Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6)

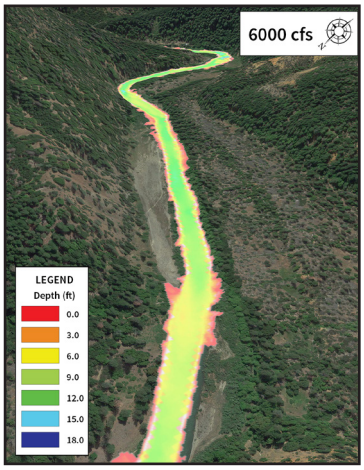
Environmental Assessment/Initial Study

DOI-BLM-CA-NO60-2019-0006-EA and TR-EA0218

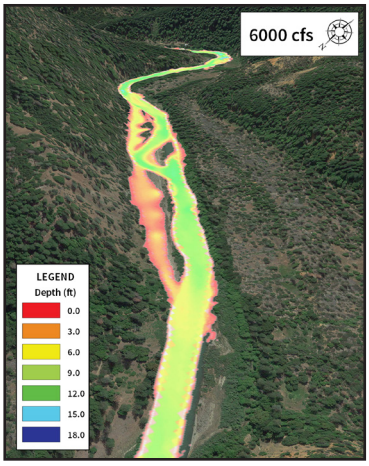
State Clearinghouse #2018122041

September 2019

Dutch Creek



Existing Conditions



Design Conditions

California Lead Agency for CEQA
North Coast Regional Water Quality Control Board

Project Proponent and Federal Lead Agency for NEPA
Trinity River Restoration Program
U.S. Department of the Interior, Bureau of Reclamation

Federal Co-Lead Agency for NEPA
U.S. Department of the Interior, Bureau of Land Management

Federal Cooperating Agency for NEPA
U.S. Department of Agriculture, Forest Service

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6)

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SCH #2018122041

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Trinity River Channel Rehabilitation Site:
Dutch Creek (River Mile 85.1–86.6)
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Acronyms and Abbreviations

A	access routes
AB	Assembly Bill
ACS	Aquatic Conservation Strategy
APE	Area of Potential Effect
Basin Plan	Water Quality Control Plan for the North Coast Region
BFE	base flood elevation
BLM	U.S. Bureau of Land Management
BO	Biological Opinion
C	contractor use areas
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH	Critical Habitat
CO2	carbon dioxide
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships
cy	cubic yard
DWR	California Department of Water Resources
EC	environmental commitment
EA	Environmental Assessment
EA/IS	Environmental Assessment/Initial Study
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESU	evolutionarily significant unit
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FIS	Flood Insurance Study
FUP	Free Use Permit
GHG	greenhouse gas
HVT	Hoopa Valley Tribe

IAP	Integrated Assessment Plan
IC	in-channel construction
IS	Initial Study
LRMP	Land and Resource(s) Management Plan
MDB&M	Mount Diablo Base and Meridian
MMRP	Mitigation Monitoring and Reporting Program
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NFS	National Forest System
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRHP	National Register of Historic Places
NTU	nephelometric turbidity unit
ORV	outstandingly remarkable value
PA	Programmatic Agreement
PM	particulate matter
PM10	particulate matter less than 10 microns in aerodynamic diameter
PM2.5	particulate matter less than 2.5 microns in aerodynamic diameter
PRC	Public Resources Code
Reclamation	Bureau of Reclamation
Regional Water Board	North Coast Regional Water Quality Control Board
RM	River Mile
RMP	Resource Management Plan
ROD	Record of Decision
ROW	right-of-way
STNF	Shasta-Trinity National Forest
SLJ	structured log jams
SMARA	Surface Mining and Reclamation Act
SONCC	Southern Oregon/Northern California Coast
SR	State Route
TMC	Trinity Management Council
TMDL	total maximum daily load
TRD	Trinity River Division
TRRP	Trinity River Restoration Program

U	upland
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDI	U.S. Department of the Interior
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VE	value engineering
VQO	visual quality objective
VRM	visual resource management
WP	wood placement
WSE	water surface elevation
WSR	Wild and Scenic River
WSRA	Wild and Scenic Rivers Act
WUA	weighted useable area
X	temporary crossings

1 INTRODUCTION AND BACKGROUND

This Environmental Assessment/Initial Study (EA/IS) for the proposed Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile [RM] 85.1–86.6) was prepared by the United States Department of the Interior (USDI), Bureau of Reclamation (Reclamation); USDI Bureau of Land Management (BLM), and United States Department of Agriculture, Forest Service (Forest Service) to meet the requirements of the National Environmental Policy Act (NEPA) and by the North Coast Regional Water Quality Control Board (Regional Water Board) to meet the requirements of the California Environmental Quality Act (CEQA). Reclamation is the lead agency under NEPA; BLM is a co-lead agency for actions specific to BLM lands and the Forest Service is a cooperating agency for actions specific to national forest system (NFS) lands under NEPA. The Regional Water Board is the lead agency under CEQA. The federal agencies worked with the Regional Water Board to analyze the potential impacts of the proposed activities under NEPA (40 Code of Federal Regulations [CFR], Section 1508.9(a)) and CEQA (California Public Resources Code Sections 21000 et seq.).

Appendix A (CEQA environmental checklist) to this EA/IS was prepared to identify the resource topics that were addressed in the *Channel Rehabilitation and Sediment Management Activities for Remaining Phase 1 and Phase 2 Sites, Part 1: Final Master Environmental Impact Report and Part 2: Environmental Assessment/Final Environmental Impact Report (Master EIR and EA/EIR;* DOI-BLM-CA-NO60-2009-0085-EA*, Regional Water Board and Reclamation 2009)* <http://www.trrp.net/library/document/?id=476>and are considered in this document. This appendix is also intended to satisfy CEQA requirements.

This EA/IS incorporates by reference, and is tiered from, the two previous joint NEPA/CEQA documents, the *Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Report* (Trinity River EIS/EIR; USFWS et al. 2000) and the Master EIR and EA/EIR. [1] The proposed Dutch Creek rehabilitation site (referred to as the project area in this EA/IS) was identified in the Master EIR as a Phase 2 site and discussed at a programmatic level. The purpose of this document is to provide a site-specific analysis of the proposed site rehabilitation activities.[2]

After the EA/IS finalized, BLM would issue a right-of-way (ROW) to Reclamation pursuant to Title V of the Federal Land Policy and Management Act (43 USC 1761 et seq.) for implementation of the rehabilitation activities on BLM-managed land. The ROW would authorize activities and access as described in this document. BLM would also issue a Free Use Permit (FUP) pursuant to 43 CFR 3604 that would authorize Reclamation to process and use up to 25,000 cubic yards of mineral materials for restoration activities at the Dutch Creek site floodplain. All environmental commitments, project design features, mitigation measures, and best management practices (BMPs) developed for this EA/IS would be considered for incorporation into the BLM authorizations.

The Forest Service is considering entering into an agreement with Reclamation for implementation of the rehabilitation activities on Forest Service-managed lands. All environmental commitments,

[1] For the Forest Service, these documents are incorporated by reference since it was not a party to these two NEPA/CEQA documents.

[2] Copies of the Master EIR, the 2000 ROD, and the Trinity River EIS/EIR are also available on the TRRP website <http://www.trrp.net/program-structure/foundational-documents/>.

project design features, mitigation measures, and BMPs developed for this EA/IS would be incorporated, in writing or by reference, into the Forest Service authorization.

1.1 LOCATION OF REHABILITATION SITES

Reclamation proposes to conduct mechanical channel rehabilitation activities on the mainstem Trinity River downstream of Lewiston Dam in the project area, as illustrated on Figure 1-1. The project area encompasses approximately 155 acres, which include 32 acres of BLM land, 48 acres of NFS land, and 75 acres of private land. Activities will take place on approximately 40 acres. Throughout this document, the terms river left and river right are used to refer to the banks of the Trinity River when looking downstream. For this project, the left bank is generally the west and south side of the river and the right bank is the east and north side.

The Dutch Creek rehabilitation site is located about 5 miles south (upstream) of Junction City, California. It is in Township 33 North, Range 10 West, Sections 29 and 32, Mount Diablo Base and Meridian (MDB&M) (Figure 1-1). The river elevation at the site is approximately 1,520 feet above mean sea level. Access to the site is via Dutch Creek Road, which intersects State Route 299 at Junction City, to Evans Bar Road and Forest Service motorized trails 10W16 and 10W16a

1.2 TRINITY RIVER RESTORATION PROGRAM BACKGROUND

The fundamental purpose of the Trinity River Restoration Program (TRRP) is to restore historic river processes to the Trinity River through implementation of the 2000 Record of Decision (ROD) for the Trinity River EIS/EIR. It is the intent of the TRRP to restore a properly functioning river through rehabilitation activities at multiple locations in order to increase naturally spawning anadromous fish populations to levels that existed prior to construction of Lewiston and Trinity Dams. The target reach for Trinity River restoration is the approximately 40-mile length of river downstream of Lewiston Dam to the confluence of the North Fork Trinity River.

In general, the TRRP approach to channel rehabilitation is to reconnect the river with its floodplain as explained in detail on the TRRP website at: <http://www.trrp.net/restoration/channel-rehab/rehabilitation-concepts/#page-part>.

The Master EIR includes a brief chronology summarizing the most pertinent management actions that have occurred relevant to the Trinity River Basin between 1938 and 2008 (section 1.4.4, pages 1-8). Additional details concerning the legislative and management history can be found in the Trinity River EIS/EIR and the EA/Final EIRs for TRRP projects constructed between 2005 and 2008[3]. These documents are on file at the TRRP office in Weaverville, California, and are available on the TRRP website <http://www.trrp.net> and at the Weaverville public library. The Master EIR (section 1.4.5, pages 1-10 through 1-15) also contains a summary of the various restoration activities that have been undertaken since the signing of the ROD, as well as brief discussions of other watershed restoration programs and activities occurring within the basin; additional information is available on the TRRP website[4].

[3] Hocker Flat (Reclamation and California DWR 2004), the Canyon Creek Suite (Reclamation and the Regional Water Board 2006), Indian Creek (Reclamation and Trinity County Resource Conservation District (TCRCD) 2007), and Lewiston-Dark Gulch (Reclamation and TCRCD 2008).

[4] Watershed activities on the TRRP website: <http://www.trrp.net/restoration/watershed-activities/>.

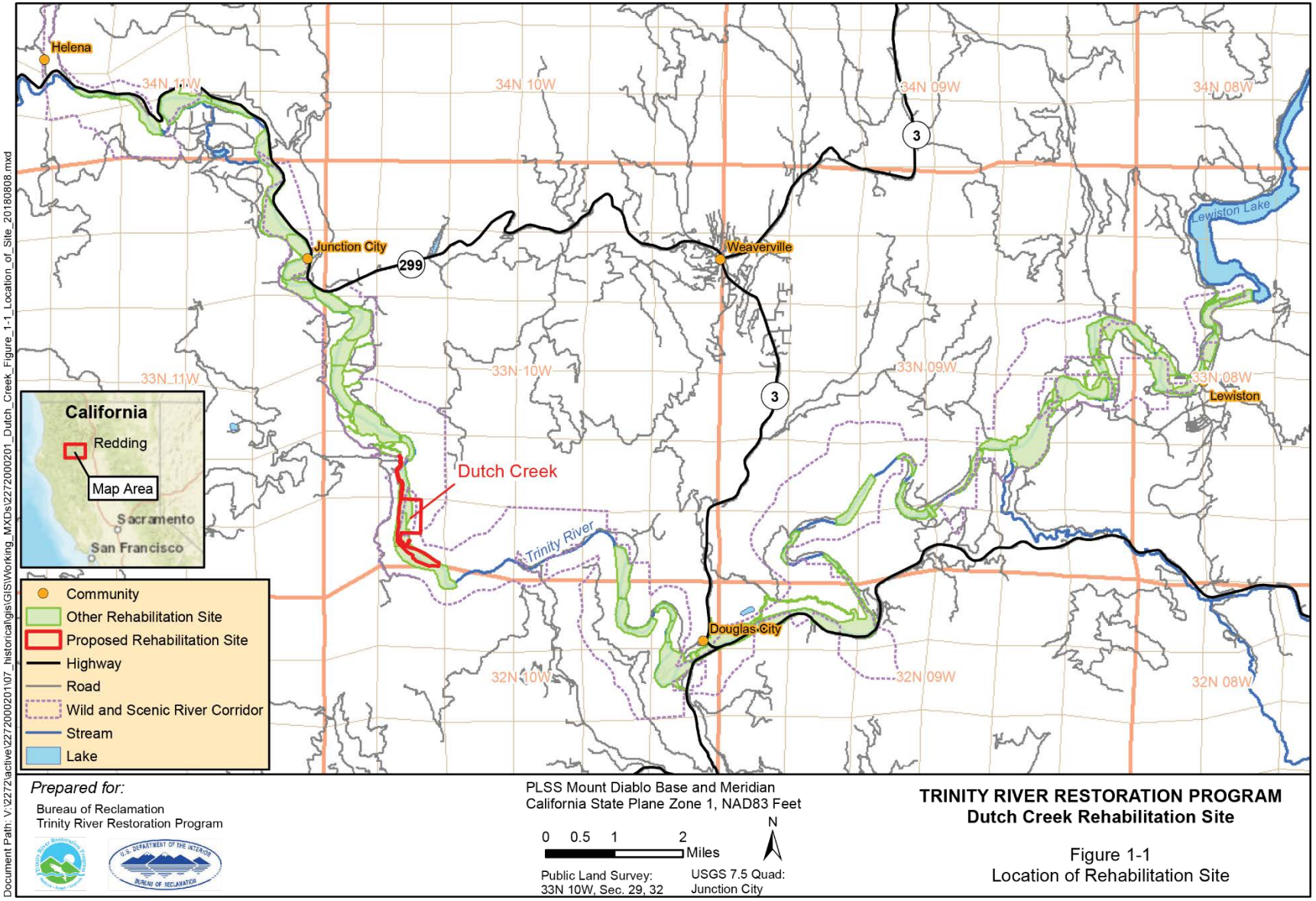

Figure 1-1. Location of Dutch Creek Rehabilitation Site

1.3 PURPOSE AND NEED/PROJECT OBJECTIVES

The TRRP is working to provide increases in habitat for all life stages of naturally produced anadromous fish native to the Trinity River in the amounts necessary to reach congressionally mandated goals. The strategy is to create native fish habitat while also ensuring that habitat complexity and quantity increase as the alluvial processes of the Trinity River are enhanced or restored in a manner that would perpetually maintain fish and wildlife resources (including threatened and endangered species) and the river ecosystem. The proposed rehabilitation activities at the Dutch Creek site are needed to support the TRRP's goals of restoring fish populations to pre-dam levels and restoring dependent fisheries, including those held in trust by the federal government for the Hoopa Valley and Yurok tribes.

Specific design objectives for the Dutch Creek rehabilitation site are:

- Create complex floodplain and side channel habitat for juvenile salmonids;
- Increase quality of fry and juvenile rearing habitat through a range of base and channel maintenance flows using constructed large wood structures; and
- Facilitate historic river processes via excavation of berms and tailing deposits to establish stable streambanks, floodplain connectivity, and coarse gravel recruitment.

1.4 PURPOSE OF THIS DOCUMENT

Both NEPA (42 USC 4321 et seq.) and CEQA (California PRC, Section 21000 et seq.) require that governmental agencies disclose information about proposed activities that may affect the environment, evaluate the potential environmental impacts of their proposed actions before making formal commitments to implement them, and involve the public in the environmental review process. This document, a site-specific EA/IS for the modified proposed action[5] at the Dutch Creek site has been prepared to comply with NEPA and CEQA. This EA/IS document evaluates the environmental impacts of the modified proposed action, recommends project design features and mitigation measures to minimize impacts, and is designed to facilitate implementation of the project under all applicable laws.

For Reclamation, this document is tiered to the previous analysis in the *Trinity River Mainstem Fishery Restoration Final EIS/EIR* (FEIS/EIR; USFWS et al. 2000a) prepared by U.S. Fish and Wildlife Service (USFWS), Reclamation, and the Hoopa Valley Tribe in 2000.

Neither the BLM nor the Forest Service participated in the preparation of the 2000 FEIS/EIR, therefore the analysis in this document is incorporated by reference. The Forest Service did not issue a decision as a result of the 2009 Master EIR/EA/EIR. Consequently, the NEPA analysis provided in this EA/IS stands alone and incorporates by reference the analyses in the 2009 Master EIR/EA/EIR (Regional Water Board and Reclamation 2009).

In 1994, the USFWS as the NEPA lead agency and Trinity County as the CEQA lead agency began the public process for developing the EIS/EIR for the Trinity River Mainstem Fishery Restoration Program. The FEIS portion of the Trinity River FEIS/EIR (published in October 2000) functions as a project-level NEPA document supporting policy decisions associated with managing Trinity River

[5] The term modified proposed action is used to distinguish from the initial proposed actions described in 2014 and the subsequent proposed action that was redefined in the 2015 scoping processes.

flows and as a programmatic NEPA document providing "first-tier" review of other potential actions, including the modified proposed action[6]. However, because the Trinity County Board of Supervisors—the CEQA lead agency for the Trinity River FEIS/EIR— never certified the EIR portion of the 2000 FEIS/EIR, the EIR portion was not available to the TRRP and its partner agencies as a CEQA document adequate for tiering. Between 2004 and 2008, four joint EA/EIRs were completed to analyze TRRP channel rehabilitation projects between 2004 and 2008. Based on the similarity of these projects and their environmental impacts and agreement that future TRRP projects would have similar impacts, a separate programmatic document, the 2009 Master EIR, was developed with the Regional Water Board as the CEQA lead agency. The EA portion of the 2009 Master EIR/ EA/EIR tiers from the Trinity River Mainstem Fishery Restoration FEIS/EIR (USFWS et al. 2000a). The ROD, dated December 19, 2000, for the FEIS/EIR directed USDI agencies to implement the Flow Evaluation Alternative, which was identified as the Preferred Alternative in the FEIS/EIR.

A Master EIR forms the basis for analyzing the effects of subsequent projects (CEQA Guidelines, Section 15175 et. seq.). The Master EIR meets the elements required for a Program EIR pursuant to California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15168. Therefore, the Master EIR provides programmatic CEQA level review, from which the Dutch Creek project—a subsequent site-specific project—is tiered.

The Regional Water Board acted as the lead agency for the Master EIR (State Clearinghouse #2008032110) and for the initial study portions of subsequent site-specific EA/ISs. The Master EIR provides a discussion of the existing conditions, environmental impacts, and mitigation measures required to comply with CEQA (California PRC, Section 21000 *et seq.).* In addition to addressing direct and indirect impacts associated with the proposed project and alternatives, the Master EIR addresses cumulative and growth-inducing impacts that could be associated with activities at the remaining Phase 1 and Phase 2 sites. The Regional Water Board certified the Master EIR on August 25, 2009.

Because the Master EIR provides programmatic-level review from which site-specific projects may tier, the analysis of the modified proposed action required under CEQA is tiered from that document. In addition, the EIS portion of the 2000 FEIS/EIR functions as a project-level NEPA document used by the Secretary of Interior to support the development of a Record of Decision that established provisions for managing Trinity River flows and as a programmatic NEPA document providing "first-tier" review of other potential actions, including the modified proposed action. This EA/IS focuses only onsite-specific activities for the Dutch Creek site and serves as a joint NEPA/CEQA document developed to support agency decision-making and satisfy both NEPA and CEQA requirements for public involvement and disclosure.

