

CEQA STATUTORY EXEMPTION FOR RESTORATION PROJECTS (SERP) CONCURRENCE REQUEST

Completion and submission of this form is voluntary. This form may be submitted to request concurrence from the Director of Fish and Wildlife pursuant to Public Resources Code section 21080.56.

Submit this form (pdf) and all attachments via the Department's <u>Environmental Permit Information</u> <u>Management System (EPIMS) Document Repository</u>.

1. LEAD AGENCY

Lead Agency Name:	Central Valley Regional Water Quality Control Board (Region 5)
Contact Person Name	Matt Scroggins
Street Address:	1685 "E" Street
City, State, Zip:	Fresno, California 93706
Contact Person's Telephone:	559-445-6042
Contact Person's E-mail:	Matt.Scroggins@waterboards.ca.gov

2. PROJECT PROPONENT

□ Check Box and Skip to Number 3 if Same as Lead Agency

Business/Agency/Organization	Yosemite National Park
Contact Person's Name:	Kirstie Dunbar-Kari
Street Address:	PO Box 700
City, State, Zip:	El Portal, California 95318
Contact Person's Telephone:	209-379-1175
Contact Person's E-mail:	kirstie_dunbar-kari@nps.gov

3. PROJECT INFORMATION

A. Project Name:	Merced River Plan Implementation: Sugar Pine Bridge Floodplain and Riverbank Restoration
B. Estimated Project Start/End Dates:	July 2022- November 2022; Erosion wattles to remain through summer 2023

C. Provide a brief description of project location, size, and funding sources. Please cite supporting documents and provide as an attachment.

The location of the project is Latitude 37.743538 and Longitude -119.571266 in eastern Yosemite Valley (Attachment A-Figure 1). This project will restore 17.31 acres the former Lower Pines Campground to natural conditions and conduct riverbank restoration as called for in the Merced Wild and Scenic River Management Plan (MRP), which can be viewed at https://www.nps.gov/yose/getinvolved/mrp_documents.htm. The former Lower Pines Campground, built on a floodplain, was destroyed in the 1997, 100-year flood. This project aims to restore the floodplain to its original condition by excavating fill from overflow channels and reactivating the floodplain. The existing portion of the Lower Pines Campground, to the south of the project area, remains open to the public and construction fencing will be utilized to keep the public out of the restoration area for the duration of construction (Attachment A- Figure 2). The MRP directed the Park Service to engage in a more



detailed study on the effects of the historic Sugar Pine Bridge on the Merced River, which is adjacent to the former Lower Pines Campground, and other historic impacts in this river reach. The bridge is undersized and misaligned with the river, and this study led by University of California Santa Barbara, examined alternatives of removing the bridge or keeping it intact with mitigations, such as reactivation of the floodplain and riverbank restoration. The recommended alternative, that the Park Service also preferred, was to leave the bridge in place and conduct other restoration actions to reduce flows under the bridge and restore degraded floodplain, riverbanks, and wetlands in this area. See the 2020 Basis of Design report for more detail, Basis of Design Report (nps.gov). The Sugar Pine Bridge Floodplain and Riverbank Restoration project will implement two of the actions in the preferred alternative. This project will excavate imported fill from historic overflow channels on the floodplain and decompact soils of the former roadbed and campsite footprints. Channel topography will be restored using the 1919 USGS maps as a guide. Conifers within the channels will be removed to make restoration feasible and to restore dominance of riparian deciduous species. An engineered log structure will be installed upstream of the Sugar Pine Bridge to direct water toward the excavated overflow channels during high water events and mitigate the effects of Sugar Pine Bridge by reducing the volume of water flowing through the bridge. Native plant species such as willow, cottonwood, and sedges will be planted to increase habitat quality, biodiversity, and water quality. This project is paid for by the National Park Service (NPS), Recreation Fee program and all construction, revegetation and monitoring will be completed by NPS staff. See Attachment D, workplan and schedule.

