by CDFW in February 2014. The following United States Geological Survey (USGS) 7.5-minute topographic quadrangles (quads) were queried: Burney Falls, Dana, Fall River Mills, Burney, Cassel, Hogback Ridge, Burney Mountain West, Burney Mountain East, and Murken Bench (9-quad search). In addition, plant, fish, and wildlife experts, The CalFish database, CDFW fish monitoring surveys (1968-2012), 2014 sensitive plant survey, and numerous other references were also reviewed in order to determine the possible occurrence of special status species.

Special Status Species: Resources discussed below include special status plants, aquatic invertebrates, fishes, amphibians, reptiles, birds, and mammals. “Special status species” include all species tracked by CNDDDB potentially occurring in the Project area, and include all those which meet the CEQA definition of Endangered, Rare, or Threatened (see CEQA Guidelines, § 15380).

Special Status Plant Species (vascular and non-vascular): The special status plants discussed below are known from the vicinity (9-quad CNDDDB search) of the Project area. Reference material for plant descriptions and biology are from Calflora, CNPS, Center for Plant Conservation (CPC), and personal communications with local experts.

Federal (ESA) and/or State (CESA or NPPA) listed plant species

Boggs Lake hedge-hyssop (*Gratiola heterosepala*): Boggs Lake hedge-hyssop is listed as a CESA Endangered plant species and CNPS Rare Plant Rank 1B.2. This hedge is an annual semi-aquatic herb belonging to the figwort family. Boggs Lake hedge-hyssop occurs in California’s Central Valley, inner north coast range and Sierra Nevada foothills, but the largest concentration of occurrences are located within the Modoc Plateau. The species is restricted to clay soils in or near shallow water such as at the margins of lakes and vernal pools. It is a very small herb with a main stem extending 1 to 4 inches tall. The Project area contains no vernal pools or complexes and wetland type environments are limited to narrow strips of low gradient land sections or deposition zones adjacent to the creek. There have been specimens documented in the surrounding 9-quad search area (Shasta and Modoc counties), but none at the Project site (Cassel quad).

Green’s tuctoria (*Tuctoria greenei*): Green’s tuctoria is listed as a federal ESA Endangered plant species and CNPS Rare Plant Rank 1B.1. This plant is an annual herb inhabiting vernal pools of valley grassland, freshwater wetlands, and wetland-riparian at elevations of 35-1,140 m. The Project area contains no vernal pools or complexes and wetland type environments are limited to narrow strips of low gradient land sections or deposition zones adjacent to the creek.

There have been specimens documented south (Shasta County – Lassen National Forest) of the Project area, but none at the Project site (Cassel quad).

Slender Orcutt grass (*Orcuttia tenuis*): Slender Orcutt grass is listed as ESA Threatened, CESA Endangered, and CNPS Rare Plant Rank 1B.1. Slender Orcutt grass is a California endemic annual herb inhabiting vernal pools and other moist areas with clay soils in valley grasslands, coniferous forests, or sagebrush scrub. This annual grass is threatened by agriculture, residential development, grazing, vehicles, recreational activities, logging, fire, trampling, and nonnative plants. Slender Orcutt grass is found in the Cascades, Sierra Nevada foothills, inner North Coast Ranges, and Modoc Plateau at elevations ranging between 35 and 1,760 meters. There have been specimens documented in the surrounding 9-quad search area (Shasta County), but none at the Project site (Cassel quad). No vernal pools or complexes are known within the Project site. Hat Creek, within the Project area, is a stable spring fed stream with little to no variation in stream flow/elevation. Seasonally flooded areas or ponding due to flooding are rare within the project site. With no vernal pools or complexes and rare seasonally inundated areas, it is unlikely slender Orcutt grass would be found within the Project site. In addition to reviewing locations of known populations of Slender Orcutt Grass, a site visit was conducted on July 21, 2014 by Julianne Spelletich Botanical Surveys & Consultations to determine the potential presence of previously unknown population in the vicinity of the project site, given the potential suitable habitat at the site. No plants were found during the survey. USFWS subsequently made a “no effect” determination for the Project pursuant to an informal ESA Section 7 consultation (USFWS 2014).

Tracy’s eriastrum (*Eriastrum tracyi*): Tracy’s eriastrum is listed as a California Rare plant and CNPS Rare Plant Rank 3.2. It is closely related to Brandegee’s eriastrum. This plant is an annual herb and occurs within chaparral lands and cismontane woodlands at elevations ranging between 315 and 1,645 meters. The Project area contains seasonally dry oak/ponderosa woodlands which may be suitable for this species. There have been specimens documented in the surrounding 9-quad search area (Shasta County), but none at the Project site (Cassel quad).

Sensitive (California Rare Plant Rank)

Bellinger’s meadowfoam (*Limnanthes floccosa* spp. *bellingermana*): Bellinger’s meadowfoam is listed as California Rare Plant Rank 1B.2. This annual plant is associated with high-elevation vernal pools (seasonal wetland in rocky meadows with shallow soils that are at least partially shaded in the spring. Elevations range from 3600 to 3900 ft. (1,100-1,200 m) in Oregon, and California populations from 290 -1,100 meters. The Project area contains no vernal pools or complexes and wetland type environments are limited to narrow strips of low gradient land sections or deposition zones adjacent to the creek. There have been specimens documented in the surrounding 9-quad search area (Shasta County), but none at the Project site (Cassel quad).

Broad-nerved hump moss (*Meesia uliginosa*): broad-nerved hump moss is listed as CNPS Rare Plant Rank 2B.2. This moss is typically is 1-4 cm tall with dense green to yellowish green tufts of erect shoots. Typical habitat consists of wet soil or peaty humus in wetlands and rock fissures of alpine and subalpine areas. The Project area contains a limited amount of peaty wetland type soil, but it is highly exposed (mainly a grassland) with no substantial rock structures associated with this area. There have been specimens documented in the surrounding 9-quad search area (Shasta County), but none at the Project site (Cassel quad).

Castlegar Hawthorn (*Crataegus castlegarensis*): Castlegar hawthorn is CNPS Rare Plant Rank 3 (more information is needed). This species belongs to the rose family (Rosaceae) and is distributed from mid-elevations (900-1300 meters) in northern California. Typical environments include: meadows, scrub, and forest communities. In 2008, approximately 10 shrubs were observed on the west side of Hat Creek approximately 200 yards upstream from SR299. Project work planned for the area where Castlegar hawthorn has been noted is limited to native plant restoration. As noted, this plant has been identified from the Project site and will be included/identified in any sensitive plant surveys.

Eel-grass pondweed (*Potamogeton zosteriformis*): Eel-grass pondweed is CNPS Rare Plant Rank 2B.2. Eel-grass pondweed is an annual herb inhabiting marsh, swamp, and wetland environments and is distributed from 0 – 1,860 meters in elevation. The Project contains a constant low velocity creek with limited backwaters that could support this species. This species is presumed extant from the Project area and will be included in sensitive plant surveys where in-channel activities will occur.

English peak greenbrier (*Smilax jamesii*): English peak greenbrier is listed as CNPS Rare Plant Rank 1B.3. This greenbrier is a perennial monocot herb commonly found in wetlands, riparian, streambanks, lake-margins, and edges at elevations of 1,500-2,500 m. It can be identified by a mature stem length of 2-3 m, 5-8 cm triangular to ovate ridge-tipped dark green leaves, and blooms May-September with 6-8 mm dark blue fruit. The Project area contains preferred wetland type habitats and maybe present on site. There have been specimens documented in the surrounding 9-quad search area (Shasta County), but none at the Project site (Cassel quad).

Lemmon's milk-vetch (*Astragalus lemmonii*): Lemmon's milk-vetch is listed as CNPS Rare Plant Rank 1B.2. This plant is a perennial herb inhabiting meadows and seeps, marshes and swamps and Great Basin scrub. It typically occurs at elevations of 1,000-2,000 m. The Project area contains wetland type environments which may support this species. These wetland type environments are limited to narrow strips of low gradient land sections or deposition zones adjacent to the creek. There have been specimens documented in the surrounding 9-quad search area (Shasta and Modoc counties), but none at the Project site (Cassel quad).

Long-haired star-tulip (*Calochortus longebarbatus* var. *longebarbatus*): long-haired star-tulip is listed as CNPS Rare Plant Rank 1B.2. This plant is a perennial bulbiferous herb inhabiting clay, mesic, meadows and seeps and vernal pools. It can be found at elevations of 1,000-1,900 m. The Project area contains no vernal pools or complexes and wetland type environments are limited to narrow strips of low gradient land sections or deposition zones adjacent to the creek. There have been specimens documented in the surrounding 9-quad search area (Shasta County), but none at the Project site (Cassel quad).