Under 14 CCR, Section 15177, after a Master EIR has been prepared and certified, subsequent projects that the lead agency determines as being within the scope of the Master EIR will be subject to only limited CEQA environmental review[7]. The California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15177, subd. (b)(2)) states that the preparation of a new environmental document and new written findings will not be required if, based on a review of the IS prepared for the subsequent project, the lead agency determines, on the basis of written findings, that no additional significant environmental effect will result from the proposal, that no new additional

[6] The modified proposed action equates to Alternative 1, as described in Chapter 2 of this EA/IS.

[7] Federal agencies do not have the ability to conduct a limited NEPA review; the Master EIR was not a NEPA document.

mitigation measures or alternatives are required, and that the project is within the scope of the Master EIR. Whether a subsequent project is within the scope of the Master EIR is a question of fact to be determined by the lead agency based on a review of the IS to determine whether there are additional significant effects or new additional mitigation measures or alternatives required for the subsequent project that are not already discussed in the Master EIR.

This EA/IS provides site-specific details for the environmental impact analysis of the Dutch Creek channel rehabilitation project and has been prepared to comply with NEPA (42 USC, Section 4321 *et seq.)* and CEQA (California PRC, Section 21000 *et seq*.). This EA/IS focuses only onsite-specific activities at the Dutch Creek site and serves as a joint NEPA/CEQA document for project authorization by both federal and California state regulatory agencies. This EA/IS contains a site-specific project description and other information required to apply for enrollment under General Water Quality Certification R1-2015-0028 (or subsequent reissued Certification) for Trinity River channel rehabilitation activities, which the Regional Water Board will consider in making its determination and approval decision.

1.5 OTHER REGULATORY REQUIREMENTS

In addition to CEQA and NEPA, the proposed rehabilitation activities at the Dutch Creek site are subject to a variety of federal, state, and local statutes, regulations, policies, and other authorities, such as the Clean Water Act, Endangered Species Act (ESA), California Endangered Species (CESA), California Fish and Game Code, National Historic Preservation Act[8], Wild and Scenic Rivers Act, BLM's 1993 Resource Management Plan (RMP), and the Shasta-Trinity National Forest (STNF) Land and Resource Management Plan (LRMP) (USDA-FS 1995, as amended). The primary responsible and trustee agencies are the U.S. Army Corps of Engineers (USACE), USFWS, National Marine Fisheries Service (NMFS), California Department of Fish and Wildlife (CDFW), the Regional Water Board, and Trinity County. Chapter 3, Regulatory Framework, of the Master EIR includes descriptions of the actions required of these agencies and the applicable environmental statutes and identifies permits required for the TRRP's work on the Trinity River.

The BLM's Redding Field Office manages federal lands in the Trinity River Basin in accordance with its 1993 RMP and Record of Decision (BLM 1993). The Trinity Management Area section of the RMP discusses the general condition of natural resources in the plan area and prescribes appropriate land use management for lands within the plan's jurisdiction, including BLM-managed lands at the Dutch Creek rehabilitation site. Section 4.2.2 of the Master EIR provides additional information about the RMP. As part of its decision-making process, BLM must evaluate the consistency of the modified proposed action with the RMP, as amended.

The STNF manages NFS lands in the Trinity River Basin in accordance with its LRMP. The LRMP discusses the general condition of natural resources in the plan area and prescribes appropriate land use management for lands within the plan's jurisdiction, including NFS lands within the boundary of the Dutch Creek site. Section 4.2.2 of the Master EIR provides additional information about the

[8] Section 3.1.1 of the Master EIR provides a comprehensive discussion of Reclamation's approach to compliance with the National Historic Preservation Act, specifically with respect to Section 106 consultation requirements. Appendix D of the Master EIR documents the programmatic agreement between USFWS, Reclamation, BLM, the Hoopa Valley Tribe, the California State Historic Preservation Office, and the Advisory Council on Historic Preservation.

LRMP. As part of the Forest Service decision-making process, the agency must evaluate the consistency of the modified proposed action with the LRMP, as amended.

This project supports specific LRMP resource goals to "provide for the protection, maintenance and improvement of wild trout and salmon habitat," to "coordinate rehabilitation and enhancement projects with cooperating agencies involved in the Model Steelhead Stream Demonstration Project Plan and the Trinity River Basin Fish and Wildlife Management Program," and to "identify and treat riparian areas that are in a degraded condition" (USDA-FS 1995, p. 4-4, 4-18). In so doing, it also meets Forest Plan guidelines to "design and implement fish and wildlife habitat restoration and enhancement activities in a manner that contributes to attainment of Aquatic Conservation Strategy objectives" (Shasta-Trinity National Forest 1995, p. 4-58), as well as the riparian management prescription objective that "fish habitats will be maintained and enhanced" (USDA-FS 1995, p. 4-58,4-59).

1.6 SCOPING AND PUBLIC INVOLVEMENT TO DATE

Since the signing of the 2000 ROD and efforts to begin its implementation, TRRP and other agencies have held numerous public meetings and open houses to obtain public input and provide the public with information on the overall TRRP rehabilitation activities. As part of ongoing TRRP outreach activities, TRRP staff members have met with local groups (e.g., fishing guides and mining groups) and individual landowners from the Junction City area to obtain stakeholder input and advice and to address general concerns not specific to the Dutch Creek rehabilitation activities. Notice of all public meetings and other pertinent project information are announced in local newspapers and posted on the TRRP's website <http://www.trrp.net>. Included below is a summary of the scoping and public involvement for the Dutch Creek site to date. Full details are included in Appendix B.

Reclamation, in conjunction with the Forest Service and BLM, initially scoped a larger Dutch Creek channel rehabilitation project in 2014. It proposed to treat 179 acres from river mile 85.1 to 86.6. The scoping notice was signed and posted on the STNF website on November 7, 2014. Five letters or emails with comments from the public regarding the original proposed action were received. The project record includes documentation of these submittals.

In response to the 2014 scoping comments and subsequent consideration by the TRRP Design Team, the project was divided into two phases, the Lower Dutch Creek Channel Rehabilitation Project and the Upper Dutch Creek Channel Rehabilitation Project. The Lower Dutch Creek Channel Rehabilitation project proposed to treat 55 acres from river mile 85.0 to 85.5 and was rescoped on June 13, 2015. The scoping package was posted on the STNF website on June 16, 2015. Four written comments and two oral comments via telephone were received on the Lower Dutch Creek Channel Rehabilitation Project. Since then, ongoing communication between the agencies and stakeholders has occurred informally as the Design Team continued to develop the modified proposed action described in Chapter 2. This proposal will treat 45 acres from river mile 85.1 to 86.6. As the modified proposed action will conduct ground-disturbing activities only within the project footprint of the 2014 (and 2015) proposals and since the proposed activities are very similar to those proposed previously, the modified proposed action described in this EA/IS is within the scope of the 2014 and 2105 proposals and additional scoping is not required.

1.6.1 Key Issues from Scoping

Documentation concerning the comments and identification of key issues addressed in this EA/IS is provided in Appendix B. During Forest Service scoping of this project, the following key issues were

identified for consideration in this document and cross referenced in Table 3-1 with respect to the appropriate resource topic:

- Proposed project elements could have an impact on water quality.
- Proposed project elements will affect anadromous fish habitat and populations.
- Vehicular river crossings create water quality issues, affect fish habitat, and increase the potential for a spill of hazardous materials into the river.
- Proposed project elements may be inconsistent with the Aquatic Conservation Strategy objectives temporally and spatially.
- Proposed project elements could affect habitat for mussels.
- Proposed project elements could cause changes in amphibian and reptile habitat and populations.
- Proposed project elements could affect northern spotted owl habitat and populations.
- Proposed project elements could impact visual quality, Wild and Scenic River characteristics, and recreational activities.
- Restoration activities have the potential to introduce noxious weeds into the area.

1.7 HISTORIC PROPERTIES AND CULTURAL RESOURCES

Federal agencies are required to consider the effects of their actions on historic properties (i.e., cultural resources that rise to a certain level of significance), in compliance with Title 54 USC § 306108, commonly referred to as Section 106 of the National Historic Preservation Act (NHPA) of 1966. The Section 106 process of the NHPA is often used to satisfy the requirements for cultural resources under NEPA. The Section 106 process includes identification, consultations, and, if needed, mitigation measures for determined adverse effects.

A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Cultural resources that meet criteria for listing on the California Register of Historical Resources (CRHR) (defined at 14 CCR § 15064.5[a]) are called “historical resources” and cultural resources that meet the criteria for listing on the National Register of Historic Places (NRHP) (defined at 36 CFR § 60.4) are called “historic properties.” While the CRHR and NRHP significance criteria are similar, the NRHP is given precedence in this analysis because cultural resources eligible for the NRHP are also eligible for inclusion in the CRHR, but the reverse is not necessarily true (PRC 5024.1[c]). Therefore, employing the federal standards will fulfill both federal and state requirements for cultural resources.

Additional state regulations apply, including Assembly Bill 52 (AB 52), which was signed by the Governor of California in September 2014. The bill requires that California state lead agencies consult with California Native American tribes traditionally and culturally affiliated with the geographic area of a project when the tribe requests to be informed of such projects and requests the consultation to ensure that impacts to tribal cultural resources are minimized. AB 52 requirements apply to projects with a notice of preparation or a notice of negative declaration or mitigated negative declaration filed on or after July 1, 2015. The consultation requirements of AB 52 are not applicable to the proposed Dutch Creek project because the Regional Water Board adopted the Master EIR in 2009. However, the mitigation, monitoring, and reporting plan adopted by the Regional Water Board

includes measures for the protection of tribal cultural resources, including tribal consultation and coordination; site evaluations; and avoidance, minimization, and other specific mitigation as necessary at the site scale.

1.8 DRAFT EA/IS

Consistent with the NEPA requirements of Reclamation, the Forest Service, and BLM, the public review of the Draft EA/IS began when the agencies posted the document to their official websites. The formal CEQA 30-day public review period began on December 19, 2018, when the document was submitted to the California State Clearinghouse; for the EA, the comment period began when a Forest Service legal notice was published in the newspaper of record (the *Redding Record Searchlight*). The document was circulated to local, state, and federal agencies and to interested organizations and individuals for a comment period of 30 days to meet CEQA, NEPA, and agency-specific noticing processes. For CEQA, the review period ran from when the document was accepted at the State Clearinghouse through January 18, 2019. At the onset of the review period, public notices informing the public of the availability of the Draft EA/IS for review were posted on the TRRP website <http://www.trrp.net/>, and the STNF website, at the TRRP'S Weaverville office, at the BLM's Redding Field Office, and in the *Trinity Journal* and *Redding Record Searchlight* newspapers; the public notices were also mailed to local landowners and emailed to interest groups. During the TRRP's November 28, 2018, evening open house in Junction City, California, for the Chapman Ranch Phase A project, the proposed Dutch Creek project was informally discussed. Because little interest in the proposed Dutch Creek project was expressed at that time, no formal public meeting was held for the project.

Hard copies of the Draft EA/IS were available for review at the BLM and Forest Service offices in Redding, the Reclamation (TRRP) office in Weaverville, as well as at the Weaverville Public Library. Comments were sent to Brandt Gutermuth at Reclamation's Weaverville office.

Copies of the EA/IS are available for review on the TRRP website at <http://www.trrp.net/restoration/channel-rehab/dutch-creek/>, Reclamation's website at <https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=36421>, BLM's website at <https://eplanning.blm.gov/epl-front-office/eplanning/projectSummary.do?methodName=renderDefaultProjectSummary&projectId=118145>, and STNF's website at <https://www.fs.usda.gov/project/?project=45449>.

Five comment submittals were sent to Reclamation: three from individuals, one from an agency, and one from a non-governmental organization. As applicable, these comments have been addressed in various sections of this document and accompanying appendices. None of these comments resulted in a change to the project description or the impacts analysis in this EA/IS. The coded comment letters and the associated responses are included as Appendix C to this document.

2 DESCRIPTION OF ALTERNATIVES

This chapter describes Alternative 1 (modified proposed action) and Alternative 2 (no action) for the Dutch Creek site as well as two alternatives that were eliminated from detailed analysis in this EA/IS.

2.1 ALTERNATIVE 1

The Dutch Creek project reach begins approximately 3 miles upstream of the Dutch Creek Road Bridge in Junction City. Habitat for salmonids and other aquatic and riparian species is currently impaired throughout this reach by the legacy of dredger mining and water diversions. Alternative 1 has been developed to strike a balance between active (e.g. construction) and passive (e.g., flow regime changes) methods for restoring aquatic and riparian habitat while facilitating on a smaller scale dynamic fluvial geomorphic processes that existed before Lewiston Dam was completed.

This alternative consists of a number of rehabilitation activities at the Dutch Creek site. These activities are based on those described and analyzed in Section 2.3.2 of the Master EIR (Regional Water Board and Reclamation 2009).

The proposed rehabilitation activities are briefly described below. Appendix D provides a more in-depth description of the design objectives and discusses each activity area in detail. With the exception of recontouring and vegetation removal, each activity type and area has been assigned a unique alphabetic and numeric identification and descriptive label that corresponds to the type and location of activity area illustrated on Figure 2-1. These labels are used throughout this document.

2.1.1 Recontouring and Vegetation Removal

Under the recontouring and vegetation removal activities, the ground surface would be modified to reduce riparian encroachment and the risk of stranding juvenile salmonids. To varying degrees, vegetation would be cleared and removed at all activity areas that would be subject to rehabilitation activities with the exception of crossings. Where recontouring (e.g., floodplain lowering) is part of the proposed action, the entire site would be subject to vegetation removal. Where possible, riparian vegetation (e.g., willows) would be salvaged for use in onsite revegetation efforts. Unlike other activities, these activities are not illustrated on Figure 2-1 because they overlap with most of the other activity areas.

Grading would be required to construct or enhance topographic features that could develop into functional riparian habitat; excavation and the placement of fill would be balanced. In addition to the activity areas that would be cleared prior to grading, site-specific removal of trees (e.g., conifers and hardwoods) would be required to enhance the safety of the work site, reduce fuel loading, and improve local conditions for individual tree growth and wildlife; the trees that are removed would be used in onsite wood placement[9]. As illustrated in Figure 2-1, upland and contractor use areas (e.g., U-2a, C-2) include discrete locations where retention of existing vegetation would occur to screen upland and staging activities in order to lessen the degree of visual impacts. Removal of vegetation is anticipated based on consultation with, and authorization by BLM, the Forest Service, and landowners.

[9] Tree removal (e.g., hazards trees) outside these activity areas would be limited and subject to site-specific review and authorization by BLM and the Forest Service prior to removal.

Vegetation removed from activity areas, including contractor use areas, would be used for in-river placement as large wood or would be chipped or masticated for use as part of revegetation efforts to increase nutrients in depositional areas and enhance the water holding capability of these deposits. There are a limited number of mature trees at the site; as available and authorized, these trees may be used in the construction of habitat and flow modification features. Activities would be accomplished using a variety of methods, including using hand tools and heavy equipment such as excavators, bulldozers, dump trucks, and, potentially, scrapers. Where feasible, existing riparian vegetation would be maintained to facilitate future recruitment.

2.1.2 Riverine Construction (R) – Lowered Floodplain

At two locations (R-1, R-2), inundated surfaces (i.e., floodplains) would be constructed to inundate and function at flows ranging from 350 to more than 6,000 cubic feet per second (cfs). Construction of these surfaces would also enhance the type and degree of connection to the mainstem at various flows as portions of the existing mainstem channel would maintain water and aquatic habitat during all flows. These activities are intended to expand the surface area of the channel that could be inundated by reoccurring flows below the ordinary high-water mark (i.e., 6,000 cfs). Vegetation would be cleared as necessary, and earth would be excavated to meet design elevations for periodic inundation. Either of these areas (R-1 or R-2) or adjoining contractor use areas may also be used for processing alluvial material that will be used in construction (e.g., cobbles for ballast and fish rock) of in-channel and riverine activity areas. See Table 2-1 for more details on these features.

Newly inundated surfaces would provide important rearing and slow-water habitat for juvenile salmonids and other native anadromous fish and wildlife. They would also increase the likelihood of channel migration that would result in enhanced sinuosity, thereby providing the habitat variability that was historically present and is required to support rapid growth of native fishes.

These treatment areas would rely on a combination of natural recruitment of native riparian vegetation and riparian planting to establish a more diverse assemblage of native vegetation. Revegetation efforts would be consistent with requirements and commitments outlined in the TRRP's Draft Riparian Mitigation and Monitoring Plan. This plan requires supplemental efforts (e.g., in-planting, weed control, irrigation) as necessary to establish riparian vegetation to meet the standard of no net loss in riparian vegetation from pre-project levels.

2.1.3 In-Channel Construction (IC)

In-channel construction (IC) of a meander channel complex (bars, pools, riffles, and side channel) would include those features that would result in a new bend in the river under base flow conditions (e.g., 450 cfs) and would be constructed during the in-channel construction window (July 15 to September 15) authorized by the California Department of Fish and Wildlife. The meander channel complex consists of activity areas IC-1, IC-2a, IC-2b, IC-2c, IC-3, IC-4, IC-5, IC-6, Structured Log Jam [SLJ]-1, and SLJ-2 and is intended to create a meander sequence with a bar-pool-riffle morphology that functions under the current TRRP flow regime. Construction of this complex would increase channel length, complexity, and sinuosity and reduce slope in this section of the channel. Collectively, the construction of these activity areas would provide a diversity of water depths and velocities across a wider range of flows than the existing mainstem channel configuration. Activity areas IC-2a and IC-2c are riffles that would link the bars together and separate the pools. The general location of the pools is shown on Figure 2-1.

The construction of various types and sizes of grade control structures, including construction or excavation of alluvial features, would increase channel complexity through promotion of channel migration, increased sinuosity, reduced fine sediment storage, increased coarse sediment transport, and restoration of depositional features available for spawning and rearing habitat. Riffles are the shallower, faster moving sections of a river. Gravel bars and islands provide habitat complexity as well as other ecological functions.

During construction of this complex, earthen berms and turbidity curtains would isolate constructed features to ensure that water quality standards are met. These berms would be removed at the end of construction if the water within these contained areas is of appropriate quality for discharge to the river or they may be left in place for removal by subsequent high flows. Alternatively, water in the constructed features may be pumped to uplands or slowly metered into the mainstem river post - construction. These techniques would ultimately reduce the amount of turbid water that would reach the Trinity River and would ensure that water quality permit requirements[10] are met (e.g., no more than 20 nephelometric turbidity units (NTU) at 500 feet downstream of construction) (Regional Water Board 2015).

2.1.4 Upland (U)

Excavated materials (i.e., fill) that would not be used for instream construction would be placed in upland environments as fill on terraces formerly subjected to a variety of placer mining activities. Two activity areas would be used on river right; U-2a is on BLM land and U-2b is on NFS lands. There are no upland fill areas on river left. River-right activity areas have been located to ensure that their placement would not increase the elevation of the 100-year flood, consistent with requirements of Trinity County's Floodplain Ordinance. A portion of U-2a may also be used for processing alluvial material (e.g., fish rock) that will be used in the construction of in-channel and riverine activity areas. If material from these locations is needed for instream construction, it may be excavated from authorized on-site IC, R, and U activity areas, processed within these activity areas, and placed in accordance with the design specifications described in detail in Appendix D.

These activity areas would be used to place excess material excavated in the construction of riverine and in-channel activity areas. Within these activity areas, the depth of fill would range from about 1 foot near their edges to as much as 35 feet, depending on the size and location of the activity area. Fill materials would be spread in uniform layers that would blend in with the natural terrain and provide stable slopes for revegetation.