D. Provide a project summary and expected environmental benefits (i.e., acres or stream-miles restored/enhanced, species benefitted, etc.). Please cite supporting documents and provide as an attachment.

Project Summary: The purpose of the action is to restore and reactivate 17.31 acres of floodplain within the former Lower Pines Campground and mitigate the effects of Sugar Pine Bridge on the Merced River. The river in the vicinity of Sugar Pine Bridge is over-widened, locally confined within its banks by riprap, and largely disconnected from its once-active floodplain (Basis of Design Report, 2020). Sugar Pine Bridge, while historic, is undersized for the Merced River and misaligned with thalweg of river. The former Lower Pines Campground construction filled overflow channels that once flowed across this floodplain and heavy visitor use contributed to riverbank erosion. These channels played an important role during flood events, alleviating flows through Sugar Pine Bridge and mitigating the hydrologic impacts of the bridge. The floodplain also served as unique habitat on the landscape. Following campground construction, conifers grew to dominate the historically riparian over-story. There is no recorded fire history at this site after the cessation of frequent indigenous burning in the late 1850s and conifer stands are dense. Only 2.81 acres of the 17.31 acre project area currently qualify as waters of the U.S. The goal is to restore as much wetland habitat as possible within the 14.50 acres that do not currently qualify. This project is exclusively a restoration project, there is no associated development of structures or facilities.

Project Description: The proposed action will remove imported fill, remnants of asphalt, and select conifers from the floodplain to reactivate overflow channels. Park Service crews will stabilize exposed soils by planting native plant plugs, willow and cottonwood stakes, and will sow native seed and duff. Soils within the former campground will be decompacted and any remnant asphalt will be removed. Conifers within the channels will be removed to make excavation of fill feasible and to restore dominance of riparian deciduous species. An engineered log structure will be installed upstream of the Sugar Pine Bridge to direct water toward the excavated overflow channels during high water events and mitigate the effects of a historic undersized stone bridge by reducing the volume of water flowing through bridge. The engineered log structure will also provide habitat for aquatic species such as rainbow trout, California red-legged frogs and invertebrates who suffered under a park policy from 1880-1993 where all large wood was removed from the river (Merced River Restoration - Projects - <u>Yosemite National Park (U.S. National Park Service) (nps.gov</u>)). Figure 2 of Attachment A, displays the area of impact to aquatic resources as well as other project activities mentioned in this section.



Environmental Benefits: Riparian habitat provides refuge from hot summer temperatures, migration corridors, nesting locations, and feeding opportunities for wildlife. These qualities give riparian habitats exceptionally high value for many wildlife species (Thomas 1979, Marcot 1979, Sands 1977). The re-establishment of historical riparian and floodplain habitat will utilize native plant species such as willow, cottonwood, and sedges that will be planted to increase habitat quality, biodiversity, and water quality. The re-establishment of these habitats may impact several aquatic and terrestrial species such as California red-legged frog, Pacific chorus frogs, Sierra garter snake, aquatic invertebrates, bats, and birds such as that are known to rely on similar habitat within Yosemite Valley (Espinoza et al. 2011).

The area is potential critical habitat for the federally-threatened California red-legged frog (CRLF) and care has been taken to include specifications in the channel excavation design that will create breeding habitat. The project team will follow mitigations as directed by the United States Fish and Wildlife Service Biological Opinion (2018) and Park Service Aquatic Ecologist to protect CRLF including completing the work during the dry season and conducting surveys prior to initiation of work. The result of this work is self-mitigating as it restores wetland habitat adjacent to known populations of CRLF, thus expanding critical habitat for this threatened species. The Park Service will continue to monitor and manage the site beyond completion of the project.

E. CDFW recommends that lead agencies meet and confer with tribes, representatives of any affected local agencies, and other stakeholders prior to submitting a SERP request to CDFW. Please provide a summary of project consultation with tribes, agencies, and other stakeholders and submit documentation as an attachment.