Long-stiped campion (*Silene occidentalis* spp. *longistipitata*): long-stiped campion is listed as CNPS Rare Plant Rank 1B.2. This plant is a perennial herb inhabiting chaparral, and lower and upper montane coniferous forests. It can be found at elevations of 1,000-2,000 m. The Project area contains seasonally dry oak/ponderosa woodlands which may be suitable for this species. There have been specimens documented in the surrounding 9-quad search area (Shasta County), but none at the Project site (Cassel quad).

Marsh skullcap (*Scutellaria galericulata*): marsh skullcap is listed as CNPS Rare Plant Rank 2B.2. Marsh skullcap is a perennial rhizomatous herb inhabiting wetland habitats such as lower montane coniferous freshwater marshes and meadows. Possible threats include hydrological alterations and recreational activities. The Project area contains wetland type environments which may support this species. These wetland type environments are limited to narrow strips of low gradient land sections or deposition zones adjacent to the creek. While no Marsh skullcap plants have been documented from the Project site, plants have been documented in the Fall River area.

Modoc County knotweed (*Polygonum polygaloides* spp. *esotericum*): Modoc County knotweed is listed as CNPS Rare Plant Rank 1B.1. This plant is an annual herb inhabiting mesic areas including meadows and seeps, vernal pools, Great Basin scrub, and lower montane coniferous forests. The blooming period is May-September. This species is typically located between 885 and 1,690 meters in elevation. Potentially threatened by road construction and development, grazing, non-native plants, and trampling. The Project area contains no vernal pools or complexes and wetland type environments are limited to narrow strips of low gradient land sections or deposition zones adjacent to the creek. There have been specimens documented in the surrounding 9-quad search area (Shasta County), but none at the Project site (Cassel quad).

Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*): Red Bluff dwarf rush is listed as CNPS Rare Plant Rank 1B.1. This California endemic inhabits the edges of vernal pools in valley grasslands, chaparral and foothill woodlands. This rush is typically located between elevations of 35-1,250 m. This species of rush is threatened by development, grazing, vehicles, industrial forestry and agricultural conversion. The Project area contains no vernal pools or complexes and wetland type environments are limited to narrow strips of low gradient land sections or deposition zones adjacent to the creek... There have been specimens documented in the surrounding 9-quad search area (Shasta County), but none at the Project site (Cassel quad).

Santa Lucia dwarf rush, (*Juncus luciensis*): Santa Lucia dwarf rush is listed as CNPS Rare Plant Rank 1B.2. This annual rush species inhabits wetland type environments found in chaparral, Great Basin scrub, lower montane coniferous forests communities. Threats possible include development. The Project area contains wetland type environments which may support this species. These wetland type environments are limited to narrow strips of low gradient land sections or deposition zones adjacent to the creek. While no Santa Lucia dwarf rush plants have been documented from the Project site, plants have been documented west of Burney Mountain.

Slender-leaved pondweed, (*Stuckenia filiformis* ssp. *alpina*): slender-leaved pondweed is a CNPS Rare Plant Rank 2B.2. This perennial rhizomatous herb inhabits assorted shallow freshwater environments and is typically found at 300 – 2,150 meters in elevation. The Project contains a constant low velocity creek with limited backwaters that could support this species. This pondweed is presumed extant from the Project area.

Water star-grass, (*Heteranthera dubia*): water star-grass is listed as a CNPS Rare Plant Rank 2B.2. This perennial herb is strongly associated with wetland type environments with still or slow moving water and the water pH is 7 or higher. Water star-grass occurs at 30 – 1,495 meters in elevation. The Project contains a constant low velocity creek with limited backwaters that could support this species. There have been specimens documented in the surrounding 9-quad search area (Shasta County), but non at the Project site (Cassel quad).

Watershield, (*Brasenia schreberi*): watershield is listed as a CNPS Rare Plant Rank 2B.3. This perennial rhizomatous herb inhabits wetland type environments including freshwater marshes and swamps. Watershield occurs at 30 – 2,200 meters in elevation. The Project contains a constant low velocity creek with limited backwaters that could support this species. While no watershield plants have been documented from the Project site, plants have been documented from the Fall River area.

Because floristic or focused botanical surveys have not been conducted for all special status plant species with the potential to occur within the Project area, special status plant species presence cannot be ruled out. Impacts may occur to special status plant species and the possibility of a significant impact likewise cannot be ruled out. Therefore, the Project has the potential to result in significant impacts to special status plant species. However, implementation of mitigation measure **Bio-1** will reduce the impact below a level of significance.

Bio-1: To avoid disturbance-related impacts to special status plant species, CalTrout shall have a qualified botanist survey potentially suitable habitat for special status plant species within the Project area. Surveys and reporting shall be conducted prior to project initiation and during the season when any special status plants would be evident, in accordance with the Department's November 2009 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* available at: https://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html. Special status plant species for the Project area include the following:

- Boggs Lake hedge-hyssop, *Gratiola heterosepala* (state Endangered, 1B.2)
- Greene's tuctoria, *Tuctoria greenei* (federal endangered, state Rare, 1B.1)

- Tracy's eriastrum, *Eriastrum tracyi* (state Rare, 3.2)
- Bellinger's meadowfoam, *Limnanthes floccose* spp. *bellingermana* (1B.2)
- Broad-nerved hump moss, *Meesia uliginosa* (2B.2)
- Castlegar hawthorn, *Crataegus castlegarensis* (3)
- Eel-grass pondweed, *Potamogeton zosteriformis* (2B.2)
- English Peak greenbrier, *Smilax jamesii* (1B.3)
- Lemmon's milk-vetch, *Astragalus lemmonii* (1B.2)
- Long-haired star-tulip, *Calochortus longebarbatus* var. *longebarbatus* (1B.2)
- Long-stiped campion, *Silene occidentalis* ssp. *longistipitata* (1B.2)
- Marsh skullcap, *Scutellaria galericulata* (2B.2)
- Modoc County knotweed, *Polygonum polygaloides* spp. *esotericum* (1B.1)
- Red Bluff dwarf rush, *Juncus leiospermus* var. *leiospermus* (1B.1).
- Santa Lucia dwarf rush, *Juncus luciensis* (1B.2)
- Slender-leaved pondweed, *Stuckenia filiformis* ssp. *alpina* (2B.2)
- Tufted loosestrife, *Lysimachia thyrsiflora* (2B.3) Watershield, *Brasenia schreberi* (2B.3)
- Water star-grass, *Heteranthera dubia* (2B.2)

The CalTrout Project Manager shall demonstrate compliance with this measure through the submission of a Botanical Survey Report to the California Department of Fish and Game's Northern Region Lake and Streambed Alteration Agreement Program for approval prior to initiation of work. If special status plants are identified during the surveys, CalTrout shall prepare and submit a Botanical Resources Protection Plan within the Botanical Survey Report. At a minimum, occurrences of sensitive plants shall be clearly marked (flagging and/or exclusionary fencing). CalTrout and its contractors shall avoid the marked area(s), including a 25 foot buffer. Upon written Department of Fish and Wildlife approval of the Botanical Survey Report, Project work may proceed.

Aquatic Invertebrate Resources: the special-status invertebrates discussed below are known from the Project area (9-quad CNDDDB search).

Federal (ESA) and/or State (CESA) listed aquatic invertebrate species

Shasta crayfish (*Pacifastacus fortis*): Shasta crayfish is an ESA Endangered and CESA Endangered species. It lives in cold, clear spring-fed headwaters that are characterized by clean volcanic cobbles and boulders on top of gravel or sand substrate. Its distribution is limited to the midsections of the Pit River drainage, primarily the Fall River and Hat Creek subdrainages in northeastern Shasta County. The crayfish grows to about 2-4 inches long and requires a constant, steady, and untainted flow of fresh water to survive. Threats to Shasta crayfish include – damming, mining, agriculture, and impacts from exotic species such as the signal crayfish, *Pacifastacus leniusculus*. Extensive research and observations identified specific locations where Shasta crayfish currently exist (USFWS 1998). These known locations are outside the project area and are further isolated by hydroelectric dams and bypass structures. In addition, the project area is known to contain signal crayfish, a species directly linked to the decline of Shasta crayfish. Since Shasta crayfish are not in the project area and will not be affected by Project operations in any way, no additional mitigation measures will be implemented for the protection of Shasta crayfish.

Sensitive aquatic invertebrate species

Fingernail clam (*Pisidium ultramontanum*): fingernail clam, also known as the montane peaclam, is a State ranked S1 (Critically Imperiled) species. The fingernail clam is a local riparian endemic associated with lakes and springs. It is generally found on sand-gravel substrates in spring-influenced streams and lakes, and occasionally in large spring

pools. These sites are characterized by a high diversity of aquatic mollusks. Threats to the clam include eutrophication, pollution from urban, agricultural, and industrial use, water diversion, and habitat modification. Continuing development threatens existing sites, and some sites may no longer be occupied due to water impoundment and pollution (FS/BLM). The fingernail clam is known to exist from the local vicinity (Cassel quad), and impacts are potentially significant. To reduce impacts to the fingernail clam below a level of significance, mitigation measure **Bio-2** shall be implemented when in-channel disturbances are expected.