2.1.5 Detailed Master EIR Activities Described to Provide Additional Clarity Beyond That in Table 2-1 of Master EIR

Wood Features – Structured Log Jams (SLJ) and Wood Placement (WP)

Impacts associated with the use of organic (e.g., large wood, slash) and inorganic (e.g., boulders) materials were covered in the Master EIR under Sediment Management activities along with other activities that would facilitate channel construction and maintenance (e.g., excavation and placement of alluvial material in in-channel and riverine areas).

[10] Bureau of Reclamation, Trinity River Restoration Program – General Water Quality Certification, ECM PIN CW-81068 – Regional Water Board enrolls TRRP project to document compliance with section 401 of the Clean Water Act.

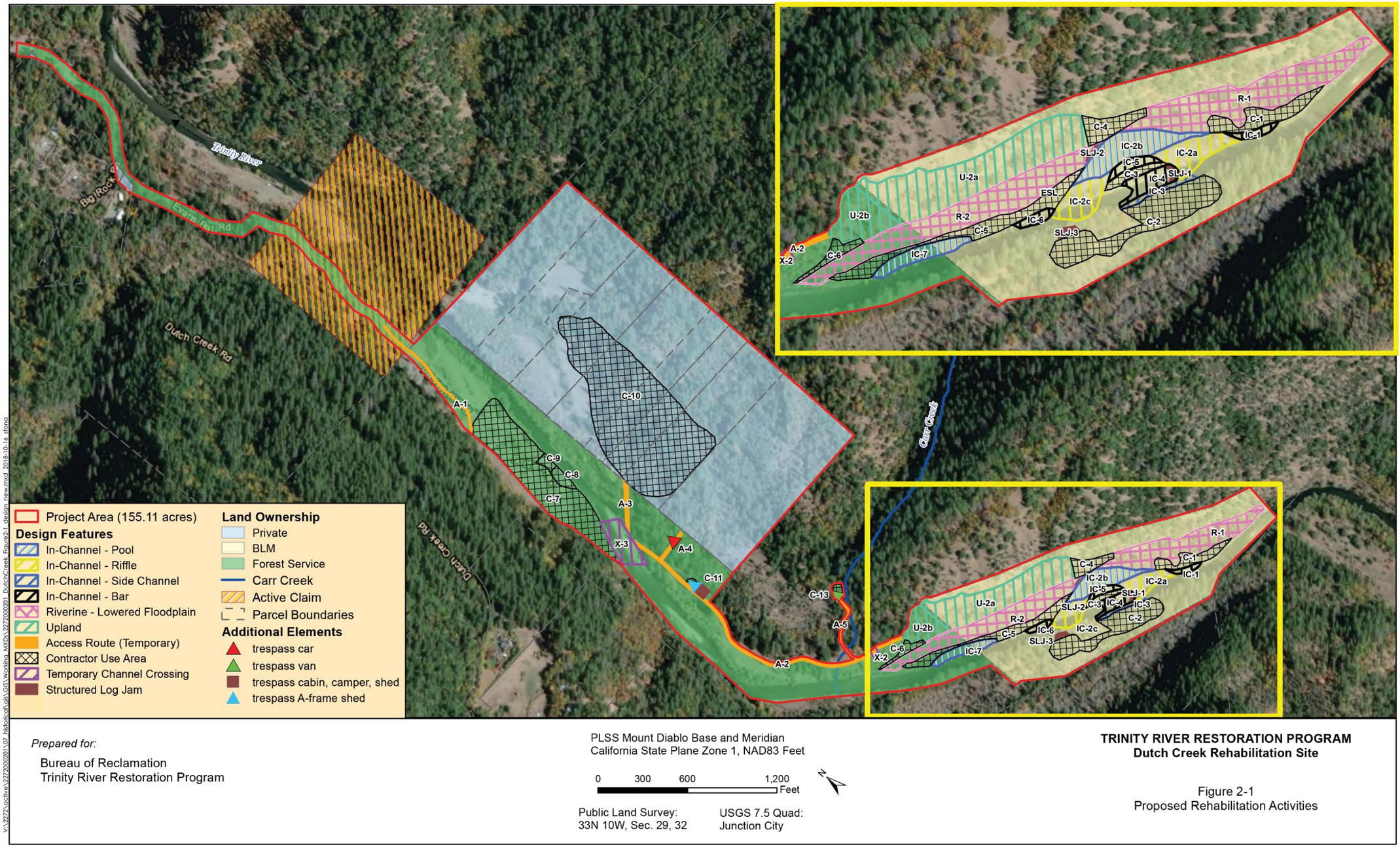

Figure 2-1. Proposed Rehabilitation Activities

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The TRRP would use appropriate materials to cause and enhance changes in the river channel to improve habitat and ecological function. The addition of large rock (>6 inches) as ballast for rock/wood structures (e.g., structured log jams (SLJs)) would increase the probability that these structures would remain in place and confine the river, thereby increasing the power of the river to scour and maintain adult salmonid holding habitat.

As appropriate, large wood and accompanying slash removed as part of vegetation clearing activities would be retained and used for construction of SLJs and wood placement (WP) during riverine and in-channel activities to provide additional hydraulic and habitat complexity and temporary erosion control measures; these activities could potentially occur in any of the IC or R features. This activity could include placement of individual pieces of large wood, small accumulations, and large habitat structures. Construction of SLJs and WP would develop topographical and hydraulic complexity and increase bank length to provide additional salmonid rearing habitat over a wide range of flows. The use of wood would also improve spawning, holding, and rearing habitat for anadromous salmonids.

Woody material is a natural part of healthy rivers. It provides important habitat for aquatic species by providing cover from high flows and predators. The low-velocity areas collect suitable spawning materials, and woody organic materials are a food source for aquatic insects. It can also help create and maintain beneficial habitat features such as pools, islands, and gravel bars.

Processed alluvial material would be created onsite[11] from material excavated from authorized IC, R, and U activity areas; obtained and imported from existing TRRP stockpile sites (e.g., Lower Junction City site); or purchased from local vendors for delivery. Unprocessed material or "pit-run" dirt and gravel from onsite excavation may not be placed directly in-river but may be used in construction of features and for habitat enhancement when using methods that would be continuously monitored for compliance with turbidity standards during work in or near the river.

All large wood features would be designed so that local velocities would be safe for navigation during relatively low river flows (less than approximately 2,000 cfs). Natural wood material would be placed in a manner to reduce the chances of hazardous contact with swimmers and boaters at flows less than about 2,000 cfs.

Because of uncertainties about the availability, types, shapes, and sizes of the wood and the planned construction methods, the exact amounts and locations of wood placement are not known at this time. Trees, treetops, and branches for use in constructing large wood structures would be obtained onsite[12] and/or opportunistically from other lawful sources (e.g., public or private lands where vegetation management activities have occurred) and delivered to the project area. Final WP locations and dimensions of SLJs would be determined in the field based on direction from Reclamation's field engineer.

2.1.6 Contractor Use Areas (C)

There are 11 activity areas that would be available as staging and contractor use areas. Minimal clearing or grading would occur at these areas. Two of these areas (C-11, C-13) would be used for the removal of unauthorized vehicles[13] and structures from NFS lands on river right. Activity area

[11] Within the project boundary at an authorized activity area.

[12] Appendix D, Table D-1 lists the maximum estimated tree removal for each activity area.

[13] After the Draft EA/IS was circulated for public comment, project activities in activity areas A-5, C-11, and C-13 were revised. It was determined that the abandoned vehicle in area C-13 should not be removed to avoid impacts to cultural resources; however, fuel, lubricants, and batteries would be removed from the vehicle using the A-5

C-2 would be used for access, construction, and short-term storage of materials necessary for building SLJ and WP structures on river left. Activity area C-10 would be used for short-term storage of materials in accordance with private landowner approval. The other C areas would be directly associated with the construction and revegetation of riverine and in-channel activity areas, including in-channel wood features. These areas would be necessary for the temporary storage of equipment and materials (e.g., gravel, large wood, slash). Typically, these activity areas are subject to varying degrees of clearing and/or grading to ensure safe and efficient temporary work areas. Activity areas C-7, C-8, and C-9 include portions of Forest Service motorized trails. These trails will be subject to intermittent closures during construction; however, access to private lands will be provided. Collectively, all C areas serve as transportation corridors for moving equipment and materials from one activity area to an adjacent one. Water from onsite sources[14] would be applied to these areas for dust abatement as directed by the Contracting Officer.

2.1.7 Access Routes (A)

There are five access routes identified as discrete activity areas[15]. Activity area A-1 is the only route that provides public access to the portion of the site on river left. This route is a narrow, overgrown native surface route that provides vehicle access to activity areas C-7, C-8, and C-9 from the end of Trinity County's Evans Bar Road. The four access routes on river right (A-2, A-3, A-4, and A-5[16]) would provide access to the activity areas on river right. Following completion of authorized use of these routes, rehabilitation measures (e.g., erosion control, revegetation) would occur in coordination with BLM, the Forest Service, and landowners. Forest Service motorized trail 10W16 will be reestablished in a manner that controls access by motorized vehicles using a combination of signage, grading, and physical barriers (e.g., boulders). The Forest Service would also reestablish or relocate Forest Service motorized trail 10W16A to provide public access to the river.

These routes would primarily be used by a wide array of heavy equipment and other vehicles, often requiring pull-outs (which would be placed at appropriate locations in the field) for two-way traffic. The site-specific design and use of these routes would consider factors like topography, soils, existing vegetation, and the need for future vehicle access, (e.g., for revegetation maintenance). Best management practices would be used to reduce the impacts of road-related sediment on the riparian and aquatic environments.

2.1.8 Temporary Crossings (X)

One temporary crossing of the Trinity River (X-3) would be required. This would be a ford constructed using imported clean gravel and/or native alluvial materials excavated from the bed and bank of the Trinity River or adjacent sources (i.e., fish rock). Crossing of Carr Creek (X-2), an intermittent stream on the right-bank (eastern side) of the Dutch Creek site, would also be required and would be at a location where the creek generally recedes below the ground surface in summer and fall. Several additional temporary fords would be used in the construction of in-channel features. The locations of these temporary fords will be determined during implementation in order to

pedestrian/off-highway vehicle access route. It was also determined that the cabin and other structures in area C-11 should not be removed (see Appendix C, p. C-9, Comment 3D). Activity areas A-5, C-11, and C-13 in the tables and figures of this document remain the same as in the Draft EA/IS..

[14] Water pumps used in the Trinity River would conform to CDFW and NMFS screening criteria.

[15] On average, these access routes would be approximately 15 feet wide with pull outs 30 feet wide to allow vehicles to pass each other; typically, about every 1,000 feet. The length of route segments are listed in Table 2-1.

[16] Activity area A-5 will be used only for pedestrian/off-highway vehicle access to ensure cultural resource impacts are avoided in this area.

minimize environmental impacts. Early in meander construction, the crossing would pass through IC-4 and IC-3. Later, the crossings would occur at constructed riffles IC-2 and IC-2c, and the IC-3 side channel, consistent with the requirements for X-3. All temporary crossings would be designed and constructed to meet the requirements for heavy equipment such as trucks and excavators. Material used in the construction of these crossings would primarily be extracted from authorized activity areas. The number of vehicle trips using the river crossings would be minimized to the extent possible and fords would not be used to transport excavated materials across the river. All excess extracted material would be placed on river right.

Due to requirements to retain passage for fish and boats, at least one-third of each ford would be submerged to a minimum depth of 1 foot under base flow conditions. The construction of X-3 would likely require some vegetation removal on either side of the crossing within an approved activity area adjacent to the crossing (e.g., C-7, A-2, A-3). All temporary crossings would be constructed in a manner that does not impede passage of aquatic organisms or navigability of vessels at the crossings.

2.1.9 Revegetation

Impacts to vegetation are anticipated in most activity areas. Unlike for other activities, revegetation is not illustrated on Figure 2-1 because it overlaps with most of the other activity areas.

Under this activity, revegetation of riparian and upland areas would rely on a combination of planting and natural recruitment of native species consistent with TRRP's Draft Riparian Mitigation and Monitoring Plan and the needs of the BLM and the Forest Service. Native willows from the impact areas would be replanted as clumps during construction to speed recovery of vegetation. Replanting of affected native vegetation (e.g., willows and cottonwoods) would be completed after construction in accordance with a site-specific plan. WP may be used in any activity area to enhance site conditions (e.g., water retention or shade, etc.) for the benefit of plantings or natural regeneration. This activity may include watering during the first 3 years post-planting.

In general, the TRRP objective is to ensure that riparian vegetation is minimally affected by TRRP activities and is replaced at a 1:1 ratio (no net loss of riparian area habitat) within the Trinity River corridor. Revegetation would provide aquatic refugia at high flows, improve terrestrial habitat for birds and other wildlife, provide future wood recruitment, and provide future terrestrial nutrient input to the river. Additional planting, seeding, mulching, and irrigation in activity areas U-2a and U-2b would occur using native seed and rooted stock. Reclamation would also implement measures (e.g., burial, grubbing) to control or inhibit the reestablishment of noxious and non-native invasive plants such as tree-of-heaven (*Ailanthus altissima*) and black locust (*Robinia pseudoacacia*) as part of the vegetation management and grading activities. About 34 acres would be planted with live plants, and 50 acres (much of it overlapping planted areas) would be seeded with native grasses and mulched.

2.1.10 Overview of Dutch Creek Rehabilitation Activities

The proposed rehabilitation activities outlined in Table 2-1 are briefly described below. Appendix D provides an in-depth description of the design objectives and discusses each activity area in detail.

Table 2-1. Overview of Activity Areas at Dutch Creek Rehabilitation Site

Activity Area[a]	Map Symbol	Design Feature to be constructed	Activity/ Treatment Area[b]	Excavation (CY)[c]	Fill (CY)[c]
IC-1		In-Channel - Bar	0.15 ac	250	320
IC-2a		In-Chanel - Riffle	0.81 ac	7,070	3,215
IC-2b		In-Channel - Pool	1.17 ac	15,765	0
IC-2c		In-Chanel - Riffle	0.70 ac	4,880	20
IC-3		In-Channel – Side Channel	0.18 ac	110	530
IC-4		In-Channel - Bar (island at higher flows)[d]	0.47 ac	0	6,180
IC-5		In-Channel - Bar	0.21 ac	1,345	0
IC-6		In-Channel - Bar	0.16 ac	5	650
IC-7		In-Channel - Pool (Main channel expansion)	0.57 ac	4,630	10
		IC Subtotal =	**4.40 ac**	**34,055 CY**	**10,925 CY**
R-1		Lowered floodplain[d]	3.15 ac	22,840	10
R-2		Lowered floodplain[d]	3.19 ac	14,790	30
		R Subtotal =	**6.35 ac**	**37,630 CY**	**40 CY**
SLJ-1		Structured log jam	0.07 ac		
SLJ-2		Structured log jam	0.06 ac		
SLJ-3		Structured log jam	0.08 ac		
		SLJ Subtotal =	**0.21 ac**		
A-1		Permanent access (940 feet)	0.28 ac		
A-2		Temporary access (2,200 feet)	0.90 ac		
A-3		Temporary access (340 feet)	0.20 ac		
A-4		Temporary access (225 feet)	0.12 ac		
A-5		Temporary access (505 feet)	0.15 ac		
		A Subtotal =	**2.65 ac**		
C-1		Contractor use area	0.73 ac		
C-2		Contractor use area[d]	2.13 ac		
C-3		Contractor use area[d]	0.23 ac		
C-4		Contractor use area	0.49 ac		
C-5		Contractor use area[d]	1.20 ac		
C-6		Contractor use area	0.26 ac		
C-7		Contractor use area[d]	6.02 ac		

Activity Area[a]	Map Symbol	Design Feature to be constructed	Activity/ Treatment Area[b]	Excavation (CY)[c]	Fill (CY)[c]
C-8		Contractor use area	0.27 ac		
C-9		Contractor use area	0.17 ac		
C-10[e]		Contractor use area[d]	14.01 ac		
C-11		Contractor use area	0.16 ac		
C-13		Contractor use area	0.12 ac		
		C Subtotal =	**25.78 ac**		
U-2a		Upland (BLM)[d]	4.11 ac		39,500 CY
U-2b		Upland (USFS)[d]	1.05 ac		21,220 CY
		U Subtotal =	**5.16 ac**		**60,720 CY**
X-2		Temporary channel crossing (river)	0.05 ac		10
X-3		Temporary channel crossing (stream)	1.08 ac		150
		X Subtotal =	**1.13 ac**		**160 CY[f]**
		Total =	**45.68 ac**	**71,685 CY**	**71,845 CY**

a IC = in-channel work area; R = riverine work area; U = upland fill area (fill); C = construction staging/contractor use areas; A = access roads; X = temporary river crossing; SLJ = structured log jam.
b Area calculated from geographical information system (GIS) data; ac = acre.
c Provided by TRRP; CY = cubic yard.
d Revegetation after construction
e Contractor use will be limited to areas designated for tree removal
f These crossings would also be used to transport woody materials (logs and/or slash) to activity areas on river left and right.

2.1.11 Construction Methods and Schedule

In general, in-river construction and activities other than revegetation would occur on river right between July 15 and September 1513. On the left bank, work (e.g., staging site preparation) may occur year around. Revegetation activities would primarily occur in the wet months. Excavation, processing of excavated material, and placement of excess material in upland areas would occur during the in-river construction window. Floodplain excavation would occur in summer. The Dutch Creek project is proposed for implementation in summer 2020 but revegetation efforts would not occur until after construction, likely beginning in fall 2020 and continuing through spring 2021. After site construction, maintenance activities (including efforts to maintain/enhance vegetation or riverine habitat diversity (e.g., SLJs or channel topography) may be conducted, as needed, within authorized public land use areas in accordance with the general environmental commitments listed in Appendix E. A detailed discussion of the construction methods and activities is provided in Appendix D.

2.1.12 Environmental Commitments

Reclamation, as the implementing agency for the proposed rehabilitation activities, has committed to implementing the mitigation measures identified in the Master EIR to avoid or minimize potential impacts (refer to MMRP in Master EIR, Table 2, for descriptions of these measures). These measures have been incorporated as design features as defined under NEPA and are considered environmental commitments included in this alternative for purposes of the NEPA analysis. They also serve as

CEQA mitigation measures that will be implemented in accordance with a project-specific mitigation monitoring and reporting program (MMRP, Appendix F). The environmental commitments listed in Table 2-2 are fully described in Appendix E.