This project was reviewed by all seven Yosemite National Park affiliated tribes in January 2022 for review and feedback. These tribes are: Southern Sierra Miwuk Nation, Tuolumne Band of Me-wuk Indians, Picayune Rancheria of Chukchansi Indians, Bridgeport Indian Colony, Mono Lake Kutzadikaa, North Fork Rancheria of Mono Indians of California, and Bishop Piute Tribe. Based on the consultation with the tribes, the Park Service's tribal liaison recommended the following measures be incorporated into project work:

- Tribal monitoring is required for ground disturbing work.
- Project managers will arrange with park archeologists to hold a pre-construction educational talk with workers to familiarize them with the cultural sensitivity of the work area.
- Heavy equipment access routes will be designed to avoid archeological site boundaries.

The Park Service initiated a pre-filing meeting with the Regional Water Quality Board (RWQCB) on April 17, 2022 and received input on the project in preparation for submitting a Clean Water Act Section 401 Water Quality Certification request. In conjunction with this effort, a consultation was held on May 23, 2022 with the RWQCB, Park Service, and California Department of Fish and Wildlife (CDFW) to initiate the CEQA exemption concurrence application process.

4. REQUIRED DETERMINATIONS

Provide a full description for each determination below:

A. The project is exclusively one or both of the following: (1) a project to conserve, restore, protect, or enhance, and assist in the recovery of California native fish and wildlife, and the habitat upon which they depend, or (2) a project to restore or provide habitat for California native fish and wildlife. Please cite supporting documents and provide as an attachment.



The Central Valley Regional Water Quality Control Board (Region 5) has determined the project is exclusively a project to conserve, restore, protect, or enhance, and assist in the recovery of California native fish and wildlife, and the habitat upon which they depend and a project to restore or provide habitat for California native fish and wildlife. This project is exclusively a project to restore the wetlands in the Sugar Pine Bridge floodplain and Merced River riverbank. A benefit of this project is that it will also yield a net increase in critical habitat available for the threatened California red-legged frog (CRLF), a species for which Yosemite National Park is actively managing, and the western pond turtle, a California species of concern. The CRLF was extirpated from the Park in the past and was reintroduced in 2017. Restoration of degraded or filled wetlands to expand potential habitat is a top priority for the Park Resources Management and Science staff. The 2018 biological opinion for CRLF signed by the US Fish and Wildlife Service is included with this concurrence request as Attachment B.

B. An eligible project may have incidental public benefits, such as public access and recreation. Please cite supporting documents and provide as an attachment.

The Central Valley Regional Water Quality Control Board (Region 5) has determined the project may have incidental public benefits. Although no new recreational facilities will be constructed, revegetated riverbanks, healthy biodiverse wetlands, and the opening of the hardwood riparian canopy to sunlight and birds will enhance recreational opportunities. The restored wetland and riverbank areas will provide opportunities for visitors to participate in activities like birdwatching, photography, hiking, and fishing. The opening of this area's dense conifer canopy will allow visitors to view the iconic geologic features from all sides of the project area.

C. The project does both of the following: (1) results in long-term net benefits to climate resiliency, biodiversity, and sensitive species recovery; and (2) Includes procedures and ongoing management for the protection of the environment. Please cite supporting documents and provide as an attachment.

Overview

The Central Valley Regional Water Quality Control Board (Region 5) has determined the project does both of the following: (1) results in long-term net benefits to climate resiliency, biodiversity, and sensitive species recovery; and (2) Includes procedures and ongoing management for the protection of the environment.

This project will result in net benefits to climate resiliency by restoring crucial wetland habitat that can store water and sequester carbon. At the interface of aquatic and terrestrial habitats, wetlands are biodiversity hot spots, supporting a myriad of organisms and biodiversity and provide crucial ecosystem services. By removing fill and constructing an engineered log structure, this project will allow the river to reconnect to this floodplain area, supporting critical habitat for sensitive and threatened species which will sustain the biodiversity present in Yosemite Valley.