Great Basin rams-horn (*Helisoma newberryi*): Great Basin Rams-horn is a State ranked S1 (Critically Imperiled) species. The Great Basin rams-horn is a very specialized snail found in larger lakes and slow rivers, including larger spring sources and spring-fed creeks. These snails characteristically burrow in soft mud and may be invisible even when abundant. Areas with this species generally have a well-oxygenated but soft substrate and clear, very cold, slowly flowing water; sites may be associated with very large spring pools or strongly spring-influenced areas in larger streams or lakes. This species prefers muddy environments where macrophytes are present, and is generally found just below the sediment surface. It is a detritus feeder. Threats include human modification water quality, nutrient concentration, sedimentation, eutrophication, grazing, and habitat loss by conversion of springs for livestock and domestic usage (FS/BLM). The fingernail clam is known to exist from the local vicinity (Cassel quad), and impacts are potentially significant. To reduce impacts to the Great Basin rams-horn below a level of significance, mitigation measure **Bio-2** shall be implemented when in-channel disturbances are expected.

Nugget pebblesnail (*Fluminicola seminalis*): the nugget pebble snail is a State ranked S1/S2 (Critically Imperiled/Imperiled) species. The nugget pebblesnail prefers cool, clear, flowing water and gravel-cobble substrate. It is typically found in large creeks and rivers. In addition, it can occur on soft, mud substrates in large spring pools. Aquatic environments generally have clear, cold, well oxygenated, flowing waters that have relatively low concentrations of dissolved nitrogen and phosphorus. Substrates are primarily characterized by coarse boulders, cobbles and gravel mostly derived from metamorphic and igneous parent material with some sedimentary lithologies. There are a few occupied lake and marsh habitats. Threats include – water pollution, dam construction altering downstream habitats, reduction in water flow/diversions, and excessive sediment (FS/BLM). Impacts to the nugget pebblesnail are potentially significant. To reduce impacts to the nugget pebblesnail below a level of significance, mitigation measure **Bio-2** shall be implemented when in-channel disturbances are expected.

Scalloped juga (*Juga occata*): the scalloped juga is a State ranked S1 (Critically Imperiled) species. The scalloped juga is believed restricted to unimpounded and clean portions of the Pit River and upper Sacramento River in northern California. However, it appears the populations are fragmented in these river systems. Populations have declined from former distributions throughout the lower Sacramento and San Joaquin Valleys. This species is now thought to be extirpated from the entire San Joaquin and most of the Sacramento rivers (ICUN). Threats include – water pollution, impoundments, riverbed alterations, and mining. Impacts to the scalloped juga are potentially significant. To reduce impacts to the scalloped juga below a level of significance, mitigation measure **Bio-2** shall be implemented when in-channel disturbances are expected.

Shasta Hesperian (*Vespericola Shasta*): Shasta Hesperian is a State ranked S1 (Critically Imperiled) species. The Shasta Hesperian habitat includes moist bottom lands, such as riparian zones, springs, seeps, marches, and the mouths of caves. This snail is located in the Klamath Province, primarily in the vicinity of Shasta Lake, up to 915 meters elevation. Due to its unique habitat requirements, it is unlikely to occur in the Project footprint. There have been specimens documented in the surrounding 9-quad search area (Shasta County), but none at the Project site (Cassel quad).

Topaz juga (*Juga acutifilosa*): Topaz juga is a State ranked S2 (Imperiled) species. Topaz juga inhabit includes large springs and outflows, where it is restricted to cold, unpolluted, well-oxygenated water with gravel substrates at low to medium elevations. Threats include - pollution, sedimentation, and reduced water flow (e.g., from groundwater

abstraction) of spring habitats (ICUN). Impacts to the Topaz juga are potentially significant. To reduce impacts to the Topaz juga below a level of significance, mitigation measure **Bio-2** shall be implemented when in-channel disturbances are expected.

Bio-2: To reduce impacts to aquatic organisms and macrophytes below a level of significance, any streambed or streambank work involving the use of heavy equipment to excavate, fill, and/or move earth material potentially causing excess silt/turbidity in the water column, CalTrout and its contractors shall install silt curtains (screens) to contain and minimize silt/turbidity impacts. Silt curtains shall be installed after Bio-1 has been conducted and cleared by a qualified biologist (if applicable for the specific activity) and before any construction activities are initiated in or adjacent to Hat Creek. Silt curtains shall be installed to minimize in-channel disturbances while effectively catching excess silt from specific activities involving excavating or moving earth materials in-channel or on the stream bank. Silt curtains will be installed as close to the construction as practical. The silt curtains will fully enclose the area of disturbance with the opening facing the bank. The bottom, top and ends of the curtain will be securely anchored or keyed to prevent movement due to screen resistance and stream flow. Silt curtains shall remain in place until the specific activity has ceased, sediment has settled or is captured by the screens, and the suspended sediment load is equivalent from disturbed and undisturbed areas. Silt curtain removal shall be conducted as to not create or dispose of excess silt in the water column. Silt screens shall be disposed off-site following local ordinances for disposal. Any excess earth material from excavating, filling, moving, and silt screens/silt shall be disposed away from the stream channel and stream bank where it will not impact Hat Creek and shall be disposed of following local ordinances. The CalTrout Project Manager shall demonstrate compliance with this measure through submission of annual reports due to the California Department of Fish and Game's Northern Region Lake and Streambed Alteration Agreement Program no later than December 31 of each year that the project is implemented.

Special Status Fish Resources: the special status fish species discussed below are known from the vicinity (9-quad CNDDDB search) of the Project area.

Federal (ESA) and/or State (CESA) listed fish species

Rough sculpin (*Cottus asperimus*): Rough sculpin is known to occur within the Project area. The species is listed as CESA Threatened species and is a California Fully Protected species. Rough sculpin are primarily found in large, spring-fed streams where water temperature is cool, deep, rapidly flowing, and remarkably clear. In these streams they are associated with gravel or sand bottoms and beds of aquatic plants. Rough sculpin can be found in other habitats including small riffle-dominated streams and lake environments (e.g., Lake Britton) with warmer summertime temperatures. Compared with other sculpin species, rough sculpins are slow growing and small. Most rough sculpins become mature after their second year, at sizes greater than 35 cm standard length. Spawning occurs between mid-February to early May in Hat Creek. Nest sites are in a wide variety of habitats, from riffles to pools, often over active springs with bottom substrates ranging from sand to cobble (Moyle 2002). Threats include streambed alterations, water diversions, impaired water quality, exotic species, and loss of habitat.

Impacts to rough sculpin are potentially significant. In addition, rough sculpin is a California Fully Protected species and may not be taken or possessed at any time except by CDFW. No licenses or permits may be issued for their take except for collecting these species for necessary scientific research. Due to this designation, CDFW cannot authorize the Project to incidentally "take" rough sculpin during Project activities. The following mitigation measure shall be implemented by CalTrout and its contractors to reduce potential impacts below a level of significance and to avoid take of rough sculpin during Project activities:

Bio-3: To reduce potential impacts to rough sculpin (*Cottus asperimus*) below a level of significance and to avoid take, CalTrout and its contractors shall direct all heavy equipment use during instream/stream bank work including bridge abutments and instream structures in the following manner: before any instream or stream bank work can begin,

a qualified biologist with experience in rough sculpin biology and identification shall dive survey areas where work will occur. Dive surveys shall occur during the same day as major instream work. If instream work is to occur over multiple days, a dive survey shall be conducted each day of planned instream or stream bank work. During each dive survey, all sculpin species shall be allowed to leave on their own volition. Instream and stream bank work may begin after a qualified biologist has confirmed there are no sculpin species in the work and buffer area. CalTrout and its contractors shall demonstrate compliance with this measure through the submission of annual report(s) due to the California Department of Fish and Wildlife's Northern Region Lake and Streambed Alteration Agreement Program no later than December 31st of each year that the project is implemented.