Table 2-2. Environmental Commitments

Resource	Commitments
Mineral Resources	EC-MR-1
Fluvial Geomorphology and Soils	EC-GS-1, EC-GS-2
Water Quality	EC-WQ-1, EC-WQ-2, EC-WQ-3, EC-WQ-4, EC- WQ-5
Fishery Resources	EC-FR-1, EC-FR-2, EC-FR-3, EC-FR-4, EC-FR-5
Vegetation, Wildlife, and Wetlands	EC-VW-1, EC-VW-2, EC-VW-3, EC-VW-4, EC-VW-5, EC-VW-6, EC-VW-7, EC-VW-8, EC-VW-9, EC-VW-10
Recreation	EC-RE-1, EC-RE-2
Cultural Resources	EC-CU-1, EC-CU-2
Air Quality	EC-AQ-1, EC-AQ-2, EC-AQ-3, EC-AQ-4
Noise	EC-NO-1, EC-NO-2
Public Services	EC-PS-1, EC-PS-2

2.2 ALTERNATIVE 2

Alternative 2 (no action) represents ongoing activities and operations of the TRRP and other entities involved in restoring the Trinity River with the exception of the proposed action. Under the no action alternative, no rehabilitation activities would be implemented at the Dutch Creek site. Other activities already being implemented in compliance with the 2000 ROD would continue to be implemented. These include:

- Implementation of the annual flow release schedule based on recommendations of the Trinity Management Council (TMC) to Reclamation; and
- Implementation of annual high flow coarse sediment (gravel) augmentation, at designated long-term sites along the Trinity River mainstem, based on recommendations of the TMC to Reclamation; and
- Implementation of watershed restoration and rehabilitation projects at other locations in the Trinity River Basin, including those funded by the TRRP, members of the TMC, BLM, and the Trinity County Resource Conservation District.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER EVALUATION

Two previous designs for project activities were formulated by the TRRP prior to the development of Alternative 1, the modified proposed action described above in section 2.1. These previous designs are considered here as alternatives to Alternative 1. Alternative 3, which was scoped in 2014, was developed to include about 178 acres along approximately 1.5 miles of the Trinity River on lands managed by the BLM and the Forest Service and on adjacent private parcels. The focus of Alternative 3 was to increase the quantity and quality of suitable rearing habitat for native

anadromous salmonids and other native fish species in the Dutch Creek project area, while reestablishing geomorphic processes required to enhance alluvial features in the Trinity River.

In addition to the proposed activities in the mainstem Trinity River (e.g., wetland and pond complex), Alternative 3 also included rehabilitation activities in Dutch Creek, a tributary that provides habitat for anadromous salmonids (see Figure 2 from 2014 Scoping Notice: <https://www.fs.usda.gov/nfs/11558/www/nepa/99948_FSPLT3_2375735.pdf>). This alternative also included recreational improvements on NFS land that could have included a developed boat launch, parking area, and comfort station. In response to comments submitted during the TRRP's scoping process, the TRRP, in consultation with BLM and the Forest Service, determined that this alternative would not be consistent with all program objectives and deferred development of this alternative. The design for Alternative 3 was much larger in scope than the current design and included features on both the upstream and downstream ends that would have impacted cultural resources; in addition, the additional activities considered in Alternative 3 would not clearly be beneficial in meeting the goals of the project as described in Chapter 1. The design was subsequently revised to defer activities in the portion of the Dutch Creek reach downstream of the activity areas illustrated on Figure 2-1 (i.e., Evans Bar) and focus on those where the river is least functional and most in need of rehabilitation.

The TRRP, BLM, and Forest Service issued a revised scoping notice in 2015 for Alternative 4. Alternative 4 proposed to implement only the activities in the downstream half of Alternative 3 and reduced the proposed project area to about 55 acres along a 0.4-mile reach of the mainstem Trinity River (see Figure 2 from 2015 Scoping Notice at <https://www.fs.usda.gov/nfs/11558/www/nepa/99948_FSPLT3_2538313.pdf>). Alternative 4 excluded a number of activities (e.g., in both the Dutch Creek and mainstem Trinity River channels) and would have resulted in changes to the bed and bank of the river in a manner inconsistent with Trinity County's floodplain ordinance. In addition, access limitations (no road to the upper activity areas) and potential impacts to cultural resources (e.g., historic mining features) associated with upland disposal areas considered in Alternative 4 would not clearly be beneficial in meeting the goals of the project as described in Chapter 1. A wide array of scoping comments were submitted, with several of them pointing out potential issues associated with proposed recreational development and potential impacts along the downstream Evans Bar area.

Appendix B provides a comprehensive summary of the comments related to alternatives 3 and 4 and documents the approach used by the Forest Service to consider them in this EA.

Ultimately, refinement of design information, detailed hydraulic studies, public comments, and existing resource conditions all played into the determination that neither alternative 3 nor 4 would be considered in this EA.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION TO THE ANALYSIS

This chapter describes the affected environment at the Dutch Creek rehabilitation site and analyzes the potential environmental impacts associated with implementing Alternative 1 as described in Chapter 2 and Appendix D. The analysis includes a discussion of Alternative 1 (modified proposed action) and Alternative 2 (no action). The analysis for each resource area includes discussions of the existing environmental setting, applicable significance criteria, potential environmental impacts, and project design features (e.g., environmental commitments).

A number of design features have been developed and incorporated into Alternative 1 to reduce or eliminate adverse effects. Table 2-2 lists the environmental commitments that have been incorporated into the modified proposed action to lessen impacts to various resources. Appendix E provides a comprehensive discussion of these commitments; in most cases, these commitments are equivalent to the CEQA mitigation measures described in Appendix F. This approach is consistent with guidance issued by the Council on Environmental Quality (CEQ) for federal agencies in implementing, monitoring, and evaluating environmental commitments identified in EAs completed for compliance with NEPA. Throughout this chapter, these environmental commitments are identified with a unique label (e.g., (EC-CU-1)).

There is a clear distinction between NEPA and CEQA with respect to mitigation measures. No new CEQA mitigation measures were identified for the resource topics addressed in this chapter; the environmental commitments listed in Table 2-2 and fully described in Appendix E have been incorporated into Alternative 1 to ensure that there are no significant impacts as defined under CEQA. An alphanumeric coding system that corresponds to the CEQA mitigation measures found in Appendix A of the Master EIR/Programmatic EA is used to identify each CEQA mitigation measure incorporated into the modified proposed action as an environmental commitment pursuant to NEPA. Where a NEPA environmental commitment corresponds to a referenced CEQA mitigation measure as described in the Mitigation Monitoring and Reporting Program (MMRP) (Appendix A of the Master EIR), it is cross referenced in table 3-8, for example (EC-CU-1 [4.10-2a]).

Table 3-1 identifies resource topics consistent with CEQA appendix F environmental factors and how they are considered in this document. It also identifies the key issues identified during pre-project scoping and the corresponding resource topics considered in this EA/IS. Resource topics eliminated from further consideration due to the resource not being present or the issue not being a concern at this rehabilitation site are also listed in this table.

Table 3-1. Summary of Resource Topics Considered or Eliminated from Further Consideration in This EA/IS

Resource Topic	Analyzed in the EA/IS?	Comments[a]
Visual Resources/ Aesthetics	Yes	Temporary and long-term changes to visual resources or aesthetics are addressed. Scenic resources associated with scenic highways are not present. Light and glare were addressed in the Master EIR, and no issues were identified.

Resource Topic	Analyzed in the EA/IS?	Comments[a]
Agricultural Resources	No	Agricultural lands (e.g., timber production lands) and uses are not present.
Air Quality	Yes	Temporary construction-related emissions and dust are addressed. No long-term air quality impacts, including greenhouse gas contributions, are expected.
Cultural Resources	Yes	Impacts on tribal cultural resources, archeological resources, and historic properties/historical resources are addressed. The alluvial nature of the geology of the project area is not conducive to the occurrence of paleontological resources.
Environmental Justice	No	The modified proposed action would not disproportionately affect low-income or minority populations because these populations do not exist in the project area.
Fishery Resources	Yes	Impacts on aquatic habitat and special-status fish are addressed. *Proposed project elements would affect anadromous fish habitat and populations. Vehicular river crossings would create water quality issues, affect fish habitat, and increase the potential for a spill of hazardous materials into the river.[b] Proposed project elements could affect habitat for mussels.*
Forestry Resources	Yes	Forestry resources are addressed. This topic is covered in the Vegetation, Wildlife, and Wetlands section.
Geology and Geologic Hazards	No	Unique geological resources are not present. Geologic hazards were addressed in the Master EIR, and no issues were identified.
Geomorphology and Soils	Yes	Soil disturbance, erosion potential, changes to the geomorphology of the river, and disposal of excavated materials are addressed in this section.
Greenhouse Gases	Yes	Greenhouse gas emissions are addressed in the Air Quality section.
Hazardous Materials	No	Hazardous materials were addressed in the Master EIR, and no issues associated with hazardous materials sites were identified. Use of hazardous materials during construction activities is addressed in the Soils, Fishery Resources, Wildlife, and Water Quality sections.
Hydrology and Flooding	Yes	Changes to hydrology of the river and floodplain effects are addressed.
Indian Trust Assets	Yes	Impacts on Indian Trust Assets associated with uses of the river and its resources are addressed. This topic is covered in the Cultural Resources section.
Indian Sacred Sites	No	No Indian sacred sites have been identified in or in close proximity to the project area. Cultural resource environmental commitments cover potential discoveries.
Land Use	Yes	Consistency with federal agency resource management plans is addressed. Consistency with the Trinity County General Plan is also addressed. *Proposed project elements may be temporally and/or spatially inconsistent with the Aquatic Conservation Strategy objectives.*
Mineral Resources	Yes	Impacts on recreational mining and from use of mineral resources are addressed. These topics are addressed in the Recreation, Geomorphology, and Soils sections.
Noise	Yes	Increased noise during construction activities is addressed in the Noise section.

Resource Topic	Analyzed in the EA/IS?	Comments[a]
Population and Housing	No	No populations or housing would be affected; activity areas were configured to avoid recreational residences.
Public Health and Safety	No	Hazards to the public were addressed in the Master EIR, and no issues were identified. Indirect public health or safety concerns are addressed in the Air Quality, Noise, Recreation, and Transportation and Traffic sections.
Public Services	No	Public services were addressed in the Master EIR, and no issues associated with the increased demand for or disruption of public services were identified. Access-related issues are addressed in the Transportation and Traffic sections.
Recreation	Yes	Potential disruptions to recreational uses are addressed.
Socioeconomics	No	Socioeconomics were addressed in the Master EIR in the Population and Housing section, and no issues were identified.
Transportation and Traffic	Yes	Increased traffic and access-related issues are addressed.
Tribal Cultural Resources	Yes	Tribal cultural resources are addressed in the Cultural Resources section.
Utilities and Energy	No	Utilities and energy were addressed in the Master EIR, and no issues were identified.
Vegetation, Wildlife, and Wetlands	Yes	Vegetation removal, disturbance to wildlife, and modifications of wetlands are addressed. *Proposed project elements could alter amphibian and reptile habitat and impact resident species. Proposed project elements could affect northern spotted owl habitat and individuals. Restoration activities have the potential to introduce noxious weeds into the area.*
Water Quality	Yes	Temporary and long-term water quality impacts are addressed. *Proposed project elements could impact water quality.*
Wild and Scenic Rivers	Yes	The recreation and aesthetic values of the Trinity River are addressed. *Proposed project elements could impact visual quality, Wild and Scenic River characteristics, and recreational activities.*

Notes:
a. Forest Service Key Issues are presented in italics.
b. Also applies to Hazardous Materials and Water Quality

3.2 LAND USE

3.2.1 Affected Environment

The project area encompasses both federal and private lands. About 32 acres (21 percent) are managed by BLM and approximately 48 acres (30 percent) are managed by the Forest Service. Portions of nine private parcels encompass approximately 75 acres (49 percent) in the northern portion of the project area on river right. Some of the private parcels consist of large-lot rural residential uses surrounded by open space on adjacent private properties and lands managed by BLM, and NFS lands. The private parcels in the project area are designated by Trinity County as Agricultural Forest (aka timber production) with a 20-acre minimum lot size (AF20), and those

portions of the parcels in the 100-year floodplain of the Trinity River have an overlay designation of Scenic Conservation. Land uses on private lands are guided by the Trinity County General Plan and Junction City Community Plan. BLM and NFS lands are used primarily for recreational activities associated with the Trinity River; public vehicle access to the river is limited to several Forest Service motorized trails (10W16, 10W16a) via Evans Bar Road (Activity Area A-1) located on river left. Boats and rafts provide access to both NFS and BLM lands along both sides of the river through the project area. Historic use of the land included mining, and dredge tailings are present along the river corridor. The proposed temporary construction access route on river right (A-2) would lead from the private parcels located in activity area C-10 to the upstream activity areas on river right (e.g., C-6, X-2). Access route A-2 is located on NFS lands; this route would provide temporary access to most of the activity areas and would not be available for public access.

Lands managed by BLM are administered in accordance with its 1993 Redding Resource Management Plan (RMP), as amended. The RMP discusses the general condition of natural resources in the plan area and prescribes appropriate land use management for BLM lands. BLM lands in the project area are allocated as “Other” in the RMP; however, the RMP was amended by the Northwest Forest Plan in 1995 to include new land allocations (e.g., Riparian Reserves) and established requirements for compliance with the Aquatic Conservation Strategy (ACS) and other Standards and Guidelines to protect habitat for the northern spotted owl (*Strix occidentalis caurina*). A key component of the amendment to the RMP was establishment of Riparian Reserves along rivers and streams to protect aquatic resources. Virtually all of the project area on BLM and NFS lands is considered Riparian Reserves and is subject to the ACS; private lands are not included in this land allocation. Also, the Trinity River from Lewiston Dam to Weitchpec is federally designated as a Wild and Scenic River for its recreational values. BLM is the federal river manager from Lewiston Dam to the North Fork Trinity River.

The STNF manages NFS lands under its LRMP. The LRMP is based on three broad management strategies: preservation, biodiversity, and sustainable development for people. Resources are categorized by type (such as air resources, fisheries, lands, etc.) and assigned management goals, standards, and guidelines for each of the six land use categories (Congressionally Reserved Areas, Late Successional Reserves, Administratively Withdrawn Areas, Riparian Reserves, Matrix, and Adaptive Management Areas). The LRMP requires that land uses be managed consistent with the standards and guidelines. The ACS and other elements of the Northwest Forest Plan are applicable to all BLM and NFS lands in the project area.

3.2.2 Environmental Consequences

Alternative 1

The proposed rehabilitation activities would not change the uses of the project area lands nor require changes to land use allocations or zoning designations. Temporary disruptions to nearby property owners and recreationists using the river and adjacent land near the project area could occur during the rehabilitation activities (i.e., 3 to 6 months for construction and up to 5 years for revegetation efforts), but no long-term impacts are anticipated and use of the land in the project area would be the same as under current conditions. Recreation-related impacts are discussed in section 3.3, Recreation, and access-related impacts are discussed in section 3.6, Transportation and Circulation. The restored floodplain and habitats would enhance the area for recreationists and would maintain open space and scenic views near the private residences.

Based on the nature of the rehabilitation activities, Alternative 1 would be consistent with current uses and zoning of the project area, as defined by BLM, the Forest Service, and Trinity County. BLM's RMP describes various objectives for resource conditions applicable to federal lands in the project area, and the rehabilitation activities would help BLM achieve these objectives for the Trinity River. Alternative 1 would also help the Forest Service and the BLM ensure compliance with the LRMP and RMP, respectively, and meet Riparian Reserve Standards and Guidelines. Additional details concerning the consistency of the TRRP activities with the Redding RMP and the STNF LRMP are presented in Appendices G (ACS), H (Survey and Manage Species), and I (Wild and Scenic Rivers).

Alternative 1 was developed to be consistent with the BLM RMP, the STNF LRMP, and the Trinity County General Plan. Therefore, CEQA-specific impacts considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Alternative 2

Under Alternative 2, land uses in the project area are expected to remain similar to existing uses. Therefore, there would be no impacts to land use as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.3 RECREATION

3.3.1 Affected Environment

The project area encompasses both federally managed and privately-owned land. The primary use of BLM and NFS lands in the project area is associated with various types of recreational activities. Homes on private lands within the project area are used seasonally for various recreation purposes (e.g., fishing).

The Trinity River provides year-round recreational opportunities, including boating, kayaking, canoeing, rafting, inner tubing, fishing, swimming, camping, gold panning, wildlife viewing, picnicking, hiking, and sightseeing. Fishing for Chinook salmon, steelhead, and rainbow and brown trout is a major recreational activity on the Trinity River throughout the year but is more prevalent between April and December.

BLM and the Forest Service issue up to 100 permits for commercial fishing guides along this reach of river. The Forest Service also issues 13 rafting permits for the river although most rafting occurs downstream of the project area. Visitor use in the project area is generally light throughout the year, with an occasional bank fisherman, drift boat, or raft transiting the area.

There are no campgrounds or other formal recreational sites in the project area, and public access to BLM and NFS lands in the project area is limited on river right due to the pattern of private ownership in and adjacent to the project area as well as the lack of a bridge or ford. Activity area A-1 (Evans Bar Road[17]) continues on as Forest Service motorized trail 10W16 where it enters NFS lands. This route provides public access for motorized vehicles to Forest Service motorized trail 10W16A

[17] Evans Bar Road is part of Trinity County road system.

where it terminates on the left bank of the Trinity River. This route provides public access to the Trinity River, primarily for boaters and anglers.

3.3.2 Environmental Consequences

Alternative 1

Alternative 1 would require construction in the active river channel, the floodplain, and adjacent upland areas, as described in Chapter 2. Construction activities could result in temporary disruptions to public access along Forest Service motorized trail 10W16 and 16A and to private residences in activity area C-10. However, river access and recreational opportunities would continue to be available at other locations along the river downstream (e.g., Evans Bar, Sky Ranch). Furthermore, the project was designed to preserve the "Last Hole on the Left" adult salmon holding spot that occurs in the reach (see Appendix D, Figure D-1). Because disruptions to recreational activities in the project area would be temporary, this impact would be less than significant.

Flows that typically contribute to good fishing tend to be clear; increases in turbidity as a result of this alternative may affect the recreational experience of anglers and the aesthetic values held by other recreationists. Increased turbidity and suspended solids levels would adversely affect water quality (refer to discussion in section 4.8, Recreation, of the Master EIR) and could adversely affect aesthetic resources. Four environmental commitments developed to reduce water quality impacts are listed in Table 2-2 and fully described in Appendix E these environmental commitments have been integrated into this alternative in order to reduce the impacts of increased turbidity levels on recreational users. These commitments are EC-WQ-1 [4.5-1a-1e], EC-WQ-2 [4.5-2a-2c], EC-WQ-3 [4.5-3a-3c], and EC-WQ-4 [4.5-1e].

Implementation of Alternative 1 could increase turbidity and total suspended solids in the Trinity River for some distance downstream during construction activities. The level of the increase would be largely dependent on the flow regime at the time of construction. Water quality objectives for the Trinity River specifically prohibit the discharge of any materials into the river that could cause a nuisance or adversely affect beneficial uses such as recreation. The extent of downstream sedimentation would be a function of instream flow velocity and particle size. For example, fine-grained sediments like silts and clays could be carried several thousand feet downstream of the project area, while larger-sized sediments like sands and gravels would tend to drop out of the water column within several feet of the construction limit.

Temporary construction activities associated with this alternative could pose a physical hazard to recreational users of the river and cause short-term resource damage to lands used for recreational activities in and adjacent to the project area (e.g., A-1, C-7). Potential physical hazards to recreationists include the presence of temporary river crossings, operation of construction equipment and vehicles in and around the rehabilitation site, changes in the river's subsurface movement as a result of the in-channel addition or removal of gravel, the addition of wood into the channel, and an increased potential for a hazardous materials spill (e.g., diesel and hydraulic fluid) from construction equipment and vehicles operating in and adjacent to the river. The potential for hazardous material spills and unstable riverbanks and/or uplands resulting from excavation, material addition, road creation, and vegetation removal could also result in a hazard to recreational users. During project implementation, public access in the construction area would be limited; access to residences in activity area C-10 would be provided in close coordination with TRRP staff and TRRP's construction contractor. Public access points above (Lorenz Gulch) and below (Evans Bar) the

project area would be available to recreationists and the general public throughout the construction period.