For the overall protection of the environment and the resources of Yosemite National Park, the actions in this project will be completed following the mitigations listed in the Procedures and Ongoing Management for the Protection of the Environment Section below. The attached Categorical Exclusion, Attachment C, includes signoffs by Park Service subject matter experts who reviewed this project and developed environmentally safe means of restoring the Sugar Pine Bridge floodplain with no adverse effects to resources.

Long Term Net Benefits to Climate Resiliency:



This project will result in net benefits to climate resiliency by restoring crucial wetland habitat. Wetland restoration has been identified as key aspect in mitigating climate change (CSU Chico Planning and Geographic Information Center 2003), specifically by reducing emissions and sequestering carbon (Climate Change 2022, IPCC; Drexler et al. 2015). Although riparian habitats are disproportionately important for flora, fauna, and water retention and filtration, riparian habitat has declined by 90% from historic times, resulting in significant conservation and management concerns (Hatten et al. 2010).

Specific to Yosemite Valley, 64 percent of meadows have also been lost since 1866 due to human activity, a subset of that area being wetlands (Ballenger et al. 2011, Park Service report). The Merced Wild and Scenic River Management Plan (2014) directs the Park Service to restore degraded wetlands, meadows, and riverbanks to the furthest extent possible. We know that water is essential for life and wet places such as wetlands and riverbanks can provide refuge for many species in a future that is projected to be hotter and drier (Cayan et al. 2008; Franco et al. 2011). We also expect reduced mountain snowpack in the future and wetlands have the potential to serve as water storage alternatives (Norton et al. 2011). Restoration of the Sugar Pine floodplain and riverbank will be pivotal in creating wetland resiliency in the face of climate change in Yosemite Valley.

Long Term Net Benefits to Biodiversity:

Meadows and wetlands occupy less than 3% of the landscape in the Sierra Nevada, but their cultural and ecological value far exceeds their spatial extent (Ratliff 1985). In Yosemite Valley, 64 percent of meadows have been lost since 1866 due to human activity, a subset of that area being wetlands (Ballenger et al. 2011, Park Service report). Human activities have largely caused conversion of meadow and wetland to forested upland in Yosemite Valley (MRP 2014). These activities include cessation of indigenous burning (Gibbens and Heady 1964), ditching, draining, tilling, and grazing of meadows and wetlands (Madej et al. 1994; Milestone 1978; Cooper et al. 2008), development, and hydrologic alterations such as systematic removal of large wood, undersized bridges, gravel mining, riprap installation, and the destruction of a terminal moraine (Milestone 1978; Cardno-ENTRIX 2012).

Intact and healthy wetlands and riparian areas are biodiversity hot spots, with many birds, amphibians, reptiles, invertebrates, fish, and mammals relying on them for all or some of their life cycle (Pierson 1997; Dickerson 2001). A 2011 National Park Service study documented 41 species of birds in the Merced River corridor, including five riparian focal species and one California species of special concern, yellow warbler (Espinoza et al. 2011). The most frequently utilized bat foraging habitat in Yosemite Valley is within the riparian zone of the Merced River (Pierson 1997). Loss of wetland and riparian habitat is also a major concern of Park affiliated tribes, due to many culturally-significant species found only in meadows and wetlands, such as tule, willow, and sedges (Deur, 2007).

The project area has no recorded fire history and features a dense conifer canopy with significant accumulation of branches and duff in the understory, limiting other understory plant species abundance. Coupled with fill placed in this area associated with the former campground, the floodplain is artificially high and dry and no longer functions properly as a floodplain (Basis of Design 2020). In this project, select conifers will be removed from within the channels to be excavated to make excavation feasible and to restore their topography, to open the dense canopy and allow light to reach the floodplain, and to alleviate demands on water and nutrients for wetland deciduous trees and understory species we will plant such as sedges, grasses, cottonwoods, and willows. The Park Service expects to see an overall increase in plant diversity at the site due to increased availability of water, sunlight, nutrients, and microhabitats.