Sensitive Fish Species

Bigeye marbled sculpin (*Cottus klamathensis macrops*): bigeye marble sculpin is listed as a California Species of Special Concern. Bigeye marble sculpin are found mainly in low-gradient spring-fed systems and rivers, where water temperature is cold (<20°C in summer) and there is enough fine substrate to support beds of aquatic plants. They are typically found in runs or pools that have mean depths of 57—72 cm and mean water column velocities of around 23 cm/sec. The sculpins can be found in a variety of substrates, but tend to select deeper areas near vegetative cover. Preferred water temperatures are in the range of 11-15°C. Bigeye marbled sculpins can live about 5 years and attain sexual maturity after 2 years. Female fecundity is low and spawning occurs from late February to March. Bigeye marble sculpin can co-occur with rough sculpin (CESA Threatened) and Shasta crayfish (ESA Endangered and CESA Endangered). Habitat protection for these listed species will benefit bigeye marble sculpin (Moyle 2002). Threats include – streambed alterations, water diversions, water quality, exotic species, and loss of habitat. Bigeye marbled sculpin have been collected from the project area (CDFW 2012). Impacts to bigeye marbled sculpin are potentially significant. To reduce impacts to bigeye marbled sculpin below a level of significance, mitigation measure **Bio-2 and Bio-3** shall be implemented when in-channel disturbances are expected.

Hardhead (*Mylopharodon conocephalus*): Hardhead is listed as a California Species of Special Concern. Hardhead are typically found in small to large streams in a low to mid-elevation environment. Hardhead may also inhabit lakes or reservoirs. All ages are omnivores though the juvenile and adult fish switching to larger prey items including fish. Within a stream hardhead tend to prefer warmer temperatures than salmonids and they are often found associated with Sacramento pikeminnows and suckers. Their preferred stream temperature might easily exceed 20°C, though these fish do not favor low dissolved oxygen levels. Therefore the hardhead minnow is usually found in clear deep streams with a slow but present flow. Most hardhead reach sexual maturity at 3 years and spawn in the spring around April-May; though spawning may take place as late as August. In small streams hardhead tend to spawn near their resident pools, while fish in larger rivers or lakes often move up to 30-75 km to find suitable spawning grounds. Though spawning may occur in pools, runs, or riffles, the bedding area will typically be characterized by gravel and rocky substrate. Adult hardhead may live up to 9 or 10 years. Threats include – streambed alterations, water diversions, water quality, exotic species, and loss of habitat (California Fish Website) There have been hardhead documented in the surrounding 9-quadrant search area (Shasta County), but none have been documented from the upstream section of the Wild Trout Area (CDFW 2012).

Pit roach (*Lavina symmetricus mitrulus*): pit roach is listed as a California Species of Special Concern. Pit roach are a sub-species of California roach and share many habitat similarities, but can differ in morphology, meristics, and zoogeography (Moyle 2002). Roach are capable of adapting to varying habitats from coastal streams to mountain foothill streams. They are predominately found in small warm streams but are capable of thriving in larger colder streams with diverse conditions. They may actually occupy several different habitat types within a single drainage. Extreme tolerance includes temperatures ranging from 30-35°C and dissolved oxygen levels as low as 1-2 ppm. In-stream location may vary depending on geography and predators. When California roach share water with Sacramento pikeminnows, roach will stick to the stream margins, whereas in the absence of these piscivorous fish roach may venture into deeper pools. California roach are omnivorous and diet may depend on stream size and food availability.

In smaller rivers roach feed mostly on filamentous algae, supplementing their diet with crustaceans and insects. In larger rivers these fish may focus on a diet of aquatic insects year round. The growth and development of California roach is largely seasonally dependent. Most growth occurs during the summer months and roach may grow 20-40 mm in a year. Most fish of this species reach sexual maturity at age 2-3 and rarely live beyond three years total. Spawning occurs in March through early July, and timing is temperature dependent. California roach breed in gravel beds or riffles where groups of females lay eggs on and into the substrate. Threats include – streambed alterations, water diversions, water quality, exotic species, and loss of habitat (California Fish Website). There have been Pit roach documented in the surrounding 9-quad search area (Shasta and Modoc counties), but none have been documented from the upstream section of the Wild Trout Area (CDFW 2012).

Special Status Amphibian/Reptile Resources: the special-status amphibian/reptile species discussed below are known from the vicinity (9-quad CNDDDB search) of the Project area.

Cascades frog (*Rana cascadae*): Cascades frog is listed as a California Species of Special Concern. Cascades frogs range from the northern Sierra Nevada Mountains, north throughout the Cascades Ranges of California, Oregon, and Washington. Two isolated populations occur west of the Sierra Nevada/Cascade range in the Olympic Peninsula in Washington and the Klamath mountains in Northern California. In California, Cascades frog distribution is associated with montane and sub-alpine landscapes. Known extant California populations appear to be restricted to elevations above 1,220 m. Cascades frogs can be found in all types of aquatic habitats including ponds, meadows, deep lakes, and creeks. Cascades frogs can use a variety of habitats and suggests individuals may move seasonally depending on specific life history attributes such as breeding, summer and wintering. The Cascades frog is considered to be medium sized among western ranid frogs (Garwood and Welsh 2007). Threats to Cascade frogs include habitat loss, disease, pollution, climate change and introduction of non-native species. There have been Cascades frogs documented in the surrounding 9-quad search area (Shasta County), but due to the lower elevation of the Project site, it is unlikely habitat for Cascades frog,

Western pond turtle (*Emys marmorata*): The western pond turtle is a California Species of Special concern. It historically occurred in Washington, Oregon, California, and Baja California, and had a relatively continuous distribution within California principally west of the Sierra-Cascade crest. Western pond turtle is the subspecies found in western United States. This species population is currently at a fraction of their historical levels. They nevertheless occur throughout much of their historical range. Although a USFWS determination in 1992 found that listing under the ESA was not warranted, and is considered a Species of Special Concern in California.

Within California, the Central Valley is thought to have supported the highest historical concentrations of western pond turtle. The conversion of native wetlands and floodplains for urban and agricultural uses has eliminated most of the turtle's habitat of the Central Valley. Western pond turtle numbers are greatly reduced, but the species is thought to still occur in rivers, backwaters, and wetlands of roughly 90 percent of its historical range, including perennially flowing rivers in the Central Valley. Expansion of agriculture and other development in upland areas has probably adversely affected nesting habitat and connectivity.

The Western pond turtle is known to exist within the Project Area. Most turtle observations have been made downstream of the Carbon reach area where LWD is more plentiful. Suitable habitat exists throughout the Project Area, so the potential for the presence of turtles, depending on life stage, is high. The timing of the Project's heavy equipment use (August 15 through November 30) coincides with turtles of various ages being present in the water; nests in or near the streambank; and/or turtles moving into the areas near the stream to either sun themselves or potentially begin hibernating. Depending on air temperature, eggs laid in the summer may hatch by October, and the hatchlings will either (1) stay in the nest until spring, or (2) move out of the nest and into the water. The majority of heavy equipment use will be restricted to areas of previous human disturbance (e.g. existing dirt roads and parking

lots) with no anticipated impacts to pond turtles, although minimal heavy equipment use will occur in undisturbed areas to gather and stage LWD for helicopter transport. This work is expected to occur in upland mature Ponderosa pine forest areas away from the streambank. Although it is unlikely that western pond turtle will be impacted, the possibility that Project activities could result in an adverse impact cannot be ruled out. It is anticipated that any adverse impact would involve a very small number of individuals, and would be temporary in nature. Therefore, impacts to Western pond turtles would be below a level of significance.

Special Status Bird Species: the special status bird species discussed below are known from the vicinity (9-quad CNDDDB search) of the Project area.

Federal (ESA) and/or State (CESA) listed bird species

Bald eagle (*Haliaeetus leucocephalus*) –bald eagle is listed as Threatened under CESA and is a state Fully Protected Species. Bald eagles range throughout most of North America (Alaska to Mexico). They are large in size (2.5-3 feet in height and wing spans of 6.5 feet) predatory raptors. Bald eagles are solitary, but monogamous animals. A mated eagle pair finds a nesting site and produces offspring each year. If one of the pair dies, the surviving bald eagle will look for a new mate in the next breeding season. The nests are built on the tops of larger trees. The pair uses sticks and twigs to construct a platform nest. Some pairs return to the same nest year after year. Bald eagles normally lay two or three eggs per nesting season. The eggs are incubated for about 35 days. Depending on the location, the eggs are laid in the winter or spring. For about 2½ months, the parents will care for the chicks by bringing food to the nest. Threats to bald eagle include – loss and encroachment of habitat, chemical pollutants, and hunting (NWF).Bald eagles (including an active nest) are known to occur within the Project site. Noise and visual disturbance associated with the Project has the potential to indirectly disrupt bald eagle nesting, which could lead to abandonment or failure of the nest and/or result in predation of eggs or young. Motorized equipment use near the nest would be the primary threat to nesting success. Disruption of nesting is a potentially significant impact. Mitigation measure **Bio-4** (below) will be implemented by CalTrout and its contractors to reduce impacts to nesting bald eagles below a level of significance.