An environmental commitment listed in Table 2-5 (EC-RE-1 [4.8-1a]) and described in Appendix D requires Reclamation to prepare and post precautionary signage and public notification warning of in-river construction in order to reduce the hazards to recreational users that would be associated with in-river construction activities. This approach has worked well for previous TRRP projects and has been particularly effective in reducing impacts on in-water recreational activities such as boating and fishing over the past 10 years.[18]

After construction is completed, the activity areas would be evaluated by Reclamation in conjunction with land managers and owners to identify specific prescriptions required to minimize any further potential safety risks to recreational users and to ensure the avoidance of any further project effects to resources occurring on recreational lands in the project boundaries.

With the inclusion of CEQA mitigation measures EC-WQ-1 [4.5-1a-1e], EC-WQ-2 [4.5-2a – 2c], EC-WQ-3 [4.5-3a-3c], EC-WQ-4 [4.5-1e], and EC-RE-1 [4.8-1a] described in this section, impacts under CEQA considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Alternative 2

Under Alternative 2, recreational resources and uses in the project area are expected to remain similar to existing conditions. Therefore, there would be no impacts to recreational resources or disruption of uses as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.4 VISUAL RESOURCES/AESTHETICS

3.4.1 Affected Environment

The Trinity River is considered an important aesthetic and visual resource for residents of Trinity County and visitors to the area. The river is an integral component of the communities and residential areas throughout the county. Residents and visitors actively use the river for recreation, both on and adjacent to the river. The river also offers a variety of landscapes, many of which are incorporated into the rural residential lifestyle of Trinity County.

This section describes the scenic values and visual resources that are known to occur in the project area. BLM is responsible for managing its lands for multiple uses while ensuring that the scenic values and open space characteristics of these lands are considered before authorizing actions on these lands. BLM accomplishes these responsibilities through its Visual Resource Management (VRM) system. The VRM system classifies land based on visual appeal, public concern for scenic quality, and visibility from travel routes or observation points. VRM classes are used to identify the degree of acceptable visual change in a landscape based on its physical and sociological characteristics. Classes I and II are the most valued, Class III represents a moderate value, and Class

[18] Section 3.14 (Wild and Scenic Rivers) and Appendix J provides additional information on potential impacts on fishing and other water-based recreation.

IV is of the least value. Alternative 1 would affect BLM lands in the project area with the VRM Class Objective of II (BLM 1993).

BLM Manual 8431, Visual Resource Contrast Rating, provides the following management objectives for VRM Class II (BLM 1986):

> *Class II Objective: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.*

The Forest Service manages NFS land in the project area consistent with the STNF LRMP. Specifically, the LRMP standards and guidelines for visual resources state that activities and projects should be managed to meet Visual Quality Objectives (VQOs) (Shasta-Trinity National Forest 1995). The VQOs are as follows:

- Preservation;
- Retention;
- Partial retention;
- Modification; or
- Maximum modification
- The VQO for NFS lands in the project area is Partial Retention.

Due to the lack of sensitive receptors, remote setting, and limited public access, key observations points were not developed for this project. Other than seasonal access by residents who cross the river from a parking area in activity areas C-7, C-8 and C-9, the only public viewpoints of the project area are associated with floating on the river and with activity area A-1, which follows the route of Forest Service motorized trail 10W16. This route is a single-lane trail that is overgrown with brush and is not visible from the river or residential developments along Evans Bar or Dutch Creek roads.

On river left, Dutch Creek Road parallels the project boundary, but is about a quarter mile south of and about 300 hundred feet in elevation above the project area. Evans Bar Road intersects Dutch Creek Road approximately 0.25 mile west of activity area A-1. Several residences are located along Dutch Creek Road and Evans Bar Road; however, these residences are screened by vegetation and topographic features, and none are in the viewshed of the project area. From the river itself, portions of most activity areas can be viewed by boaters and those wading in the river from various locations in the project area. Due to the nature of the tailing deposits and extensive riparian vegetation, views from the river are limited other than from directly up or down the river corridor.

Because of the rural nature of the Trinity River corridor, the primary sources of artificial light in or adjacent to the project area are limited to vehicle headlights on Forest Service motorized trails 10W16 and 10W16A, and, occasionally, lights used by residents in activity area C-10. Glare may occur during the daylight hours as sun is reflected off vehicles and equipment temporarily operating or parked in activity areas or off the water or light-colored alluvium associated with floodplain and terrace features.

3.4.2 Environmental Consequences

Alternative 1

The potential impacts of this alternative would include changes brought about by the removal of vegetation, construction of inundated surfaces and in-channel features, construction of or improvement of access routes, increases to the width of the existing access route (A-1), creation and use of staging and gravel processing areas, wood placement, and use of upland areas for construction spoils. These various activities, once completed, are intended to restore the form and function of an alluvial river, thereby enhancing the overall aesthetic values and visual resources associated with the Trinity River and the surrounding landscape. Furthermore, to conform with agency visual resource guidance, wood placement and SLJ construction would emphasize the appearance of naturally occurring wood along wild rivers. The adverse impacts are expected to be temporary. The long-term outcome should improve the visual diversity of the corridor, and the short-term (i.e., 1-5 years) impacts would diminish over time.

Activities associated with this alternative are intended to be not only functional (e.g., to enhance fisheries and restore river meanders), but also to complement the aesthetic values and visual resources associated with the rehabilitation site. Overall, this alternative incorporates the project area's diversity of landscapes and vegetation types to define the location, character, and magnitude of the rehabilitation activities at the site. For example, materials excavated from riverine areas would be removed to upland areas or used as a source of coarse sediment to enhance the alluvial function of the river. Material transported to upland activity areas would be placed in a manner that blends the materials into the contours of the topography. Retention of existing vegetation at key locations (e.g., activity areas U-2a, C-2) to screen upland and staging activities would lessen the degree of visual impact.

The activities described in Chapter 2 provide a framework for reestablishing the physical processes necessary to enhance the alluvial attributes and complexity of the river channel and floodplain over time, particularly those attributes that are flow dependent. Over time, this alternative would produce gradual, ever-improving changes in the aesthetic quality of this reach of the Trinity River while maintaining the character of the surrounding land uses.

Under Alternative 1, sensitive receptors that could be exposed to changes in the visual character of the Trinity River and the adjacent corridor as a result of construction and revegetation activities would be limited in terms of number of viewers and the limited timeframe of activities. Because of the nature of the project, the rehabilitation activities would not result in degradation or obstruction of a scenic view. While some increase in the level of artificial light or glare would occur during the construction activities, this impact would be limited in both time and intensity. Therefore, there would be no impacts to aesthetic resources as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

Alternative 2

Under Alternative 2, there would be no degradation or obstruction of a scenic view as a result of construction because the project would not be implemented. The level of artificial light or glare would be similar to the existing condition. Therefore, there would be no impacts to aesthetic resources as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.5 CULTURAL RESOURCES

Cultural resources is a broad term that includes prehistoric, historic, archaeological, and tribal cultural resources. The NHPA is the primary federal legislation addressing the federal government's responsibility related to cultural resources. Title 54 U.S.C § 306108, commonly known as Section 106 of the NHPA, requires the federal government to take into consideration the effects of an undertaking on any historic property, i.e., cultural resources listed on or eligible for inclusion in the NRHP.

The proposed action requires compliance with Section 106. Pursuant to 36 CFR § 800.2(a)(2), if more than one federal agency is involved in an undertaking, the agencies may designate a lead federal agency to act on their behalf to fulfill their collective responsibilities under Section 106. Both BLM and USFS have designated Reclamation as the lead federal agency for the Section 106 process for this proposed project.

Assembly Bill 52 (AB52) was approved by the Governor of California in September of 2014. AB 52 requirements apply to projects with a notice of preparation or a notice of negative declaration or mitigated negative declaration filed on or after July 1, 2015. Therefore, the requirements of AB 52 did not apply to the preparation and adoption of the 2009 Master EIR prepared for the TRRP. However, implementation of the Section 106 process of the NHPA ensures that tribal cultural resources were considered and incorporated into the Master EIR, which is incorporated by reference into this EA/IS. In fact, the MMRP for the Master EIR (Appendix F) adopted by the Regional Water Board includes measures consistent with the protection of tribal cultural resources, including tribal consultation, resource evaluations, and avoidance, minimization and other specific mitigation as necessary at the site-scale.

Background research used to develop this section included a review of the files at the Northeast Center of the California Historical Resources Information System and the files of the BLM's Redding Field Office applicable to the area of potential effect (APE)[19] delineated by Reclamation and BLM. Previously produced archaeological and historical literature pertinent to the general location was given special attention. The current list of contacts from the Native American Heritage Commission (NAHC) was consulted, and initial contacts were made. Other local individuals representing tribes collaborated in the investigation. The Trinity County Historical Society and archaeologists with the STNF and the BLM's Redding Field Office were also consulted.

This background research concluded that several previous cultural resources surveys covered portions of the current project area (Rich et al. 2018). These surveys resulted in the identification of several placer mines whose boundaries coincide with the current project boundary.

3.5.1 Affected Environment

Archaeological research indicates people have been living in this general part of Trinity County for at least 7,000 years (Fitzgerald and Hildebrandt 2002). The prehistory of the Trinity River area has received considerable study in conjunction with various BLM, Reclamation, and U.S. Forest Service projects conducted throughout the watershed, largely as the result of archaeological field work accomplished in preparation for reservoir construction in the river valleys, TRRP restoration projects, and on BLM and U.S. Forest Service projects. Additional information on the cultural resources,

[19] The APE includes the project boundary illustrated on Figure 2-1.

Native American communities, and mining history of the Trinity River watershed is provided in section 4.10.1 of the 2009 Master EIR.

Within the area of potential effects (APE), cultural resource surveys identified three historic-era cultural resources, consisting of two mining sites (Evans Bar Mine and Lang Junkans Mine) and one road route. The two mining sites are delineated by their historic mine claim boundaries, and the project will not affect associated features for either. The historic road route likely connected the various mines in the area and will be crossed perpendicular to its running line at a point where it is merely the assumed road route but exhibits no physical evidence of an actual road.

Pursuant to 36 CFR § 800, Reclamation, as lead federal agency for Section 106 of the NHPA, must complete the identification and evaluation process through consultation with federal tribes and interested parties, evaluate resources for their eligibility for the NRHP, and, as necessary, assess adverse effects and make a determination. The Section 106 process was completed on July 17, 2019, when the SHPO concurred with Reclamation's determination that there would be no adverse effect to historic properties from project implementation.

3.5.2 Environmental Consequences

Alternative 1

Under Alternative 1, the Section 106 process would be followed. Pursuant to 36 CFR § 800, documented resources within the APE would be evaluated for eligibility for the NRHP through the consultation process. For any resources found eligible for listing on the NRHP, an assessment of effects would be made and, if necessary, adverse effects resolved. The Section 106 process would be completed prior to signing of the FONSI. To ensure the integrity of onsite cultural resources both a tribal and archaeological monitor would be utilized during periods of project implementation.

Alternative 2

Under Alternative 2, the condition of cultural resources would remain similar to existing conditions. There would be no undertaking as defined in 36 CFR§ 800.16(y) and, therefore, no potential effects on historic properties. Furthermore, there would be no impacts to cultural resources as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.6 TRANSPORTATION AND CIRCULATION

3.6.1 Affected Environment

The transportation network in the vicinity of the project area is typical of a rural environment, with low traffic and little development. State Route (SR) 299 is the main highway in the region and is a designated truck route between the Sacramento Valley and the coastal communities of northern California. The highway goes through Junction City, approximately 5 miles north of the project area. Traffic counts along SR 299 between Weaverville, northeast of the project area, and Big Flat Camp, approximately 8 miles west of Junction City, were between 2,000 and 3,450 average annual daily trips in 2016 (Caltrans <http://www.dot.ca.gov/trafficops/census/volumes2016/Route280-405.html >).

Evans Bar Road and Forest Service motorized trails 10W16 and 10W16A provide primary access to the project area via Dutch Creek Road. Dutch Creek Road intersects with SR 299 at Junction City. Evans Bar dates back to 1849 as one of the first areas in Trinity County to be mined. Evans Bar Road

and Dutch Creek Road are part of the County road system, and Dutch Creek Road is considered a scenic county roadway. Both Dutch Creek Road and Evans Bar Road are narrow, two-lane paved roads that are maintained by Trinity County; Evans Bar Road turns into an unpaved motorized trail after the last residential driveway. A traffic count on Dutch Creek Road approximately 3.5 miles north of the Evans Bar Road intersection indicates a daily average of approximately 200 trips.

Based on the few numbers of residences accessed via Evans Bar Road, it is estimated that traffic counts along this road equal approximately 50 trips on a daily basis. Primary travelers along local roads near the project area are residents and property owners, with occasional recreationists, agency staff, or other users visiting the area. Evans Bar Road provides motorized access to the project area and enters the project area on NFS lands. Access to private residences on river right is via small boats and rafts. Evans Bar Road and Forest Service motorized trails 10W16 and 10W16A are the only motorized access routes into the project area. Access to the upstream portion of activity area C-7 would be controlled within the project area during construction using temporary fencing and gate(s) to secure the contractor's yard and temporary river crossing X-3. Temporary access and parking areas will be identified by the Forest Service to ensure residents and visitors have reasonable access to private property on river right.

3.6.2 Environmental Consequences

Alternative 1

Under Alternative 1, construction equipment and vehicles would temporarily increase traffic on local roads around the project area, primarily Dutch Creek Road and Evans Bar Road, and on SR 299, which provides access to the area from local communities. Construction equipment (e.g., large trucks, excavators, and backhoes) would be mobilized to the project area prior to the rehabilitation activities and would be removed upon completion of these activities to minimize the number of daily trips, in accordance with the environmental commitments outlined in Table 2-2 (i.e., EC-TC-2 [4.16-2a, 4.16-5a]) and fully described in Appendix E During construction, 20 to 30 workers and their vehicles would access the project area daily. SR 299 is a designated truck route that was built to withstand occasional use by heavy equipment and has a moderate volume of existing traffic. The temporary use of SR 299 for access to the project area during rehabilitation activities would not change its existing level of service or average traffic volumes and would not affect roadway conditions. In addition, trucks carrying heavy equipment and materials would operate within the legal weight limits, as determined by the state.

The temporary use of Dutch Creek Road and Evans Bar Road and temporary access routes A-1 through A-5 during rehabilitation activities could delay or restrict recreational and residential access to the river or private lands, but no road closures would be required. Traffic control measures would be implemented to alert travelers in advance to the rehabilitation activities and minimize conflicts during the activities, in accordance with the environmental commitments listed in Table 2-2 (EC-TC-1 and EC-TC-4 [4.16-2a, 4.16-5a]). Access to adjacent private properties would be maintained throughout the construction period, in accordance with environmental commitment EC-TC-2; however, access to the project area would be restricted to project traffic based on individual agreements with land owners and would not be available to the public during construction; Public access to activity areas C-7, C-8 and C-9 would be provided at times when construction is not occurring (e.g., Sundays). Passage for emergency vehicles would not be restricted, and the temporary fords and access routes (e.g., A-2) in the project area would aid in emergency access, if needed, during construction. In addition, several public access points to the river for recreationists would be

available upstream (e.g., Lorenz Gulch) and downstream (e.g., Evans Bar) of the project area throughout the construction period.

The use of local roads by trucks and heavy equipment could degrade roadway conditions due to increased wear and tear and require road restoration once the rehabilitation activities are complete. In accordance with environmental commitment EC-TC-3 [4.16-4a], Reclamation would survey the road conditions before the rehabilitation activities and assess the degree of post -construction restoration that may be needed. Dutch Creek Road and Evans Bar Road may require some degree of grading and/or resurfacing to restore them to pre-disturbance conditions, and Reclamation would coordinate with the County to ensure that the roads are in acceptable condition after the rehabilitation activities. After construction of the project is completed, temporary access routes A-2, A-3, A-4, and A-5 would be restored to preconstruction conditions. Forest Service motorized trails 10W16 and 10W16A would be reestablished concurrent with the rehabilitation of activity areas A-1, C-7, C-8, and C-9, consistent with Forest Service requirements.

Post-construction activities (i.e., revegetation, maintenance, and monitoring) would require intermittent access by TRRP staff and consultants for 3 to 5 years and occasional access for construction equipment in the event that implementation of adaptive management measures is required to ensure success of the rehabilitation activities. This traffic would be minimal and would not affect local traffic volumes or roadway conditions.

With the inclusion of CEQA mitigation measures EC-TC-2 [4.16-2a, 4.16-5a] and EC-TC-3 [4.16-4a], impacts under CEQA on traffic and transportation would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Alternative 2

Under Alternative 2, traffic conditions and traffic circulation would remain similar to existing conditions. Therefore, there would be no impacts to traffic conditions as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.7 AIR QUALITY

3.7.1 Affected Environment

Trinity County’s air quality is generally good. Low population densities limited industrial and agricultural operations, and minimal traffic congestion contribute to the good air quality. Ambient air quality data are available from the Weaverville air monitoring station, which is located approximately 6 miles from the project area. Air quality data from this station may not be a precise representation of ambient air quality in the project area but it does provide a good indication of air quality in the general vicinity. Locally, air quality and contributions of greenhouse gases (GHG) to the atmosphere along the Trinity River corridor is influenced by topographic features, microclimate, and pollutants such as road dust and smoke from wildfires in the summer and wood stoves/fireplaces during cold weather (i.e., particulate matter [PM] 10 microns or less [PM 10] and particulate matter 2.5 microns or less [PM 2.5]).

Sensitive receptors consist of human populations, particularly children, seniors, and individuals with health risks, located where there is a reasonable expectation of human exposure to pollutants. The project area is not located near a school, hospital, senior housing, or other facilities where

concentrations of sensitive receptors may be located. There are a number of residential properties within or adjacent to the project area that would be exposed to temporary changes in air quality. Evans Bar Road serves several residences located north of the project area on river left. The northern portion of the road is paved for approximately one-half mile in this rural residential area and is unpaved until it terminates at the Evans Bar boat launch area. Both the dirt portion of Evans Bar Road and other native surface routes outside the project area periodically serve as a source of road dust (i.e., PM).

Operation of heavy equipment on private parcels within and adjacent to the project area occurs periodically and is a source of vehicle emissions. Both the burning of wood and other vegetation and the operation of heavy equipment periodically contributes to a localized increase in pollutants such as PM and GHG. Recurring wildfires throughout the Trinity River watershed periodically result in smoke and ash that drastically increases the PM levels within and adjacent to the project area.

3.7.2 Environmental Consequences

Alternative 1

Rehabilitation activities associated with Alternative 1 would require excavation, grading, disposal of earthen materials, and the use of vehicles and heavy equipment on unpaved roads and access routes, all of which would generate fugitive dust in the project area. Fugitive dust emissions would also result from activities associated with vegetation removal and gravel injection.

Transportation and construction activity associated with project implementation would generate GHG emissions from diesel- and gasoline-powered vehicles and equipment. An environmental commitment listed in Table 2-2 (EC AQ-1 [4.11-a-1a], [4.11-2a] is incorporated into this alternative in order to reduce the impacts to air quality and GHGs. Additionally, the following measures would be used to enhance the awareness of global climate change in conjunction with this alternative:

- Provide project contractors with educational material about fuel efficiency and incentives;
- Promote incentives for contractors to initiate ride-sharing programs;
- Promote the use of energy-efficient and alternative fuel construction equipment and transportation fleets through contract incentives;
- Require contractors to provide recycling bins for onsite waste materials;
- Provide incentives for contractors to use re-usable water containers rather than plastic bottled water;
- Provide incentives for contractors to hire locally; and
- Require reusable batteries for equipment that can use them.