Wetlands are relatively rare on the landscape and the benefit of this wetland and riverbank restoration project is to provide more habitat to all species who rely on wetlands and riparian habitat for a portion of their life cycle.



Specific to this project, the Park Service expects to see long term benefits to California red-legged frogs, western pond turtle, riparian hardwood nesting bird species, and rainbow trout, among others.

Long Term Net Benefits to Sensitive Species Recovery:

This project will restore 17.31 acres of potential critical habitat for the federally threatened California red-legged frog (CRLF) and a California species of special concern, the western pond turtle (WPT). In 2018, the US Fish and Wildlife Service issued a Biological Opinion to the Park, which specifically identifies conservation measures associated with the implementation of MRP restoration actions. For the Sugar Pine Bridge Floodplain and Riverbank restoration project, Park Service staff will adhere to all conservation measures in the Biological Opinion and any additional requests by the Park's aquatic ecologist. Park Service's aquatic ecologist provided input for the design specifications of the overflow channels' restoration to ensure optimal habitat features for CRLF breeding success (Rob Grasso, personal communication, May 9, 2022).

Yosemite National Park was once home to the CRLF and WPT. Both species had disappeared from Yosemite Valley due in part to management actions that altered habitat suitability by impairing riparian function (e.g., aggressive removal of large woody debris; installation of 14,000 linear feet of riprap) along the Merced River, artificially high populations of raccoons fed by previously abundant refuse, and the deliberate introduction of the invasive American bullfrog. The two species, however, could be found in small strongholds elsewhere both inside (WPT) and outside (CRLF and WPT) of the Park.

Factors leading to the disappearance of these species have been corrected, including eradication of American bullfrog from Yosemite Valley (Kamoroff et al. 2020). This project to restore the 17.31 acres of floodplain habitat and overflow channels near Sugar Pine Bridge will add to their critical habitat. However, these animals have not recolonized Yosemite Valley on their own. A collaborative project between the San Francisco Zoo and Yosemite National Park has reintroduced CRLF and WPT to Yosemite Valley. These colonies have become largely self-sustaining breeding populations in Yosemite Valley and in spring 2022 disbursed to a small backwater channel adjacent to this project's restoration area (Rob Grasso, personal communication, May 9, 2020).

While the Park Service does not plan to actively reintroduce other special status species identified in the Merced River Plan, the newly restored floodplain and riverbank habitat has the potential to benefit several of those that rely on these types of habitat for their life cycle, such as harlequin duck, bald eagle, peregrine falcon, long eared owl, great gray owl, California spotted owl, black swift, willow flycatcher, yellow warbler, pallid bat, spotted bat, western red bat, and Pacific fisher (MRP Vol. 2A, Chapter 9, Special Status Species).

There are no state rare plant species present within the project area, however a species of special concern to the Park's affiliated tribes, California black oak, is present (Deur 2007). The Park Service is taking extreme care to not disturb any black oaks within the project area and will be planting additional seedlings in the fall.

Procedures and Ongoing Management for the Protection of the Environment:



Procedures to protect the environment include, but not limited to, National Park Service policy (NPS Organic Act, 1916), Merced Wild and Scenic River Management Plan (2014) and mitigation measures proposed by the cooperating agencies and the Yosemite National Park subject matter experts, which are listed below. Additionally, the project will be completed during the dry season of summer and early fall to minimize potential impact to the Merced River and to wildlife such as nesting birds and California red-legged frogs. The Park will implement the following mitigation measures through construction:

Air Quality

- During excavation and soil loading activities, water hoses will be used to suppress dust.
- Cessation of work may be necessary during excessively windy conditions.