Bio-4: To reduce indirect impacts (noise, visual disturbances) to nesting bald eagle (*Haliaeetus leucocephalus*), CalTrout and its contractors shall not commence heavy equipment activities, including but not limited to bulldozer, excavator, grader, or helicopter work, between the time periods of February 1st through August 15th of each year throughout duration of the Project. Project activities that do not require the use of heavy equipment can occur throughout the year. CalTrout and its contractors shall demonstrate compliance with this measure through written notification to the California Department of Fish and Wildlife’ s Northern Region Lake and Streambed Alteration Agreement Program one week prior to any heavy equipment use.

Bank swallow (*Riparia riparia*) - bank swallow is listed as Threatened under CESA. This Neotropical migrant is found primarily in riparian and other lowland habitats of California during the spring-fall period. During the summer months the species is restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine-textured or sandy soils, into which it digs nesting holes. It is estimated that approximately 75 percent of the current breeding population in California occurs along banks of the Sacramento and Feather rivers and some of its tributaries in the northern Central Valley. The bank swallow feeds on a wide variety of aerial and terrestrial soft-bodied insects including flies, bees, and beetles predominantly over open riparian areas, but also over brushland, grassland, wetlands, water, and cropland. It uses burrows dug in cliffs and river banks for cover.

Bank swallow nesting colonies are normally located on vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, and the ocean. Breeding occurs between early May through July, with peak activity from mid-May to mid-June. Eggs and adults are preyed upon by rats, skunks, house cats, snakes, and some raptors. In

California, however, gopher snakes (*Pituophis melanoleucus*) and American kestrels (*Falco sparverius*) are the most common predators. Channelization and stabilization of banks of nesting rivers, and other destruction and disturbance of nesting areas, are major factors causing the marked decline in numbers in recent decades. There have been bank swallow nesting sites documented in the surrounding 9-quad search area (Shasta County), but none at the Project site. The Project site does not contain suitable habitat (bluffs or steep sided transitions with loosely compacted material for nest excavation). In addition, with implementation of **Bio-3**, no heavy equipment activity will occur between February 1st and November 15th. It is anticipated the Project will not impact bank swallow.

Greater sandhill crane (*Grus Canadensis tabida*): greater sandhill crane is a CESA Threatened species. The greater sandhill crane is the largest of six subspecies of sandhill cranes that occur throughout North America. There are five recognized populations of greater sandhill cranes. The population that occurs in California is known as the Central Valley Population. These birds winter in California's Central Valley, and nest in northeastern California, eastern Oregon, portions of Nevada and Washington, and British Columbia. Oregon and British Columbia support the majority of the nesting population and only a few pairs are found in Nevada and Washington. It is thought that 200- 300 pairs nest in northeastern California. Recent estimates place the entire Central Valley Population of greater sandhill cranes between 4,000 and 5,000 birds. These long-legged birds occupy shallow wetlands and open wet meadows and fields. Greater sandhill cranes are very long-lived, with birds surviving 20 to 30 years in the wild not at all uncommon. A greater sandhill crane pair nesting for the first time is at least three years old and often as old as seven or eight years. Unless a mate dies, greater sandhill cranes form lifelong pair bonds. Though the population within California appears to be slowly increasing, concern over the decline of breeding and wintering habitat and the lack of young that survive to adulthood still exists (CDFW website).

The available habitat for greater sandhill cranes is very limited within the Project area. This area is located on the southeastern side of the project and is unlikely to support habitat/nesting sites due to its limited size 0.004 km² (1.02 acre) and proximity to public foot traffic. The Project proposes no heavy equipment use in this area and limited plant restoration work. In addition, the mitigation measure for nesting bald eagles (**Bio-3**); would provide a work window to allow a nesting pair to complete breeding and successful raise young to fledging size. There have been no documented greater sandhill cranes within the Project area recently, including a 2012 season long (April-November) fishing creel conducted by the CDFW (other species were noted during the creel). With the local information about greater sandhill cranes and mitigation measure **Bio-3**, there should be no impact to sandhill cranes.

Willow flycatcher (*Empidonax traillii*): willow flycatcher is a CESA Endangered species. Willow flycatcher is a summer resident in wet meadow and montane riparian habitats at 600-2,500 m (2,000-8,000 ft.). Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows. Dense willow thickets are required for nesting and roosting. Nesting occurs in open, cup nests places upright in a fork of a will or other shrub, or occasionally on a horizontal limb, at height of 0.5-3.0 m (1.5-10 ft.). Willow flycatcher is a seasonal resident in California, arriving from Central and South American wintering grounds in May and June and usually departs in August through mid-September.

The project contains one willow species, Pacific willow (*Salix lasiandra*). There are no dense stands of Pacific willows in the Project area beside a single row lining the shore at the PG&E Hat Creek Powerhouse #2 parking lot. In addition, this area is heavily used by anglers throughout the fishing season. Pacific willows will not be removed during Project activities and additional plantings are proposed in the planting plan. Willow flycatcher has been documented in the Project quad (Cassel) but on the Pit River system which contains more dense stands of willows. With no dense willow thickets (or similar vegetation habitat) available for nesting habitat within the Project area, there are no anticipated impacts to willow flycatcher during Project activities.

Sensitive Bird Species

Black swift (*Cypseloides niger*): the black swift is a CDFW Special of Special Concern. The black swift occurs in California as a summer resident and migrant from mid-April to mid-October. Nest sites are occupied from mid-May to mid-September, but most nesting occurs during June through August. Breeding black swifts are restricted to a very limited supply of potential nesting locations: behind or beside permanent or semi-permanent waterfalls, on perpendicular cliffs near water, and in sea caves. In addition, it appears the preferred prey items of black swifts is winged ants. Threats to nesting areas are mostly like limited due to the inaccessibility of the nesting sites, although nest sites themselves are limited. Other threats might include a decline in available food resources (winged ants) due to pesticide use, incursions of non-native ant species, and the spread of other exotics. (California Bird Species of Special Concern 2008)

The Project area does not contain suitable black swift breeding habitat. It is anticipated Project activities will not impact black swifts or their habitat.

Northern goshawk (*Accipiter gentilis*): northern goshawk is a CDFW Species of Special Concern. The northern goshawk has a Holarctic distribution and can be a year-round resident California. Northern Goshawks nest in mature and old-growth forest stands over much of their California range. Suitable stands occur in a broad range of conifer and conifer-hardwood types. Northern Goshawk populations exhibit high annual variation in reproduction, with 30%–90% of pairs breeding in any year. Variation in reproduction is associated with annual variation in weather and prey abundance. Goshawks forage in mature and old-growth forests that have relatively dense canopies, but also capture prey in a variety of vegetative cover, including meadow edges and open sagebrush. Foraging habitat use probably varies seasonally in response to prey availability. Threats to northern goshawks include – habitat loss and degradation are the primary known threats to northern goshawks (California Bird Species of Special Concern 2008).

The Project area has little, if any, old growth forests and Project activities will be limited in any mature forest (on PG&E lands designated for timber operations) for LWD collection. Although since goshawk habitat does occur within the Project area, mitigation measures **Bio-4** (listed under bald eagles) and **Bio-5** (below) will provide protection to northern goshawk and keep impacts below a level of significance.

Bio-5: To minimize and avoid significant impacts to birds and mammals utilizing conifer trees for nest or den sites, CalTrout and its contractors shall not harvest any conifer trees for the large woody debris (LWD) work with visible active nests or den sites. If an active nest or den site is located, the area shall be left undisturbed including a 100 foot buffer radius (for non-raptor species) from the active nest and/or den tree. If raptor nests are observed, an appropriate buffer shall be determined in consultation with the Department. Before the harvest of any tree for LWD work, a qualified wildlife biologist with avian and small mammal experience will survey potential harvest locations. If the survey reveals an active nest or den site, tree removal may not proceed within the pre-described buffer area, if no nest or den site is observed, tree removal may proceed.

Purple martin (*Progne subis*): purple martin is a CDFW Species of Special Concern. Purple martin is broadly distributed throughout much of eastern North America. In California purple martin is a summer resident and migrant, primarily from mid-March to late September. Breeding season is from late April/May to mid-August and this species is typically found from sea level to 5,900 feet (1,798 meters). Nesting areas typically contain concentrations of nesting cavities, relatively open air space above nest sited, and relatively abundant aerial insect prey. Nest sites can be found in a variety of substrates including - tree cavities, bridges, utility poles, lava tubes, and buildings. Urban threats to purple martin include – competition from European starlings (*Sturnus vulgaris*), collisions with trains, cars, and truck and predation by feral cats. Otherwise, martins in urban areas are not highly sensitive to human presence. No major threats are known for martins in other habitat types (California Bird Species of Special Concern 2008).

The Project contains a mix of hardwood and conifer species and other nesting requirements for purple martin. Mitigation measures **Bio-3** and **Bio-5** will provide protection to purple martin and keep impacts to below a level of significance.