In order to determine the significance of the impact of this alternative on GHGs, a “carbon foot-print” was developed based on the potential generation of GHGs (primarily carbon dioxide [CO_2]) from project activities. Project activities that would offset potential impacts were considered in this calculation. The analysis indicated that this alternative would produce approximately 5,221.3 pounds of CO_2 per day over the course of an 80-day construction period. Total GHG emissions resulting from this alternative is estimated to be 194.2 metric tons of CO_2.

Based on those calculations, GHG emissions associated with the use of heavy equipment would be measurable over the course of the project under this alternative; however, GHG emissions and any effects on global climate change would not be cumulatively significant considering the amount of GHG emissions generated by this alternative in the context of current local air quality conditions. As a result, this alternative represents a much smaller action than that analyzed in the Trinity River Master EIR. Additionally, project activities are expected to result in opportunities to increase the amount of riparian and upland vegetation, particularly with the rehabilitation and revegetation of dredge tailing deposits[20].

High levels of PM in Trinity County generally coincide with regional wildland fire events during the dry summer months and with localized woodstove use and brush burning activities during periods of cool, wet weather. Fugitive dust resulting from project activities would occur during the dry summer and early fall months, when PM levels may be elevated by wood stove use, brush burning, or wildland fires. This alternative would increase the PM levels to varying degrees, depending on the type and extent of construction activity. Dust control measures will be used to reduce project-related impacts. Once rehabilitation activities have been completed, project impacts on air quality from fugitive dust would cease.

Diesel- and gasoline-powered equipment and vehicles used in project construction could also contribute to air pollution. Diesel particulate is an identified hazardous air pollutant and toxic air contaminant. As with PM, measures will be implemented to reduce project-related impacts from the use of the diesel- and gasoline-powered equipment and vehicles. Once rehabilitation activities have been completed, project impacts on air quality from fugitive dust and vehicle emissions would cease.

Due to the high fire hazard and history of equipment-caused fires in Trinity County, construction contractors would be required to follow BLM's and the Forest Service's applicable regulations as well as California Public Resource Code 4428-4442 during dry periods to minimize the potential for the initiation and spread of fires from the work site. Compliance with these federal and state requirements would reduce the potential for emissions due to a wildland fire.

This alternative would include vegetation removal. All vegetative material not used in the construction of SLJ and WP features would be incorporated into or on the floodplain or placed in upland areas to enhance growing conditions and reduce erosion potential. All areas not subject to inundation would be revegetated with native riparian and upland plant and tree species.

With the inclusion of CEQA mitigation measures EC AQ-1 [4.11-a-1a], [4.11-2a] and EC AQ-4 described in this section, impacts under CEQA on air quality would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Alternative 2

Under Alternative 2, air quality conditions would remain similar to existing conditions. Therefore, there would be no impacts to air quality as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

[20] The Road Construction Emissions Model Version 8.1.0 was used to calculate GHG emissions for combustible fuel (Sacramento Metropolitan Air Quality Management District 2016) and the Construction Carbon Calculator was used to calculate GHG emissions from vegetation loss (Build Carbon Neutral 2007). The calculation is based on 120 days of construction per site and includes diesel fuel combustion and loss of vegetation.

3.8 NOISE

3.8.1 Affected Environment

Sensitive receptors are specific geographic points, such as residences or recreational facilities (e.g., boat launch), where people could be exposed to unacceptable levels of noise. Noise-sensitive land uses that have been identified in the project area include private residences and recreation use of the river corridor. Noise levels in the project vicinity are governed primarily by road noise along Evans Bar Road and Dutch Creek Road (located west of the project area) from local residential traffic, occasional commercial traffic (e.g., logging trucks), and other miscellaneous sources (i.e., chain saws, lawn mowers, overhead aircraft, barking dogs, children at play). There are approximately 15 private parcels that are in proximity (i.e., approximately 0.5 mile) to the project area; each of these parcels has one or more structures that may be occupied on a seasonal or permanent basis and susceptible to project-related noise. In addition, recreational use of the river corridor by residents and their guests as well as boaters (i.e., anglers and rafters) occurs throughout the year. These recreational user groups may be close to one or more activity areas during the construction period, but the duration of their exposure to construction noise would depend on the type of recreational activity. For instance, a hiker walking a trail in the project area may take several hours to walk from one point to another, while a bank angler may spend time at one location in the project area for several hours. A boater may stop to fish at a location within the project area for a short period of time, but typically less than an hour at each stop.

In 2002, a community noise survey was conducted for Trinity County (Brown-Buntin 2002) as part of the update of the County General Plan – Noise Element. The nearest survey points to the project area were Junction City School and Winton Pass Road (Lot 25), which is about 5 miles away in Junction City. The community noise survey results indicate that noise levels at these two noise-sensitive areas range from 52 to 60 dB Ldn[21]. These are low noise levels typical of small communities and rural areas. Maximum noise levels observed during the noise survey were generally caused by local automobile traffic and heavy trucks (Brown-Buntin 2002). Occasional aircraft overflights and construction activities were other sources of maximum noise levels. Background noise levels in the absence of these maximum-noise generating events are largely attributable to distant traffic, wind, birds, and insects.

3.8.2 Environmental Consequences

Alternative 1

Under Alternative 1, noise from construction activities would temporarily dominate the noise environment in and adjacent to activity areas for varying periods of time. Construction activities would generate maximum noise levels ranging from 65 to 84 dB Ldn at a distance of 50 feet, although intervening terrain and vegetation could reduce these noise levels. Construction noise would be temporary and is expected to occur primarily between the months of July and September. Adjacent landowners would be notified by letter prior to project construction. In addition, the environmental commitments outlined in Table 2-2 (EC-NO-1 [4.14- 1a] and 2 [4.14-1b]) would ensure that temporary noise impacts would be minimized by noise-muffling devices, so sensitive receptors would not be negatively affected for extended periods of time. Construction activities would be scheduled between 7:00 a.m. and 7:00 p.m., Monday through Saturday. Construction

[21] dB Ldn = The average equivalent sound level during a 24-hour day, obtained after addition of 10 A-weighted decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

activities would be prohibited on Sundays unless a variance is granted by both Trinity County and BLM managers.

Residences located near the site would be subjected to varying degrees of construction noise, primarily associated with construction traffic entering and exiting the project area during the authorized work periods. It is not anticipated that ground vibration created by project activities would be detectable at any sensitive receptor location nor would the activities result in any structural damage. Recreational users in the general vicinity of the site could encounter increased ambient noise levels during construction activities. While such an increase in noise could be significant, its impact would be temporary and localized, and would be minimized with the implementation of environmental commitments EC-NO-1 [4.14-1a] and 2 [4.14-1b].

If migratory birds are using habitat in the project area for nesting and rearing purposes, pre-construction surveys would be performed to identify specific activity areas where noise-related impacts would be deferred until after the nesting season is complete or until a qualified biologist has determined the young have fledged the nest.[22] An increase in noise effects to wildlife (e.g., raptors and song birds) could be significant; however, these impacts would be temporary and localized and would be minimized with the implementation of environmental commitments EC-VW-6 [4.14-1a] and 7 [4.14-1b].

With the inclusion of CEQA mitigation measures EC-NO-1 [4.14-1a], EC NO-2 [4.14-1b], EC-VW-6 [4.14-1a], and EC-VW-7 [4.14-1b] described in this section, impacts under CEQA related to noise would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Alternative 2

Under Alternative 2, noise impacts to sensitive receptors would remain similar to existing conditions. Therefore, there would be no noise-related impacts as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.9 GEOMORPHOLOGY AND SOILS

3.9.1 Affected Environment

The mainstem Trinity River generally flows north through the project area. Major influences on the river channel are flow regulation from Lewiston Dam, about 23 miles upstream of the project area, and a wide array of historical large-scale mining sites.

The 1.5-mile-long reach of the river in the project area is characterized by a relatively wide alluvial valley bottom, relatively low water-surface slopes, low sinuosity, and simple channel geometry. The channel is almost exclusively single-thread, with some evidence of riffles, bars, or similar topographic elements. Sinuosity is low, with channel curvature being almost entirely driven by valley confinement. Sections of the channel not influenced by valley walls are nearly straight. Pebble counts

[22] Reclamation will comply with the bald eagle protection act (BEPA) and has worked with USFWS eagle biologists to incorporate best management measures in order to minimize and avoid construction impacts to a known pair of nesting bald eagles within the Dutch Creek project boundary. Reclamation will obtain a USFWS BEPA incidental take permit prior to starting project construction.

conducted in the project area revealed mean values of 75 millimeters (mm) and 140 mm, and 84th percentile values of 190 mm and 280 mm, respectively.

The relatively low slope and simple channel geometry that dominate the area are clearly linked to historical mining activities. Dutch Creek Flat at the upper end of the project area was stripped of all alluvial sediment in about the year 1900; the sediment deposits and geomorphic landscapes currently present in the project area are, therefore, fairly recent.

Several miles downstream of the Dutch Creek site, Oregon Gulch discharged millions of cubic yards of mining debris from hydraulic mining at the LaGrange Mine on Oregon Mountain over a 60-year period ending in the 1930s. Massive aggradation during the period dominated by hydraulic mining was followed by large-scale dredge mining of the alluvial valley floor that continued into the 1950s. The channel and associated alluvial features of the Trinity River were dredged extensively, and the dredge tailing deposits are evident on the right side of the river throughout the project area.

Flows in the Trinity River downstream from Trinity and Lewiston dams have been regulated since Trinity Dam was closed in 1960. Diversion of up to 90 percent of the Trinity River to the Sacramento River basin in the 1960s and 1970s led to substantial geomorphic changes in many locations along the Trinity River, with the predominant responses being channel narrowing and vegetative encroachment along the channel margins (USFWS and HVT 1999). Although flow regulation has certainly influenced current conditions, larger scale historical mining impacts are also important drivers of recent geomorphic evolution in the project area.

There are several discrete geomorphic features that influence the form and function of the river in the project area. The river's direction (i.e., trend and planiform) in the southern and middle portion of the project area is largely controlled by the Abrams Mica Schist bedrock that is present on river left. The bedrock is exposed along the left bank and within the river channel in this area. A feature locally referred to as the Runway Bar (or Steelhead Alley) is the prominent alluvial deposit in the project area and is located on river right between river miles 85.5 and 86. The feature is composed mostly of medium and coarse gravels, sand, and silt, and covers a layer of bedrock located up to 10 feet under the bar alluvium. A second gravel bar is located in the project area on river right and extends about 800 feet downstream (i.e., north) of Carr Creek. The river in the northern portion of the project area is controlled by a 500-acre upland landside complex that forces the river to bend to a north/south orientation.

Mineral resources in the project area consist primarily of gravel and cobble, which are considered suitable for use in river rehabilitation activities. Placer mining of alluvial gravel for gold using a variety of techniques has left the different types tailing deposits that are apparent throughout the project area; these deposits continue to influence the form and function of the Trinity River. Recreational mining (i.e., gold panning) may take place on both federal and private lands in the project area, but public access is limited to existing Forest Service trails located in the northern portion of the project area on river left (see Figure 2-1) or by boat.

Other than mining activities authorized under the Surface Mining and Reclamation Act (SMARA), information on private mining in Trinity County is limited. According to BLM and Trinity County records, there is no recent mineral development or currently active mining claims operating under the provisions of the 1872 mining law or a county SMARA permit within the project area. The mining

claim[23] that is bisected by activity area A-1 on the northern (downstream) edge of the project area (see Figure 2-1) is no longer active.

There is one active sand and gravel mine, the Eagle Rock Mine, operating under a county SMARA permit several miles from the project area. This mine is currently operating at the site of the historic La Grange Hydraulic Gold Mine upstream of Junction City.

Eight soil map units (i.e., types) occur in the project area and are described in the Soil Survey of the Trinity County, California, Weaverville Area, and Soil Survey of the Shasta-Trinity National Forest Area, Parts of Humboldt, Siskiyou, Shasta, Tehama, and Trinity Counties, California (Natural Resources Conservation Service 2018). An overview of each soil type is presented in Table 3-2.

Table 3-2. Soil Map Units in the Project Area

Map Unit Name Taxonomy	Map Unit Reference Code	Drainage Class	Depth to Restrictive Layer	Hydric Soils
Holland family, 60 to 80 percent slopes	99	Well-drained	26 inches to paralithic bedrock	No
Atter-Dumps, Dredge Tailings – Xerofluvents complex, 2 to 9 percent slopes Typic Xerorthents	102, 102tw	Well-drained, somewhat excessively drained	More than 80 inches	No, except stream terraces, alluvial fans, and channels
Brockgulch-Dedrick-Brownbear complex, 50 to 75 percent slopes Typic Xerochrepts	111	Well-drained, somewhat excessively drained	10 to 40 inches to lithic bedrock	No, except drainageways
Hoosimbim-Etsel complex, 30 to 50 percent slopes Ultic Haploxeralfs	158, 158tw	Well-drained, somewhat excessively drained	4 to 60 inches to lithic bedrock	No
Xeralfs-Xerorthents complex, 5 to 50 percent slopes Xeralfs, xerorthents	213, 213tw	Well-drained	10 to 60 inches to lithic bedrock	No, except stream terraces
Xerofluvents-Riverwash complex, 0 to 5 percent slopes Xerofluvents	217, 217tw	Well-drained	More than 80 inches	Yes
Water	220	N/A	N/A	N/A
Xerofluvents-Riverwash association, 0 to 20 percent slopes Xerofluvents	351	Well-Drained	More than 80 inches	No, except drainageways

[23] California Mining Claim (CAMC) 0279989 (Enterprise II)

3.9.2 Environmental Consequences

Alternative 1

Under Alternative 1, most of the rehabilitation activities would take place in the active channel or on the existing floodplains and terrace features adjacent to the river. Approximately 71,685 cubic yards of material would be excavated, and about 71,845 cubic yards of fill would be placed at activity areas throughout the project area.[24] The excavation and fill of alluvial materials from alluvial and upland areas would expose these disturbed areas to erosion from wind and water, modifying the form and function of these disturbed landscapes.

General ground disturbance from equipment access and use, vegetation removal, stockpiling of materials, and other related activities would also disturb soils on approximately 45 acres of the project area (see Table 2-1), increasing the potential for erosion due to decreased soil cohesion and armoring and increasing soil compaction in some activity areas. Sediment exposed to flowing water has an increased potential to mobilize and be transported downstream, resulting in other impacts such as short-term increases in surficial and channel erosional processes; increases in turbidity levels (at varying distances) downstream; and changes to the type, volume, and character of deposition downstream. Increased wind and water erosion and subsequent downstream sediment transport in the Trinity River would occur if soils are exposed during the wet season (typically November through May) or during infrequent precipitation events such as summer thunderstorms. Soil compaction from heavy equipment can also increase runoff and subsequently increase the potential for erosion in disturbed areas. Disturbance areas would be minimized through the establishment of activity areas and clear markers (e.g., fencing, flagging) to designate the work limits, in accordance with environmental commitment EC-GS-1[4.3-2a] (see Table 2-2). Erosion control measures would be implemented during the rehabilitation activities to protect exposed soils and minimize erosion, in accordance with EC-GS-2 [4.3-2b]. Indirect effects on water quality of the Trinity River are discussed in section 3.11, Water Quality.

One active mining claim on NFS lands north of the project area would be affected by use of an existing access route associated with Forest Service motorized trail 10W16. Minor clearing of riparian vegetation, namely willow and blackberry, will be required along this route to provide adequate width and site distance for construction equipment. Grading and hardening of the route surface may also be required at certain locations to address safety and resource concerns. Minor maintenance of this route will result in a net benefit with respect to access to the mining claim on NFS lands.

A newly created side channel and expansion of floodplain inundation (in terms of both timing and area) would enhance the alluvial nature of this section of river through removal of excess dredge tailings and soils that have accumulated over the years. Some fill would be placed along the floodplain to create bars and riffles, realign the main channel, and constrict the floodplain.

Surface and subsurface geology and soil conditions in the activity areas were evaluated as part of the design process, and the types of alluvial material (e.g., cobble, gravel, fines) available for the rehabilitation activities were characterized to determine how much material could be re-used onsite. Where fill placement would occur, these areas would initially be exposed to water erosion from the river, particularly during high flow and flood events, but the newly created features are expected to

[24] TRRP staff anticipate that approximately 200 yards of alluvial material may be imported from approved commercial or TRRP stockpile sources to meet construction specifications (e.g., large boulders).

stabilize after grading efforts are completed, initial erosional events occur, and vegetation is re-established in disturbed areas. Sediment would be transported downstream to be deposited on downstream alluvial features as part of the natural riverine process. The overall effects on river geomorphology would benefit aquatic resources and result in more natural alluvial processes that would result in an increase in the size, amount, and complexity of alluvial features that support diverse aquatic habitat, as discussed further in section 3.12, Fishery Resources.

Cobble, gravel, and other mineral materials associated with alluvial and dredge tailings deposits in the project area would be used onsite to enhance the in-channel and riverine activity areas as part of the rehabilitation activities. During the design process, the boundaries of upland activity areas were revised to avoid affecting adjacent tailing deposits and other sensitive features. The processing and reuse of alluvial material excavated from in-channel and floodplain activity areas would minimize the need to obtain these materials from adjacent tailings deposits and other off-site sources. Some alluvial material may be imported from other rehabilitation sites available to the TRRP or from local commercial sources, depending on the quality and quantity required. The mineral materials used for the rehabilitation activities would be incorporated into the riverine and riparian environment.

Although a large amount of alluvial material would be disturbed through excavation and general construction activities, a minimal amount of actual soil would be disturbed, primarily in activity areas U-2a and b, and C-2. Implementation of environmental commitments specific to erosion would minimize the potential for soil erosion and adverse effects on the river and its floodplain during the rehabilitation activities. Also, the rehabilitation activities are intended to modify the geomorphology of the river in the project area to benefit aquatic resources and fluvial processes.

With the inclusion of CEQA mitigation measures EC-GS-1[4.3-2a] and EC-GS-2 [4.3-2b] described in this section, impacts under CEQA related to geomorphology and soils considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Alternative 2

Under Alternative 2, impacts to geomorphic processes and soils resources would remain similar to existing conditions. Therefore, there would be no impacts to these processes or resources as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.10 HYDROLOGY AND FLOODING

3.10.1 Affected Environment

The project area encompasses approximately 155 acres and a 1.5-mile-long reach of the Trinity River about 25.5 river miles downstream of Lewiston Dam. The Trinity River Division of the Central Valley Project (TRD) regulates flow in the 40-mile reach of the river downstream of Lewiston Dam in accordance with the 2000 ROD for the Trinity River Mainstem Fishery Restoration EIS. Since 2005, the flow schedule has been adjusted annually based on water year type and ranges from 369,000 acre-feet (af) in critically dry years to 815,000 acre feet in extremely wet years. Peak flows through the project area were estimated from gaging stations upstream and downstream of the project area. The 1997 peak flood flow through the project area was estimated at 28,000 cfs. The median flow over a 46-year period (1954–2000) is 6,511 cfs.