Vegetation

- Measures shall be taken to prevent the introduction of exotic species in the project area and staging areas. All earth moving equipment must enter the Park free of dirt, dust, mud, seeds, or other potential contaminants. Examples of equipment that require inspection are excavators, skid steers, or boring equipment. Passenger vehicles do not need inspection but should be clean prior to entry in the park. Equipment exhibiting any dirt or other material attached to frame, tires, wheels, or other parts shall be thoroughly cleaned by the contractor before entering the Park. Areas inspected shall include, but not be limited to, tracks, track guard/housings, belly pans/under covers, buckets, rippers, and other attachments. Equipment that does not pass inspection will be turned around to the nearest cleaning facility outside the park. The contractor shall notify the construction manager at least two work days (not including weekends) prior to bringing any equipment into the Park. Equipment found to have entered the Park with potential contaminants will be removed from the Park at the direction of the Contracting Officer at contractor's sole expense.
- Park invasive species crew will survey for and treat high priority invasive species within the project area prior to start of construction and for several years after construction, under the direction of the Yosemite National Park Invasive Plant Management Plan (2010) which can be found here:
 <u>https://www.nps.gov/yose/learn/management/upload/IPMP_Update-</u>
 <u>Print_Version_12_13_2010_reduced.pdf</u>. Target species include Himalayan blackberry, bull thistle, wooly mullein, Klamathweed, and velvet grass.
- During project planning and design, consult with vegetation staff to survey project area, including buffer zone and staging areas, for special status plant species, including species of particular importance to park affiliated tribes. Avoid during design, and flag for construction avoidance. If disturbance cannot be avoided, consult with vegetation staff on mitigation measures.

Water Quality

- The project includes more than one acre of ground disturbance; therefore, according to the National Pollutant Discharge Elimination System (NPDES) General Permit, Order No. 2009-0009- DWQ (as amended by 2010-0014-DWQ and 2012-0006-DWQ), the Park Service must enroll under the General Permit and prepare a Stormwater Pollution Prevention Plan (SWPPP), unless the Park Service demonstrates the project qualifies for a waiver, before work begins on site. The project manager is responsible for SWPPP preparation and implementation, or for demonstrating that the project is exempt from General Permit coverage.
- Project manager will adhere to the requirements of the Clean Water Act section 401 water quality certification and 404 permit for this action.

Wildlife

- No tree removal will occur at this site during nesting bird season from May 1-July 31.
- The following California red-legged frog (CRLF) protection measures apply:
 - Include the Park Service's Aquatic Ecologist as a core team member on any planning meetings or reviews. This project restores habitat that is likely to be enhanced by project actions and made more favorable/suitable for CRLF. Consult with the Aquatic Ecologist to ensure that project timing avoids sensitive periods for CRLF and enhances habitat.



- An educational talk by Aquatic Wildlife Biologist is required schedule no later than two weeks before work starts. This would need to happen for both tree felling/piling crews, as well as restoration crews.
- Pre-work CRLF surveys are required. Contact Park Service Aquatic Ecologist at least two weeks before work starts to schedule surveys, preferably much earlier. Monitoring may be required depending on the findings from the surveys.
- Minimize use of heavy equipment in natural areas; go in and out via the same route if they must drive into areas for work. Avoid turning in natural areas.
- Staff will be reminded to obey park speed limits to avoid vehicle strikes of wildlife, with extra caution exercised during warm wet conditions when frogs may be more likely to wander onto roads during dispersal events that often coincide with precipitation.
- If CRLF are discovered in the work area during work activities, work must stop in the vicinity (within 500 feet of the CRLF) and the Park Service Aquatic Ecologist must be contacted immediately (209-379-1438). Staff may not relocate, handle, or disturb in any way a CRLF. Work may resume at the direction of the Aquatic Ecologist.