Tricolored blackbird (*Agelaius tricolor*): tricolored blackbird is a CDFW Species of Special Concern. The tricolored blackbird distribution has been documented from Washington to Baja California, but the majority of the species permanent resides in California. During winter, the species tends to concentrate in lower lying areas such as the Sacramento-San Joaquin Delta and coastal areas. The tricolored blackbird is rare north of Sacramento during the winter. This species is closely associated with cattail (*Typha* spp.) during the breeding season. Breeding season extends from mid-March through early August. Other requirements for breeding sites include – open accessible water, protected nesting substrate, and a suitable foraging space providing adequate insect prey within a few kilometers of the nesting colony. Threats to tricolored black bird are the direct loss and degradation of habitat from human activities (loss of seasonal wetlands and grasslands and conversion of land to agriculture crops, pastures, and urban development) (California Bird Species of Special Concern 2008).

The Project does contain small stands of cattail and hard-stem rush species. The tricolored blackbird has not been noted during a 2012 season-long fish creel where other species of interest were documented. This species has been identified within the Project vicinity (9 quad search), but none in the Project area (Cassel Quad). The Project will not remove any existing stands of cattail and hard-stem rush species, and as identified in the planting plan, will be augmenting these species in suitable habitat areas. It is anticipated that Project impacts to tricolored blackbird are less than significant.

Mammal Resources: the special status mammal species discussed below are known from the vicinity (9-quad CNDDDB search) of the Project area.

Federal (ESA) and/or State (CESA) listed mammal species

California wolverine (*Gulo gulo*): California wolverine is a federal proposed Threatened and state Threatened species. The wolverine is mainly found in mixed conifer forests at elevations of 500-3,400 meters. The wolverine is an active year-round, largely nocturnal carnivore. The wolverine is an extremely rare mammal in California. In 2008 a wolverine was photographed in the Tahoe National Forest for the first time in California since the 1920's (scientifically documented). The last known occurrence of wolverine in the Project vicinity was in 1966 (CNDDDB), but this record is unconfirmed. The 1920's wolverine documentation is accepted as the last known occurrence of wolverine in California, until the Tahoe National Forest 2008 documentation. With the habitat types identified from the Project area and the more recent California distributional information, it is very unlikely the California wolverine will be impacted by Project activities.

Gray wolf (*Canis lupus*): the gray wolf is listed as a federally ESA Endangered and a CESA Candidate species. The gray wolf (OR7) in 2012 did transverse the lower section of Hat Creek. With the life history patterns and known distribution patterns of gray wolf in California, it is anticipated the Project will not have any significant impacts to gray wolf.

Pacific fisher (*Martes pennant (pacifica) DPS*): the Pacific fisher is a federal and state Candidate species under the Endangered Species Act and California Endangered Species Act, respectively. Pacific fisher is a specialized forest mammal that is associated with closed-canopy, late-succession conifer/hardwood forests throughout its range. The Hat Creek Project area contains mostly mid-elevation riparian and upland habitats, but does border mid to later successional Ponderosa pine forests. While the Project area does contain some habitat requirements of the Pacific fisher, it is unlike to be preferred habitat. Of the proposed Project activities, one component might have impacts to

Pacific fisher habitat. This component is the removal of larger conifer trees near the Project area to be used as the LWD restoration near the Carbon site.

Due to these potential impacts mitigation measure **Bio-5** shall be implemented. With mitigation measure **Bio-5** implemented, impacts to Pacific fisher are below a level of significance.

Sierra Nevada red fox (*Vulpes vulpes necator*): Sierra Nevada red fox is listed as Threatened under CESA. The current range and distribution of red fox in northern California is centered in the vicinity of Lassen Peak, with periodic sightings by inexperienced observers throughout its historic range. In the Lassen Peak area, red fox distribution changes seasonally with movement in the winter at lower elevations down to 4,700 feet. In the summer, the foxes used higher elevations usually over 6,000 feet. The Project elevation is approximately 2,275 above mean sea level. As noted previously, Sierra Nevada red fox range down to 4,700 feet during winter. Due to the difference in elevations, it is very unlikely the Project will impact to Sierra Nevada red fox.

Townsend's big-eared bat (*Corynorhinus townsendii*): Townsend's big-eared bat is a California Species of Special Concern and Candidate Threatened species under CEQA. Big-eared bat ranges throughout western North America from British Columbia to central Mexican highlands, with some isolated populations reaching into the Appalachia. Big-eared bats can be found in a variety of habitats including - desert scrub, chaparral, oak woodland, and conifer forests. Females aggregate in the spring at nursery sites and give birth to one young in late spring or early summer. Young bats are independent in late summer or early fall. If undisturbed, big-eared bats colonies will use the same roosts indefinitely. Although big-eared bats are generally viewed as a cave dwelling species, the two western subspecies are also found in human-made structures. Unlike other bats species that roost in crevices, Townsend's big-eared bats only roost in the open, hanging from walls and ceilings. Declines to big-eared bats include loss or damage of roosting habitats, human activity at roosts, and loss of foraging habitat.

The Project quad (Cassel) contained a 1949 observation of Townsend's big-eared bat. This location was upstream on the Pit River. The Project area does not contain any the geology for caves meeting the requirements of big-eared bats; no non-occupied human structures; and is heavily used by the public (human disturbance) during the fishing season/nursing season. The Project is unlikely to cause any significant impacts to Townsend's big-eared bats.

Sensitive mammal species

American badger (*Taxidea taxus*): American badger is a California Species of Special Concern. American badger is an uncommon, permanent resident found throughout California, except the North Coast area. Badgers are carnivorous typically taking fossorial rodents. The habitat for badgers is characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils. Badgers dig out burrows for cover and nesting areas. The breeding season is typically the summer to early fall periods. Badgers are somewhat tolerant of human activities (CDFG 1990).

American badger has been documented in the local vicinity (9-quad search) but not in the Project area (Cassel quad). The use of heavy equipment to excavate earth can impact badgers, but Project excavation is limited to the wetter soils located on the bank of Hat Creek (non-badger burrowing habitat). No Project impacts are anticipated for American badger.

Oregon snowshoe hare (*Lepus americanus klamathensis*): Oregon snowshoe hare is a California Species of Special Concern. The snowshoe hare is an uncommon resident of upper elevations of the Cascades and northern Sierra mountains typically found in montane riparian habitats with thickets of alders and willows. Rarely found in open

spaces or mature closed-canopy forests. Snow-shoe hares breed from mid-February to June or July with two to three litters per year. Bobcats are the main predators of snowshoe hares in Oregon; followed by minks, weasels, foxes, coyote, great horned owls and domestic dogs and cats. Major threats include – habitat loss and fragmentation and possibly climate change.

Oregon snowshoe hares has been documented in the vicinity (9-quad search), but not at the Project area (Cassel quad). The elevation and open nature of the riparian zone within the Project area are not preferred habitats for snowshoe hares. It is anticipated the Project activities will not impact Oregon snowshoe hare.

b) The Project will not have a substantial adverse long-term effect on any wetlands, riparian areas, or riverine habitats. The Project will decommission and create new user trails and supplement local plant communities with local native plantings in these zones. Although there will be temporary and limited impacts during LWD and foot bridge installation, these impacts will be minor and/or create habitat for aquatic organisms; reduce user impacts to the stream banks; and help alleviate or reverse Hat Creek stream bank erosion. Impacts are anticipated to be less than significant.

c) Some of the Project activities will be in marsh/wetland environments; these activities will include restoring/enhancing native plants (including native wetland plants). All planting and invasive control methods proposed are low impact. All heavy equipment use near the stream bank or any wetland environment will be limited to previously disturbed areas (old Carbon Bridge site). In addition Mitigation Measure **Bio-1** (to avoid impacts to sensitive plant species) will be implemented. Overall, impacts to wetland environments are anticipated to be less than significant.

d) The Project will result in short term disturbances in the Project area, and will not affect the movement of any native resident or migratory fish or wildlife or movement of wildlife through corridors, or nursery sites. Impacts are anticipated to be less than significant.

e) The Project does not conflict with the Shasta County Oak Woodland Habitat Plans and there are no adopted HCP's, NCCP's or other approved local, regional, or state habitat conservation plans for the Project Area.

Impact: The Project could result in significant impacts to Biological Resources, but with implementation of Mitigation Measures Bio-1 through Bio-5, these effects will be below a level of significance.