Streamflow in the project area exhibits seasonal patterns that reflect a combination of flow releases from Lewiston Dam and natural tributary accretion. During the late summer and fall, Lewiston Dam releases to the Trinity River range from 300 cfs to 450 cfs; contributions from tributaries upstream of the project area are minor. Reclamation has periodically increased releases in late summer–early fall for short periods of time to respond to water quality concerns downstream in the Klamath River. Between November and May, flow releases from Lewiston Dam are augmented by increased tributary flow and surface runoff. The tributaries can also cause large floods during intense winter storms, leading to high peak flows in the project area. In May, peak flows originating from dam releases are typically followed by receding flows in the summer. A predominant gravel bar (informally named Runway Bar) is partially inundated by flows in the range of 5,500 cfs to 6,135 cfs. At about 1,500 cfs, low floodplain areas in the project area become inundated, and, at about 2,500 cfs, in-channel bars and additional floodplain areas become inundated. Most of the floodplain and in-channel bars are inundated between 3,000 and 4,500 cfs.

The Trinity River Flood Insurance Study (FIS) was updated for Trinity County in 2014 using a hydraulic analysis conducted by the California Department of Water Resources (DWR), Northern Region Office. This analysis consisted of creating and calibrating the Trinity River FIS hydraulic model, performing the floodway analysis, and mapping the 100- and 500-year floodplains. The FIS modeled the reach of the Trinity River from just downstream of the North Fork Trinity River to Trinity Dam Boulevard (RM 72.43 to 110.96). It also included development of approximate hydraulic models for seven tributaries to the Trinity River to aid in improving flood zone A mapping. This analysis used the best available topographic and flow data, provided in part by the TRRP.

A floodplain encroachment analysis was performed by DWR for the TRRP using methods consistent with the Federal Emergency Management Agency (FEMA) requirements. From this encroachment analysis, the floodway of the Trinity River was determined. The floodway is defined as the channel of a river or watercourse and the adjacent lands that must be reserved in order to discharge the base flood[25] without cumulatively increasing the water-surface elevation more than 1 foot.

Except for some portions of staging and upland activity areas, most of the project area is in the 100-year floodplain, as defined in the 2014 FIS, and is subject to Section 29.4 of Trinity County's zoning ordinance (Flood Hazard Zoning District or Flood Hazard Overly Zone). This section of the County's ordinance requires a floodplain development permit; provisions of this section require that "encroachments shall not result in any increase in the base flood elevation during the occurrence of the base flood discharge."

3.10.2 Environmental Consequences

Alternative 1

Under Alternative 1, the elevation and extent of the Trinity River floodplain would be modified through the activities described in Chapter 2. This alternative was developed to ensure that none of the activities within the limits of the 100-year floodplain would be in conflict with the provisions of Section 29.4 of Trinity County's zoning ordinance.

Through the design and review process, a number of activity areas (e.g., U-2a) were relocated to areas upslope of the 100-year floodplain: no structures or facilities are located in activity areas below

[25] Flood having a one-percent chance of being equaled or exceeded in any given year, also referred to as the "100-year flood."

the FEMA base flood elevation (BFE). A key element in the selection of activity areas and subsequent engineering designs for activities in these areas was to ensure that encroachments into the floodway would not result in any increase in the BFE during the occurrence of the base flood discharge in the project area. The hydraulic analysis conducted by DWR used the FEMA-approved model developed for the 2014 FIS. This analysis indicates that removing all the excavated material from the riverine rehabilitation areas and placing it as coarse sediment in the channel or above the BFE in upland activity areas would not result in an increase in the FEMA BFE.

This alternative was developed to be self-perpetuating and to dynamically evolve in response to changes in the flow and sediment regime. Each activity area was designed based on the hypothesized geomorphic behavior assessment. By increasing the area and timing of floodplain inundation, both in-channel and riverine activity areas (e.g., R-1, IC- 2a) would expect periodic increases in deposition and transport of sediment and woody debris, which could result in changes in the floodplain elevations over time in response to both managed and uncontrolled flow events. In any event, it is expected that, over time, in-channel and riverine activity areas will reach an equilibrium with the flow and sediment regime. Until riparian vegetation grows at R-2, a large flood could also induce rapid meander migration in the downstream direction starting at IC-1. However, the shallow bedrock on river left, large wood placement, and riparian vegetation planting are expected to limit the extent of the meander complex migration. A 100-year return interval flow could scour the mid-channel bar at IC-4 and reoccupy the existing main channel alignment while expanding the IC-3 side channel.

The displacement of channel and floodplain materials would have only a minimal potential to change the groundwater hydraulics in the project area. Groundwater table elevations and water volumes in the off-channel wetland downstream of activity area R-2 on river right would not be negatively affected because groundwater elevation at this location is associated with river stage. The tendency of the surface water–groundwater system to move to equilibrium conditions and the overall absence of impacts to the regional driving mechanisms of groundwater recharge (seasonal precipitation and Trinity River flow regimes) indicate that no long-term impacts on water table elevations would occur.

This alternative would not include activities intended to increase the BFE in the project area. Activities intended to modify the bed and banks of the Trinity River could have ancillary impacts to the bed and banks downstream.

While the fundamental objective of the activities associated with this alternative is to reestablish the alluvial features of the river, isolated instances of bank erosion could result in the loss of riverbank, sedimentation, deposition of sediment on alluvial features, and loss of riparian vegetation. The environmental commitments outlined in Table 2-2 are an integral component of this alternative. As a whole, this alternative was developed to ensure that no people or structures would be exposed to a risk of injury, death, or loss involving flooding and/or erosional processes.

The overall design of this alternative was developed to ensure that the hydrologic function and potential for flooding meet the project objectives, and no mitigation is required. Impacts under CEQA related to hydrology and flooding considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Alternative 2

Under Alternative 2, impacts to hydrology and flooding would remain similar to existing conditions. Therefore, there would be no impacts to hydrology or flood occurrence as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.11 WATER QUALITY

3.11.1 Affected Environment

The release of water from Lewiston Dam influences water quality in the Trinity River, primarily in the 40-mile reach downstream of the dam. These influences are particularly important with respect to temperature, turbidity, and suspended sediments.

The activities described in Chapter 2 of this EA/IS are subject to compliance with the Water Quality Control Plan for the North Coast Region (Basin Plan; Regional Water Board 2011). The beneficial uses for the Trinity River defined in the Basin Plan are listed in Table 4.5-1 of the Master EIR. In addition to municipal and domestic water supply, the beneficial uses affected by the water quality of the Trinity River are primarily those associated with supporting high-quality habitat for fish. Recreation (contact and non-contact) is another important beneficial use potentially affected by various water quality parameters (e.g., sediment and temperature).

The Basin Plan identifies both numeric and narrative water quality objectives for the Trinity River. Table 4.5-2 in the Master EIR summarizes the water quality objectives for each of the categories that have been established by the Regional Water Board to protect designated beneficial uses. Section 4.5-1 of the Master EIR also provides a comprehensive discussion of water quality parameters that influence water quality in the 40-mile reach of the Trinity River below Lewiston Dam.

In 1992, the Environmental Protection Agency (EPA) added the Trinity River to its list of impaired rivers under the provisions of Section 303(d) of the Clean Water Act (CWA) in response to a determination by the State of California that the water quality standards for the river were not being met due to excessive sediment. In 2001, the EPA established a Total Maximum Daily Load (TMDL) for sediment in the river. The Regional Water Board has continued to identify the Trinity River as impaired in subsequent listing cycles. The primary adverse impacts associated with excessive sediment in the Trinity River pertain to degradation of habitat for anadromous salmonids. The restriction of streamflow downstream of the TRD has greatly contributed to the impairment of the Trinity River below Lewiston Dam (EPA 2001).

Due to the location of the site, the effects of the TRD are less than those documented in TRRP monitoring efforts upstream of Douglas City at about RM 92.6. Data from on-going sediment transport monitoring suggest that below Douglas City, additional streamflow and sediment contributions from Indian, Weaver, and Reading creeks significantly reduce the coarse sediment and streamflow deficits. Below Douglas City, dam releases and natural runoff events are generally capable of transporting sediment influxes. Local fishermen have expressed concern that TRRP gravel augmentation efforts have resulted in the filling, or partial filling, of fishing holes that serve as adult holding habitat with gravel. According to comments provided to the TRRP on this topic, the specific fishing holes referred to are all upstream of Douglas City.

Water temperature is one of the most important variables affecting salmonids and other aquatic organisms (Carter 2005). It influences feeding rates and growth, metabolism, development, timing of migration, spawning and rearing, and the availability of food. Since the construction of the TRD, discharge from Lewiston Dam has played an important role in regulating water temperatures in the Trinity River downstream. Depending on the type of water year and time of year, this effect diminishes to varying degrees with distance from Lewiston Dam.

A key objective of the TRRP's flow management is to improve the thermal regimes for all anadromous salmonid life stages that use the Trinity River. The TRRP has been using flow management practices to meet specific temperature management targets, and temperature monitoring data have been collected as part of the Adaptive Environmental Assessment and Management process since 2002. The project area is located between two water temperature monitoring sites, Douglas City and Junction City above Canyon Creek.

Water temperatures in the Trinity River through the project area are primarily influenced by flows, topography, and aspect. Flows in this reach typically exceed the temperature targets for short periods of time in the fall (Magneson and Chamberlain 2015). With the exception of staging and access areas downstream of Carr Creek, this reach is oriented in an east-west direction with very little shade provided by topography or riparian vegetation. The extensive mining activities and lack of fertile soil on the right side of the river limit the establishment of riparian forests. On the left bank of the river, mature upland forest occurs in isolated stands downslope from steep bedrock slopes.

The primary adverse impacts associated with excessive sediment in the Trinity River pertain to anadromous salmonid fish habitat, which the TRRP was formed to correct. Section 4.5.1 of the Master EIR provides a comprehensive discussion of this topic beginning on page 4.5-5.

On May 20, 2015, the Regional Water Board issued a General Water Quality Certification (Order R1-2015-0028) to the TRRP under the auspices of Reclamation. This order implements portions of the Trinity River TMDL and provides an allowable zone of turbidity dilution (protective of sensitive aquatic life), within which turbidity levels shall not exceed 20 NTUs or 20 percent above naturally occurring background levels, whichever is greater. During in-river construction activities, the TRRP will monitor turbidity levels within 50 feet upstream of project activities (i.e., to serve as the natural background level) and 500 feet downstream of the in-river construction activities (point of compliance) that could increase turbidity. If naturally occurring background levels are greater than 20 NTUs, turbidity levels at the point of compliance shall not exceed 20 percent above the naturally occurring background level.

The Trinity River is typically very clear, with natural background turbidity levels in the range of 0 to 1 NTU during low-flow conditions (300 to 450 cfs). Due to the very low background concentrations during the summer, turbidity levels immediately downstream of the most carefully planned and implemented in-channel restoration activities will likely be increased by more than 20 percent above background levels and plumes extending downstream of restoration activities may be visible.

Over the years, the TRRP has increasingly conducted in-channel work in order to create immediate aquatic habitat and to create conditions where river flows develop and maintain functioning river attributes (e.g., backwaters and alternating point bars). Through time various effective turbidity control measures for construction have developed. These include:

- Structural containment – Use structures such as earth barriers, K-rail containment dams, bladder dams and silt curtains to isolate turbid water from the active channel. These structures typically remain in place until the riverine features are fully excavated and graded.
- Processing – Gravel and cobbles excavated from alluvial deposits (e.g., floodplain, dredge tailings) are processed and in some cases washed to help maintain low turbidity levels associated with placement of gravel and cobbles in or adjacent to the channel.
- Pace of construction – Controlling the pace of in-channel excavation and placement of alluvial material ensures that sediment input into the water column is consistent with permit requirements. This method requires direct field observations and real-time turbidity data obtained by onsite construction monitoring personnel.
- Flushing – Within structurally contained areas, turbid water is flushed by allowing flow into the work area and regulating the outflow as a function of measured turbidity levels. Small weirs are used to adjust inflow and outflow rates to ensure permit requirements are met.
- Channel bottom cleaning – This method entails removal of silt- and clay-sized sediment from the channel bottom, typically by pumping or hand excavation. This method requires effluent to be pumped to containment ponds in upland areas and subsequently incorporated into site rehabilitation efforts.

TRRP monitoring data also indicate that turbidity levels downstream of the rehabilitation sites may be increased by overland flow during the initial high-flow events that occur following completion of construction activities. During springtime high-flow releases from Lewiston Dam (e.g., clear water released from the dam during channel maintenance flows), turbidity levels at monitoring locations 500 feet or more downstream of recently completed channel rehabilitation sites may be more than 20 percent greater than background levels. However, when the high flows are caused by natural stormwater runoff in the Trinity River Basin, the river carries a substantial sediment load (e.g., turbidity greater than 40 NTUs). Under these conditions, turbidity levels at monitoring locations 500 feet or more downstream of recently completed channel rehabilitation activities are generally not more than 20 percent greater than background levels.

During natural high-flow events, the relative addition of fine sediment from recently completed channel rehabilitation projects is minimal compared to the sediment load already being transported by the river. Furthermore, in the Trinity River watershed where wildfire has occurred over the last several years (e.g., the Oregon fire in 2014, Helena fire in 2017, Carr fire in 2018), it is expected that water quality in the restoration reach will be strongly influenced by run-off from burned areas during storm events. In these run-off events, the contribution of fine sediment associated with TRRP projects is expected to be relatively minimal compared to loading from burned watersheds.

3.11.2 Environmental Consequences

Alternative 1

The activities incorporated into this alternative have been developed to meet the objectives described in section 1.3 of this EA/IS and are intended to reestablish functional fluvial and alluvial processes in and to some extent downstream of the project area. In the following discussion, the environmental consequences of this alternative on water quality and the associated beneficial uses of the Trinity River focus on three water quality parameters: sediment, temperature, and turbidity.

Due to the extremely low background turbidity levels during low-flow conditions, reduction of these turbidity levels to within 20 percent above background is generally not feasible, even with the environmental commitments listed in Table 2-2. However, short-term increases in turbidity levels that occur during permitted restoration activities are generally not considered to be biologically detrimental to aquatic organisms because the duration of these increased levels is short (several hours) and fish are able to move away from the activity area. Monitoring turbidity increases during implementation of previous TRRP projects has shown that periods of increased turbidity are brief (generally less than 24 hours) at monitoring points located 500 feet downstream and that beneficial uses continued to be protected. In addition, the quantity of fine sediment introduced to the river during activities at low flows is typically small and is restricted with respect to timing and location; furthermore, not all activity areas are experiencing disturbance at the same time.

The consequences of this alternative on water quality associated with in-channel activities and lowering of floodplains would change the location and nature of sediment in and adjacent to the low-flow channel. The placement of spawning-sized gravel at the X-3 crossing necessary to access the activity areas on river left would add approximately 150 cubic yards of material to the river; the gravel used for these crossings would be sized to ensure that it would mobilize during high flows in the first year following construction and provide some augmentation of spawning habitat downstream. As described in Chapter 2 and Appendix D, environmental commitments and design measures would be incorporated into the construction contract to minimize the potential for hazardous materials (e.g., hydraulic fluid) from leaking or otherwise being discharged into the river at a crossing or other locations where equipment is working in the water. These commitments and measures would be adequate to protect the beneficial uses of the Trinity River.

The activities incorporated into this alternative are intended to reconnect the existing floodplains with the channel, which would result in shallow depths and slow velocities across a wider range of streamflows than those currently being provided. Other activities incorporated into this alternative would increase the complexity of the channel to increase habitat for all life stages. Due to the location and aspect of the river in the project area, water temperature in the river below Lewiston Dam is heavily influenced by flow releases from the dam as well as input from tributaries downstream. The east-west orientation of this reach also influences the degree to which afternoon shading affects water temperature.

This alternative would include clearing and grading a number of activity areas, some of which have some amount of riparian vegetation. Functionally, the existing riparian vegetation has little influence on water temperature through this reach, but it does provide shaded riparian area habitat for aquatic organisms at isolated locations along the channel margin. While there would be some localized effect on water temperature as a result of clearing and grading activities, the expansion of the main channel (IC-3) and lowering of the floodplains (R-1 and R-2) are expected to establish more riparian vegetation. Revegetation efforts associated with these activities would increase functional riparian vegetation, which in turn would increase shade and improve habitat for juvenile salmonids along the margins of these features under a wide range of flow conditions, including those that may occur during late-summer releases when air temperatures are high.

The activities described in Chapter 2 for this alternative would temporarily increase turbidity and total suspended solids in the Trinity River. The incorporation of the environmental commitments listed in Table 2-2 (EC WQ-1 [4.5-1a, b], EC WQ-2 [4.5-1c], EC WQ-3 [4.5-1d], EC WQ-4 [4.5-1e, 4.5-2a-2c] and EC WQ-5 [4.5-3a -3c]) in conjunction with the design elements and construction criteria described in Appendix D (e.g., in-river construction, water pollution prevention, and

construction schedules) are intended to limit turbidity and suspended sediments in the Trinity River. Additionally, river's edge and in-channel construction activities would be staged to minimize potential turbidity effects. During in-channel construction activities, increases in turbidity levels could occur because of the excavation of alluvial material. Connection of isolated and newly constructed side channels (e.g., during the first flush of flowing water) would result in short-term increases in turbidity levels as this material is removed from and/or redistributed downstream. Fine sediments may be suspended in the river for several hours following construction activities; however, the project would be compliant with the conditions of the Program's General Water Quality Certification and is not expected to have a negative impact on beneficial uses.

The extent of downstream sedimentation would be a function of the size and mobility of the substrate. For example, fine-grained sediments such as silts and clays can be carried several thousand feet downstream of construction zones, while larger-sized sediments such as coarse sands and gravels tend to drop out of the water column within several feet of the construction zone. Collectively, the activities included in this alternative could result in short-term increases in turbidity and suspended solids concentrations in the water column that could potentially violate the Basin Plan objectives for turbidity in the Trinity River.

One discrete temporary crossing of the river at this site (X-3) would provide access for in-channel and riverine work areas. This low-flow channel crossing would be constructed of appropriately sized alluvial materials. In conjunction with construction of R and IC activity areas, additional crossings would be used at several locations using similar types of temporary fords. Placement of alluvial fill materials could temporarily increase turbidity and suspended materials during and immediately following crossing construction. Removal and distribution of alluvial materials upon deconstruction of the low-flow channel crossings could also increase turbidity and suspended materials during and immediately following excavation.

With the inclusion of CEQA mitigation measures EC WQ-1 [4.5-1a, b], EC WQ-2 [4.5-1c], EC WQ-3 [4.5-1d], EC WQ-4 [4.5-1e, 4.5-2a-2c] and EC WQ-5 [4.5-3a-3c], impacts under CEQA related to water quality considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Alternative 2

Under Alternative 2, impacts to water quality and associated beneficial uses would remain similar to existing conditions. Therefore, there would be no impacts on water quality as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.12 FISHERY RESOURCES

This section describes the fishery resources and aquatic habitats that are known to occur in the project area and evaluates the impacts of the alternatives on these resources. The discussion of fisheries resources is based on detailed design reports prepared for the Dutch Creek site by the State Design Team. Information from a focused literature review, informal consultation with resource agencies, and observations made during site visits was also incorporated into this section. Additional information on fishery resources is discussed in the Master EIR (section 4.6 and Appendix G). The Magnuson-Stevens Fishery Conservation and Management Act and Essential Fish Habitat are also described in the Master EIR (section 4.6).

3.12.1 Affected Environment

The native anadromous species of interest in the mainstem Trinity River and its tributaries are Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*Oncorhynchus kisutch*), steelhead (*Oncorhynchus mykiss irideus*) and Pacific lamprey (*Entosphenus tridentatus*). There are two spawning races of Chinook salmon, spring- and fall-run, and two spawning races of steelhead, winter- and summer-run. The life histories and freshwater habitat requirements of these and other species and their distinct spawning populations are described in Appendix G of the 2009 Master EIR.