The on-going management for protection of the environment will be achieved by Park Service staff conducting pre-and-post implementation monitoring of physical, hydrologic, vegetation, and wildlife metrics to detect changes over time following project completion (See attached Sugar Pine Floodplain Restoration monitoring plan, Attachment E). By continuing to monitor this project the Park Service will be able to conduct adaptive management and react to any project deficiencies or issues if they are to arise. The location of this project is completely within Yosemite National Park and this land will not be developed in the future. Additionally, the Merced River watershed above the project site is completely within the Park and in federally-designated wilderness.

D. The project does not include any construction activities, except for construction activities solely related to habitat restoration. Please cite supporting documents and provide as an attachment.

The Central Valley Regional Water Quality Control Board (Region 5) has determined that the project does not include any construction activities, except for construction activities solely related to habitat restoration. This project is exclusively a restoration project (See attached work plan and schedule, Attachment D). The Park Service will be implementing alternative 4 from a study that examined this reach of the river by UC Santa Barbara (UCSB) and other collaborators. This project will address two of the actions recommended in the UCSB study: 1) floodplain reactivation (in floodplain between Reach 7 and Reach 5), with lower banks at swale entrances (within Reach 7); and 2) flow-deflecting Engineered Log Jam (ELJ) at Tenaya Creek confluence. The building of the ELJ is the only construction that will occur in this project and solely for the purpose of floodplain and riverbank restoration. The final UCSB report, Basis of Design, Final Report-Phase 3 (2020), is located here: https://www.nps.gov/yose/learn/nature/mercedrestoration-documents.htm

5. CERTIFICATION

I certify that I have the authority to determine whether a project is exempt pursuant to CEQA Guidelines section 15025(a)(1), and this project meets all the requirements described in Public Resources Code section 21080.56, and that I have submitted all the determinations required therein necessary to obtain the concurrence of the Director of Fish and Wildlife.



for

PATRICK PULUPA, Executive Officer Central Valley Regional Water Quality Control Board



State of California – Department of Fish and Wildlife CEQA RESTORATION STATUTORY EXEMPTION REQUEST FORM DFW 21080.56 (New 03/16/22)

ATTACHMENT A – Project Maps

Figure 1. Project Vicinity Map





State of California – Department of Fish and Wildlife CEQA RESTORATION STATUTORY EXEMPTION REQUEST FORM DFW 21080.56 (New 03/16/22)

Figure 2. Impacts to Aquatic Resources

Sugar Pine Bridge Floodplain Restoration **Yosemite National Park Resources Management and Science** Aquatic and Wetland Impacts Map **U.S. Department of the Interior** Sugar Pine Temporary impacts: R3US5A - 2.41 Legend acres impacted by Permanent impacts: removing conifers R3US5A - 0.18 Project area acres impacted removing 591.2 Restoration area (17.11 acres) cubic yards of fill Permanent impacts: Permanent impacts (0.49 acres) R3USA-0.12 acres Permanent impacts: impacted, installing Temporary impacts (2.53 acres) R3US5A - 0.11 acres impacted, engineered log jam Rehabilitation in non-wetland removing 361 cubic Temporary impacts: R3USA - 0.11 yards of fill Excavation for floodplain reactivation (2.29 acres impacted by removing conifers acres) Permanent impacts: R3US5A - 0.05 acres impacted removing 156.1 cubic yards of fill Permanent impacts: R3US5A - 0.02 acres impacted removing 66 cubic yards of fill Moran Point R3USA: Riverine (R), upper perennial (3), unconsolidated shore (US), temporarily flooded (A) R3USA: Riverine (R), upper perennial (3), unconsolidated shore (US), vegetated (5) temporarily flooded (A) Restoration area C OpenStreetMap (and) contributors. CC-BYP: 17.11 acres **Riverene vegetated** Total in Riverene (Riparian zone) (Stream) Project Area mpacts 0.02 0.04 Mile Permanent impacts (acres) 0.37 0.12 0.49 Temporary impacts (acres) 2.42 0.11 2.53 0.01 0.03 Kilometers 2.79 0.23 3.02 Total acres