ENVIRONMENTAL ISSUES

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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V. Cultural Resources. Will the Project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion: The Project area is part of the old town of Carbon and ancestral lands of the Illmawi and Atsuge bands of the Pit River Indian Tribe and is within the Lake Britton Archaeological and Pit River Aboriginal and Cultural Districts. The proposed Project has identified artifacts from an old town of Carbon homestead. These artifacts are outside the Project footprint and will not be disturbed. The proposed Project area has had cultural resources inventories dating back to the 1950's. During the fall of 2013, cultural representatives from the Pit River Tribe Cultural Heritage Department conducted an inventory of sensitive cultural resources of within the proposed Project area. The Illmawi and Atsuge bands are the only recognized Native Americans with cultural concerns in the proposed Project area. The proposed Project has the potential to affect significant qualities of the important cultural resources in the area. With input from the Illmawi and Atsuge bands, the Project was redesigned to meet the concerns of the bands and avoid old town of Carbon artifacts.

a, b, c, and d) Although the Project has been designed to avoid known cultural resources, unknown resources could be discovered during Project implementation. Therefore, the Project has the potential to significantly affect Cultural Resources of the area. These resources - historical, archaeological (as defined in Section 15064.5), paleontological resources, and any disturbance to human remains will be less than significant with Cultural mitigation measure **Cul-1** implemented:

Cul-1: To reduce potential cultural and historical resource impacts below a level of significance, CalTrout shall ensure that the project will be monitored, during all phases of construction, by the Illmawi and Atsuge bands. There shall be continued monitoring as the project is implemented. This will assure that activities remain compatible with the sensitivity of the traditional cultural property and adjustments can be made to protective measures. In addition, protective and interpretive signs shall be installed near trailheads, kiosks, and locations where cultural sensitive areas have been identified. The signs will serve to inform the public of the cultural and historical past of the area and help to minimize disturbance to culturally sensitive areas within the Project area. The bands will be involved with the selection of text, placement of signs, and educational materials associated with the project. Overall, the sum of the activities proposed is likely to result in more protection, less degradation, and restoration of traditional cultural resources. If any changes or modification occur to the Project (as previously agreed upon between the Illmawi and Atsuge bands and project proponent) that will potentially adversely affect culturally sensitive areas, the project proponent and its contractors will immediately stop work and discuss/resolve these changes with Illmawi and Atsuge

representatives before any potentially adverse work can continue. In addition to monitoring all phases of construction, specific Project activities to be monitored include:

- All trail work leading down to the new proposed pedestrian footbridge shall be monitored by appropriate cultural monitors. This monitoring shall be patrolled several times a week during the first month of the first two fishing seasons. This time frame coincides with the highest angler use and subsequent foot traffic in the Hat Creek WTA. The frequency of monitoring after that will be negotiated with the bands. If issues created by the presence of the footbridge are encountered, the bands will enter into further consultations with the bands to determine how to best adaptively manage the resource. The bridge will be closed during these negotiations.

Impact: Project impacts to Cultural Resources are less than significant with mitigation incorporated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Geology and Soils. Would the Project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that will become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion: All Project work will be completed in and around the Hat Creek channel. These areas include instream, marsh, riparian, and upland habitats. Surface soils will be disturbed during the trail maintenance, trail construction, parking lot construction, preparation and installation of native plants, and instream work involving the use of heavy equipment (LWD and bridge work). Some soil types, such as the diatomaceous earth, within the Project footprint may pose additional problems for securing and controlling erosion. To minimize soil erosion and impacts, trail construction will follow standardized Department of Transportation Federal Highway Administration Trail Construction and Maintenance Guidelines and United States Access Board Guidelines and Standards. Trail construction will also follow five principles of sustainable trail design outlined by the International Mountain Bicycling Association (IMBA Trail Solutions, 2004). The new parking area will reduce bank erosion as it is relocated away from the riparian corridor. The parking area surface and trail construction will utilize crush granite or other appropriate fill material to reduce dust, erosion, rutting, and other environmental impacts. Native plant restoration (key placement and used to help decommissioning trails) will further reduce the deterioration and erosion of stream banks.

a, d, and e) No impacts.

b and c) Project activities related to disrupting the surface soils (trail, road, parking lot bridge, and plantings) will implement BMPs and standard protocols (listed above) to minimize soil erosion (during operations with long-term reductions). Overall, Project activities are designed to minimize and reduce existing erosion problems in the Project area.

Impact: overall Project impacts related to Geology and Soils are less than significant impact.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. Greenhouse Gas Emissions. Would the Project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion: The U.S. Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for common pollutants. These ambient air quality standards represent safe levels of contaminants that avoid specific adverse health effects associated with each pollutant. Project activities are not anticipated to exceed standard zoning activities of the area.

a) The proposed Project would generate greenhouse gas (GHG) emissions through from the exhaust of vehicles and heavy equipment used to transport crews, equipment, and materials and installation/construction footbridge work and LWD. The exhaust gases are not expected to violate the applicable standard in the area.

b) No impacts.

Impact: Overall Project impacts related to Greenhouse Gas Emissions are below a level of significance.

ENVIRONMENTAL ISSUES

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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VIII. Hazards and Hazardous Materials. Would the Project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, will it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, Would the Project result in a safety hazard for people residing or working in the Project Area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a Project within the vicinity of a private airstrip, Would the Project result in a safety hazard for people residing or working in the Project Area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion: The Project proposes no use, transport, or disposal of hazardous materials.

a-g) No impacts.

h) The Project’s proposed construction period will occur throughout the summer/fall periods. These periods typically represent the driest times of the year in California. The use of internal combustion engines, including construction equipment and chainsaws, may pose a threat to starting wildfires. All vehicles and construction equipment will be maintained to be in good working order and Best Management Practices will be implemented to minimize the chance of fire.

Impact: *Overall Project impacts related to Hazards and Hazardous Materials are below a level of significance.*

ENVIRONMENTAL ISSUES

Potentially Significant Impact **Less Than Significant with Mitigation Incorporated** **Less Than Significant Impact** **No Impact**

IX. Hydrology and Water Quality. Would the Project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there will be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells will drop to a level that will not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which will result in substantial on- or off-site erosion or siltation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Result in inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion: The Project proposes to install LWD for fish habitat and to modify stream flow to alleviate streambank erosion, increase channel depth, and reduce channel widening. In addition a single-span foot bridge is proposed to allow more public access to the western side of the creek. These Project activities are designed to provide instream habitat, restore channel morphology, and reduce foot traffic along the creek margins by directing public use to a maintained trail system.

a, b, e, f, g, i, and j) No impacts.

c, d, and h) The project activity to install LWD is designed to modify channel flow to help restore natural channel function. While impacts to water quality and flow will be short term and minimized with **Bio- 2**, the long term effects

of the instream activities will benefit the wildlife and fish habitat and help restore natural channel morphology. Impacts to these activities will be less than significant.

Impact: Overall project impacts related to Hydrology and Water Quality are below a level of significance...

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. Land Use and Planning. Would the Project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion: The Project Area is located in a portion of Shasta County where the designated land use is “unclassified” district (U). The “U” district is intended to be applied as a holding district until a precise principal zone district has been adopted for the property. Therefor the Project will not divide an established community. There are no habitat conservation plans or natural community conservation plans associated with the Project area.

a-c) No impacts.

Impact: No adverse impacts to Land Use and Planning are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. Mineral Resources. Would the Project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion: Project work does not entail the extraction of mineral resources. As a result, this Project will not result in the loss of mineral resources or the availability of a locally important mineral resource recovery site.

a-b) No Impacts.

Impact: *No adverse impacts to Mineral Resources are anticipated.*

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. Noise. Would the Project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, will the Project expose people residing or working in the Project Area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a Project within the vicinity of a private airstrip, will the Project expose people residing or working in the Project Area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion: The Project area is located in a rural area of Shasta County. Noise generated by the project will be limited to noise created by the use of heavy equipment during parking area/lot creation, road grading/road base installation, footbridge installation, LWD placement, and small handheld power tools. Once Project component work has been completed, noise levels will return to ambient levels.

a, b, and d) The Project will use heavy equipment (including a helicopter) to install the LWD and foot bridge. The duration of the noise created by heavy equipment will be limited (short-term) in duration to the time it takes to complete the individual components of the project. All Project components will be completed during daylight hours. Noise levels or ground borne disturbances are not anticipated to exceed any applicable local, state, or federal noise level standards. Noise generated and exposure of noise generated from Project activities is anticipated to be less than significant.

c, e, and f) No impacts.

Impact: Overall Project impacts related to Noise will be below a level of significance.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. Population and Housing. Would the Project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion: The Project Area is within rural portions of Shasta County which have been zoned “unclassified.” Project work will occur within or immediately adjacent to the Hat Creek stream channel and will not impact development or population growth with the vicinity of the Project Area.

a-c) No impacts.

Impact: No impacts to Population and Housing are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. Public Services. Would the Project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Other public facilities?

Discussion: The Project is located in a rural area of Shasta County in a County designated “undeveloped” area. The only public service within the Project area is the Hat Creek County Park. The Park boundary marks the northern extent of the Project and will only be temporally impacted when an access trail is completed to join the County Park to the Project trail system.

a) The Project will temporally impact the existing County Park when connecting the trail system to the County Park. The work associated with the "joining" of the park to the trail system will be constructed with limited crews using hand tools. There will be no physical impacts or alterations to governmental facilities or impacts to fire, police, schools, or other public facilities.

Impact: Overall Project impacts related to Public Services will be below a level of significance.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. Recreation. Would the Project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion: The Project is designed to expand and create new recreational opportunities for the public while protecting and enhancing natural resources. Increased physical deterioration of the adjoining Hat Creek County Park facility may occur, but these impacts are expected to be less than significant as the new and enhanced use areas will be located away from the County Park and accessed through other designated roads/parking areas.

a and b) The Project is expected to construct and expand recreational facilities. The construction and expansion activities are minor in posing adverse physical effects to the environment. Most construction and expansion activities associated with the Project will utilize existing road, trails, and other high used areas. Trails, roads, and parking areas will be improved upon by minimizing erosion through sloping, drainage, native plantings, compacted/road base materials, and/or relocation away from the streambank. Some trails will be decommissioned and monitored to protect sensitive cultural areas (as described in mitigation measure CUL-1). Other Project activities, such as the footbridge and LWD insulation, will impact the physical environment, but these impacts are expected to be minor and temporary.

Impact: Project impacts related to Recreation are expected to be less than significant.

ENVIRONMENTAL ISSUES

Potentially Significant Impact Less Than Significant with Mitigation Incorporated Less Than Significant Impact No Impact

XVI. Transportation/Traffic. Would the Project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion: All Project work will occur in rural Shasta County and off public roads/highways. Although SR 299 does transect the northern end of the Project area, no work will occur on the Highway. The Project does propose a pedestrian foot trail be installed between the Shasta County Park access road and SR299. This pedestrian foot trail will be conducted with hand tools and is not expected to affect Highway transport or traffic.

a-f) No impacts.

Impact: *No impacts related to Transportation or Traffic are anticipated.*

ENVIRONMENTAL ISSUES

Potentially Significant Impact Less Than Significant with Mitigation Incorporated Less Than Significant Impact No Impact

XVII. Utilities and Service Systems. Would the Project:

a) Exceed wastewater treatment requirements of the applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Regional Water Quality Control Board?

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Result in a determination by the wastewater treatment provider that serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand, in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion: The Project will not create a wastewater discharge, require or result in the construction of new water or wastewater treatment facilities, or require or result in the construction of new storm water drainage facilities.

a-c and e-g) No impacts.

d) Riparian and upland native plant restoration will require the use of water from Hat Creek during dry periods of the year for up to 3-years to increase success rates until plants become established on their own. The water use is limited and temporary and not expected to impact other water rights/uses.

Impact: *Overall Project impacts to Public Utility and Service Systems are less than significant.*

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XVIII. Mandatory Findings of Significance.

- | | | | | |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a) Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|

eliminate important examples of the major periods of California history or prehistory?

- b) Does the Project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects.)
- c) Does the Project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

Discussion:

- a. *Would the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?*

A California Natural Diversity Database (CNDDDB) search was conducted in February 2014 for listed, rare, and sensitive species and their habitats within the project area and surrounding area (USGS 24K quad search). In addition, consultation with CDFW plant, fish, and wildlife experts also provided additional information on current species and habitat status for the Project and surrounding areas. There are two CESA listed species known to occur within the Project area. These species include:

- rough sculpin (State Threatened, state Fully Protected) and
- bald eagle (State Endangered, state Fully Protected).

To avoid impacts to sensitive plant species, rough sculpin, bald eagle, sensitive limited motility or sessile aquatic organisms/fauna, and bird nests and mammal den sites, mitigation measures Bio-1, Bio-2, Bio-3, Bio-4, and Bio-5 (listed under section IV Biological Resources) shall be implemented. Other listed, candidate, and state Rare species (ESA, CESA, and Rare) known to occur in the vicinity, but are unlikely to occur in the project area due to unavailable or unfavorable habitat or believed to be extirpated from the area; or Project activities and life history strategies minimize impacts to less than significant and include the following:

Invertebrate

- Shasta crayfish, *Pacifastacus fortis*, (state Endangered, federally Endangered)

Birds

- bank swallow, *Riparia riparia* (state Threatened),
- greater sandhill crane, *Grus Canadensis tabida* (state Threatened),
- willow flycatcher, *Empidonax traillii* (state Endangered),

Mammals

- California wolverine, *Gulo gulo* (federal proposed Threatened, state Threatened),
- gray wolf, *Canis lupus* (state Candidate),
- Pacific fisher, *Martes pennant* (federal Candidate, state Candidate), and
- Sierra Nevada red fox, *Vulpes vulpes necator* (state Threatened),

In addition to the federal and state listed, candidate, or rare species there are other sensitive or concern species known to occur in the vicinity. Some species are unlikely to occur in the Project area due to unavailable or unfavorable habitat. Other species may sporadically be found in the Project area, but the Project activities will not significantly affect these species and/or the previous mitigation measures (Bio-1, Bio-2, Bio-3, and Bio-5) will provide sufficient protection for these species. These species include:

Plant (vascular/non-vascular)

- Bellinger's meadowfoam, *Limnanthes floccose* spp. *bellingiana* (1B.2)
- Broad-nerved hump moss, *Meesia uliginosa* (2B.2)
- Castlegar hawthorn, *Crataegus castlegarensis* (3)
- Eel-grass pondweed, *Potamogeton zosteriformis* (2B.2)
- English Peak greenbrier, *Smilax jamesii* (1B.3)
- Lemmon's milk-vetch, *Astragalus lemmonii* (1B.2)
- Long-haired star-tulip, *Calochortus longebarbatus* var. *longebarbatus* (1B.2)
- Long-stiped campion, *Silene occidentalis* ssp. *longistipitata* (1B.2)
- Marsh skullcap, *Scutellaria galericulata* (2B.2)
- Modoc County knotweed, *Polygonum polygaloides* spp. *esotericum* (1B.1)
- Red Bluff dwarf rush, *Juncus leiospermus* var. *leiospermus* (1B.1).
- Santa Lucia dwarf rush, *Juncus luciensis* (1B.2)
- Slender-leaved pondweed, *Stuckenia filiformis* ssp. *alpina* (2B.2)
- Tufted loosestrife, *Lysimachia thyriflora* (2B.3) Watershield, *Brasenia schreberi* (2B.3)
- Water star-grass, *Heteranthera dubia* (2B.2)

Invertebrate

- fingernail clam, *Pisidium ultramontanum* (Sensitive)
- Great Basin rams-horn, *Helisoma newberryi* (Sensitive),
- nugget pebblesnail, *Fluminicola seminalis* (Sensitive),
- scalloped juga, *Juga occata* (Sensitive),
- Shasta hesperian, *Vespericola shasta* (Sensitive)
- topaz juga, *Juga acutifilosa* (Sensitive),

Fish

- bigeye marbled sculpin, *Cottus klamathensis macrops* (Species of Special Concern),
- hardhead, *Mylopharodon concephalus* (Sensitive and Species of Special concern)
- Pit roach, *Lavina symmetricus mitrulus* (Species of Special Concern),

Amphibian/Reptile

- Cascades frog, *Rana cascadae* (Sensitive, Special of Special Concern),
- Western pond turtle, *Emys marmorata* (Sensitive and Species of Special Concern),

Bird

- Black swift, *Cypseloides niger* (Conservation Concern, Special of Special Concern)
- great blue heron, *Ardea herodias* (Sensitive Species),
- Northern goshawk, *Accipiter gentilis* (Sensitive, Species of Special Concern)
- osprey, *Pandion haliaetus*, (Sensitive),
- purple martin, *Progne subis*, (Species of Special Concern)
- tricolored blackbird, *Agelaius tricolor* (Sensitive, Species of Special Concern)

Mammal

- American badger, *Taxidea taxus* (Species of Special Concern)
- Oregon snowshoe hare, *Lepus americanus klamathensis* (Species of Special Concern)
- Townsend's big-eared bat, *Corynorhinus townsendii* (Species of Special Concern),

The Project, as described with the mitigation measures implemented, is unlikely to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory.

b. Would the Project have impacts that are individually limited, but cumulatively considerable?

The Project is designed to increase public use of the area while restoring, enhancing, and protecting the natural habitats and ecosystems of the Hat Creek Wild Trout Area. The Project is limited in duration (three years) and is not creating any new long-term impacts to the environment or building upon past impacts.

c. Would the Project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

The Project is designed to increase public use and understanding of the area. The project poses no substantial adverse effects on human beings, either directly or indirectly.

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