Resident native fish species found in the Trinity River Basin include game fish such as rainbow trout (*Oncorhynchus mykiss*) and non-game fish such as speckled dace (*Rhinichthys osculus*), Klamath smallscale sucker (*Catostomus rimiculus*), Pacific lamprey, Klamath River lamprey (*Lampetra similis*), three-spined stickleback (*Gasterosteus aculeatus*), coast range sculpin (*Cottus aleuticus*), and marbled sculpin (*Cottus klamathensis*). The abundance of resident native species and the factors affecting their abundance in the basin are not well understood; however, all these species evolved and existed in the Trinity River prior to the TRD and are presumably adapted to conditions that predate the TRD.

Non-native fish species found in the Trinity River include American shad (*Alosa sapidissima*), brown bullhead (*Ameiurus nebulosus*), green sunfish (*Lepomis cyanellus*), brown trout (*Salmo trutta*), and brook trout (*Salvelinus fontinalis*) (USFWS, unpublished data). American shad occur in the lowermost portions of the Trinity River below Burnt Ranch Falls. Currently, brown trout are largely limited to the upper portions of the river below Lewiston Dam, although some brown trout exhibit anadromous characteristics.

Special-status fish species with the potential to occur in the project area include:

- Southern Oregon/Northern California Coasts (SONCC) Evolutionarily Significant Unit (ESU) of coho salmon;
- Klamath Mountain Province steelhead ESU;
- Upper Klamath-Trinity Rivers ESU Chinook salmon; and
- Pacific lamprey.

The aquatic environment in the project area is characterized by a sequence of aquatic mesohabitat types. Each of these habitat types consists of distinctive combinations of water depth, water velocity, water temperature, cover, substrate composition (bedrock, cobble, gravel, sand, silt, etc.), and adjacent riparian vegetation. Several distinct pool-riffle units (DWR 2017) are present in the project area. Several unnamed pools are located in the northern portion of the project area adjacent to activity areas C-7, C-8, C-9, and C-10. The Last Hole on the Left is located approximately 1,200 feet upstream of activity area X-3, near the center of the project area where the river turns north (see Appendix D, Figure D-1. This pool is a well-known scour pool that is approximately 8 feet deep and serves as holding habitat for adult salmonids. In-stream gravel bars/riffles flank both the upstream and downstream sides of the Last Hole on the Left and likely serve as spawning habitat. A complex of unnamed pools is also located immediately adjacent to Runway Bar, approximately 1,000 feet upstream of the Last Hole on the Left. These pools are located in the bedrock-lined portion of the river known as Steelhead Alley, where the habitat type changes from a riffle to a run/glide. Both juvenile salmonids and adult steelhead have been observed in the vicinities of these pools. A large in-stream gravel bar is located immediately upstream of these pools, adjacent to C-1 and R-1, and likely serves as spawning habitat.

In 2014, freshwater mussels were identified at a number of locations in the low-flow channel in the project area, primarily associated with vegetated banks. In 2015, a number of ammocoete rearing areas were identified throughout the project reach. Generally, these rearing areas were associated with eddy habitat that had abundant levels of detritus.

The aquatic values and resources that persist in the project reach were recognized early in the planning and design process, and specific project objectives were developed by the TRRP design teams to ensure that key aquatic habitats are protected and/or enhanced as this alternative was developed over several years. Figure D-1 (Appendix D) illustrates the location of these sensitive areas. The activity areas presented on Figure 2-1 were modified as necessary to ensure that these sensitive areas were addressed by the design teams.

In support of the TRRP, Reclamation developed a hydraulic model that has been used by the design teams to characterize existing and potential habitat in the project area for anadromous salmonid fry and presmolt life stages. Weighted useable area (WUA) is the metric used to characterize habitat under the existing conditions based on three attributes: depth, velocity, and cover. Table 3-3 provides WUA values for flows ranging between 300 cfs and 4,500 cfs modeled for the Trinity River under the existing condition; WUA values are expressed in acres of habitat for both fry and presmolt life stages that would be available under these flows.

Table 3-3. Existing Condition WUA for Fry and Presmolt Habitat – Dutch Creek Site

Flow (CFS)	300	450	700	1,100	2,000	4,500
Fry WUA (acres)	2.25	1.97	1.72	1.44	1.13	1.32
Presmolt WUA (acres)	2.57	2.32	2.14	1.88	1.47	1.41

3.12.2 Environmental Consequences

Alternative 1

A primary objective of Alternative 1 is to increase spawning and rearing habitat for anadromous salmonids in a manner that benefits coho salmon and other special-status fish species.

Activities related to implementation of this alternative include the following environmental commitments, as outlined in Table 2-2, to reduce impacts to fishery resources: EC FR-1 [4.6-1a, 1b], EC FR-2 [4.6-4a-4e], EC FR-3 [4.6-4f], EC FR-4 [4.6-5b], and EC FR-5 [4.6a-6d]. This alternative would result in the localized loss of vegetation and general disturbance to the bed and banks of the Trinity River. Removal of vegetation and soil could accelerate erosion processes in the project area and increase the potential for sediment delivery to the Trinity River. As discussed in section 3.11, Water Quality, this alternative would result in some project-related effects on erosional processes and changes in the sediment regime within the project area and to a limited extent downstream. The excavation and placement of alluvial materials within the channel and associated floodplain of the Trinity River would result in changes to the amount and character of sediment that may be mobilized post-construction.

In certain IC, SLJ and R activity areas, processed alluvium (gravel and cobble) would be placed within and adjacent to the low-flow channel in a manner intended to increase spawning and rearing habitat for coho salmon and other salmonids. However, the environmental commitments listed in the above paragraph have been incorporated into this alternative to minimize the release of fine sediment

into the water column during or following construction and to reduce the impacts to existing spawning and rearing habitat for short periods of time, primarily in conjunction with elevated turbidity levels. The placement and use of several low-water fords in the Trinity River would require increasing the amount of coarse sediment at several shallow riffles during in-river construction windows, possibly for several months. The presence and use of the fords across the Trinity River would occur at locations occasionally used by salmonids as spawning and rearing habitat. Proportionally, these fords would occupy a small percentage of the available habitat in the project reach during construction.

Exposed soils in the upland and staging areas are susceptible to mobilization from rainfall during early-season runoff events. In-river excavation is planned as part of Alternative 1; therefore, it is expected that excavation and operation of heavy equipment would re-suspend silt and sand, resulting in localized and temporary increases of suspended sediment and turbidity. Operation of heavy equipment in the active channel during these activities would likely re-suspend streambed sediments. Any juvenile salmonid salmon rearing in the area during in-channel construction could be temporarily displaced or their social behavior could be temporarily disrupted by turbidity created during this activity.

Erosion and deposition of fine sediments associated with implementation of this alternative action are expected to be localized and temporary. Some fine-textured sediment may settle near or on spawning habitat located downstream of riverine activity areas, but this sediment is not expected to impair redd excavation or spawning activities. Excavation, grading, and coarse sediment addition within the channel would occur only during low-flow conditions between July 15 and September 15 prior to the spawning period. In-river work, including construction of temporary crossings, may temporarily displace adult salmonids using holding habitat within the project area to other holding habitat either upstream or downstream of the project reach due to transient turbidity and short-duration sediment plumes created by construction activity. Juvenile salmonids using this reach during this timeframe could also be temporarily displaced or their social behavior could be temporarily disrupted due to increases in turbidity or suspended sediment. Behavioral disruption, even temporarily, could result in some increased vulnerability to competitive interactions or predation for salmonids. These temporary impacts were anticipated and addressed in the 2000 Biological Opinion (BO) and associated incidental take statement for the ROD as well as the amended BO for in-river work.

Adult Pacific lampreys migrate upstream from spring through early summer to spawn. Larval lampreys inhabit the river year-round. Siltation of nests that may be built in suitable habitats (i.e., low-slope riffles) could occur. Filter feeding by larval lampreys could be disrupted by an increase in suspended sediments caused by construction-related erosion, although this impact would be very localized and temporary. In addition to ammocetes occupying alluvial substrate, freshwater mussel populations occur at locations through the project area. Mussel beds observed within the boundaries of in-channel activity areas will be flagged for avoidance and, to the extent feasible, individuals will be relocated to nearby appropriate habitat that would not be disturbed (see EC-VW-10). Some mussels and lampreys may inadvertently be physically displaced during construction; this affect would be minimal to either species due to the large populations known to occur at other locations that would be protected within the project area as well as upstream and downstream.

The environmental commitments incorporated into this alternative would be implemented in conjunction with the construction activities described in Chapter 2. In addition to the typical practice of refueling construction equipment at upland activity areas (e.g., U-1a and 1b, U-2a and 2b), this alternative also includes activities that would result in mechanized equipment (e.g., trucks,

excavators) crossing and/or operating in the active channel for short periods. As a result, minor fuel and oil spills could occur and there would be a risk of larger releases. Without rapid containment and clean up, these materials could be toxic, depending on the location of the spill in proximity to water bodies in the project area. Oils, fuels, and other contaminants could have short-term effects on the various life stages of salmonids and other anadromous fish that are using habitat in close proximity to construction activities; however, this effect is not anticipated to negatively affect individual organisms or populations.

Coho salmon and other special-status aquatic species also occur in the Trinity River, and suitable salmonid rearing habitat is used in the project area year-round. Adult coho and other salmonids migrate through the project area and use suitable spawning habitat throughout the 40-mile reach of the Trinity River below Lewiston Dam. Direct injury to, or mortality of, coho salmon and other salmonids could occur during in-river construction and construction of the low-flow channel crossings. These in-water work activities would be conducted only during late-summer low-flow conditions (e.g., July 15 to September 15), thus minimizing the potential for direct mortality to rearing coho and other salmonids because this period corresponds to a time of the year when the fewest number of juvenile salmonids are known to occur in the project reach.

NMFS expects that all displaced juvenile fish, including coho salmon, would find suitable habitat in river reaches upstream or downstream of the project reach, because juvenile rearing habitat in the mainstem Trinity River is likely under-saturated during summer and fall months (National Marine Fisheries Service 2006). The construction period identified above would completely avoid the spawning period for coho salmon; therefore, direct impacts to adult coho salmon or their eggs/alevins (yolk-sac fry) would not occur.

A small, temporary, but uncertain level of stranding of coho salmon fry could occur on the newly constructed inundation surfaces during rapidly receding flood-flow periods in the winter and early spring when fry are emerging. Although stranding of fry under such receding flood conditions occurs naturally the constructed features could increase the potential for stranding. As fluvial channel migration occurs through these surfaces, the potential for fry stranding is expected to equilibrate to that of a natural stranding risk.

Table 3-4 shows the amount of WUA fry and presmolt salmonid habitat that would be provided after implementation of Alternative 1 as flows increase through the project reach.

Table 3-4. Alternative 1 WUA for Fry and Presmolt Habitat – Dutch Creek Site

Flow (CFS)	300	450	700	1,100	2,000	4,500
Fry WUA (acres)	2.52	2.25	2.37	2.08	1.71	2.36
Presmolt WUA (acres)	2.87	2.67	2.82	2.57	2.16	2.68

As indicated in Table 3-5, Alternative 1 would result in an increase in rearing habitat in the project reach over a range of flows. These increases in habitat for extremely young fish can be critical for their survival. This alternative also includes design elements to protect adult spawning and holding habitat, particularly at the sensitive features shown on Figure D-1 (Appendix D). It is not expected to have a long-term effect on the amount or utility of holding habitat for adult salmonids. These beneficial effects will also apply to varying degrees to other aquatic organisms that use habitat in this reach.

Table 3-5. Increase in WUA Habitat Under Alternative 1– Dutch Creek Site

Flow (CFS)	300	450	700	1,100	2,000	4,500
Fry WUA (acres)	0.27	0.28	0.65	0.64	0.58	1.04
Presmolt WUA (acres)	0.30	0.35	0.68	0.69	0.69	1.27

With the inclusion of CEQA mitigation measures EC FR-1 [4.6-1a, 1b], EC FR-2 [4.6-4a-4e], EC FR-3 [4.6-4f], EC FR-4 [4.6-5b], and EC FR-5 [4.6a-6d] described in this section, adverse impacts under CEQA related to fisheries would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Alternative 2

Under the no action alternative, there would be no effects on spawning and rearing habitat other than those associated with current ongoing actions because the project would not be constructed. As described in Chapter 1, the TRRP and other entities have been implementing channel rehabilitation projects since 2005. These projects continue to affect the Trinity River with regards to flows, sediment, channel morphology, and riparian vegetation and the associated influence on habitat for aquatic organisms.

Under Alternative 2, there would be no risk of accidental spills of hazardous material, no construction-related mortality to rearing salmonids, and no increase of spawning, rearing, and holding habitat because the project would not be constructed. Impacts to fishery resources would remain similar to existing conditions. Therefore, there would be no impacts on fishery resources as defined in California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.13 VEGETATION, WILDLIFE, AND WETLANDS

3.13.1 Affected Environment

The project area supports a diversity of plant communities and wildlife habitats typical of the Trinity River corridor, including a number of non-native and invasive plant species associated with historic mining and a managed flow regime. No ESA listed or special-status plant species were identified during botanical surveys in the project area. Wildlife habitats described in this section are based on the California Wildlife Habitat Relationships (CWHR) system. These wildlife habitats are summarized in Table 3-6 and illustrated on Figure 3-1.

Table 3-6. Plant Communities and Other Habitats in the Project Area

Wildlife Habitat Type	Estimated Acres in Project Area
Annual Grassland	19.71
Barren	5.99
Blue Oak-Foothill Pine	5.35
Douglas-fir	27.23
Mixed Chaparral	3.03
Montane Hardwood	6.65

Wildlife Habitat Type	Estimated Acres in Project Area
Montane Hardwood-Conifer	30.27
Montane Riparian	24.57
Perennial Grassland	0.03
Ponderosa Pine	11.89
Riverine	12.81
Urban*	5.05
Valley Foothill Riparian	2.48
Total	**155.11**

*Note: Urban includes portions of the access road as well as the cleared areas around the existing cabins located on river right.

The dominant habitat types include montane-hardwood-conifer, Douglas-fir, montane riparian, and European invasive annual grassland; these habitat types make up more than 65 percent of the habitats present in the project area. Riverine, ponderosa pine, montane hardwood, barren, blue oak-foothill pine, urban, mixed chaparral, valley foothill riparian, and perennial grassland are the habitats that make up the remaining portions of the project area. Dominant plant species in these 13 habitats include gray pine (*Pinus sabiniana*), canyon live oak (*Quercus chrysolepis*), Oregon white oak (*Q. garryana*), ponderosa pine (*Pinus ponderosa*) and Douglas-fir (*Pseudotsuga menziesii*), with occasional Pacific madrone (*Arbutus menziesii*) and incense cedar (*Calocedrus decurrens*). Understory vegetation includes white leaf manzanita (*Arctostaphylos viscida*), greenleaf manzanita (*A. patula*), birchleaf mountain mahogany (*Cercocarpus betuloides*), Armenian blackberry (*Rubus armeniacus*), poison-oak (*Toxicodendron diversilobum*), rattail sixweeks grass (*Festuca myuros*), soft brome (*Bromus hordeaceus*), redstem filaree (*Erodium cicutarium*), black mustard (*Brassica nigra*), Maltese star thistle (*Centaurea melitensis*), miniature lupine (*Lupinus bicolor*), and English plantain (*Plantago lanceolata*). Botanical surveys conducted in 2013, 2014 and 2018 identified riparian and upland invasive species. Himalayan blackberry[26] is pervasive along the right bank in the vicinity of crossing X-3. Upland invasive species include black locust, non-native grasses and yellow star thistle; primarily in open areas associated with dredge tailings and alluvial terraces.

The Trinity River is the primary drainage feature in the project area. It is considered a water of the United States and a navigable water that is subject to the jurisdiction of USACE. It is also considered associated with Riparian Reserve land allocations on BLM and NFS lands. The main channel of the Trinity River in the project area totals 16.46 acres (7,071 linear feet), and ranges from about 87 to 295 feet wide at the ordinary high water mark. Several side channels along the river collect and convey flow into the main channel; these channels vary between 20 and 50 feet in width and 400 and 1,200 feet in length. Carr Creek is the only tributary to flow into the Trinity River at the project site. The confluence of Carr Creek is located at mile post 85.3 on river right. Carr Creek is a small stream (approximately 5 feet wide) that drains a small watershed.

There are four intermittent and three ephemeral streams at various locations in the project area on both sides of the Trinity River. These streams convey water flows from upland areas near the outer limits of the project area into wetlands, other streams, or the main channel of the river. These streams

[26] The term Himalayan Blackberry *(Rubus armeniacs)* is used as a synonymy for Armenian Blackberry by agencies and residents of Trinity County.

total approximately 0.07 acre (990 linear feet) and range between 2 and 10 feet wide at the ordinary high water mark.

A total of 95 riparian wetlands encompassing approximately 22.04 acres were delineated in the project area. These wetlands are located along the main and side channels of the Trinity River; they contain a dominance of woody riparian and herbaceous species, such as willows (*Salix* sp.), white alder (*Alnus rhombifolia*), Oregon ash (*Fraxinus latifolia*), Armenian blackberry (*Rubus armeniacus)*, reed canary grass (*Phalaris arundinaceae*), and mugwort (*Artemesia douglasiana*).

Seven seasonal wetlands totaling approximately 0.13 acre are present in the project area in locations disturbed by past hydraulic mining activities. Dominant vegetation in the seasonal wetlands includes Mediterranean barley (*Hordeum marinum*) and tall fescue (*Festuca arundinacea*).

Table 3-7 and Figure 3-2 summarizes the wetlands and other waters of the United States that occur within the project boundary.

Table 3-7. Summary of Waters of the United States in the Project Area

Waters of the United States	Total Acreage	Total Linear Feet	Cowardin Type*
Riparian Wetland	22.04	N/A	PFO, PSS
Seasonal Wetland	0.13	N/A	PEM
Other Waters: Ephemeral Stream	0.01	419	R4SB
Other Waters: Intermittent Stream	0.06	571	R4SB
Other Waters: Perennial Stream	18.92	7,251	R3UB, R3US
Total Waters of the United States	**41.21**	**8,241**	

*Note: The Cowardin classification system is a system for classifying wetlands, devised by Lewis M. Cowardin et al. in 1979 for the United States Fish and Wildlife Service.

The 40-mile reach of the Trinity River downstream of Lewiston Dam may support several special-status plant species, including species listed under the federal and state ESAs; BLM and Forest Service Sensitive Species; and species considered rare, threatened, or endangered in California based on the Rare Plant Ranks (see Table 4.7-1 in the Master EIR for a complete list of species and their status). Botanical surveys were conducted at the Dutch Creek site in May and July 2013 and March and June 2014 by Trinity County Resource Conservation District botanists; no special-status plant species (including plants listed on the Forest Service or BLM sensitive species list) were identified. The boundary of the project area was revised in 2017, and additional botanical surveys were conducted in March, May, and June 2018 by Stantec Consulting Services Inc. (Stantec) biologists in the areas not covered by the previous surveys. No special-status plant species were identified during the 2018 surveys. During 2018 post-fire recovery monitoring, the Forest Service documented the invasive aquatic organism didymo *(Didymosphenia geminata)* upstream and downstream of the Dutch Creek site[27] (Forest Service 2018).

[27] Some scientists believe that didymo is a non-native and invasive diatom that is easily transferred between watersheds, most commonly through recreational equipment such as boats, waders, and fishing gear.

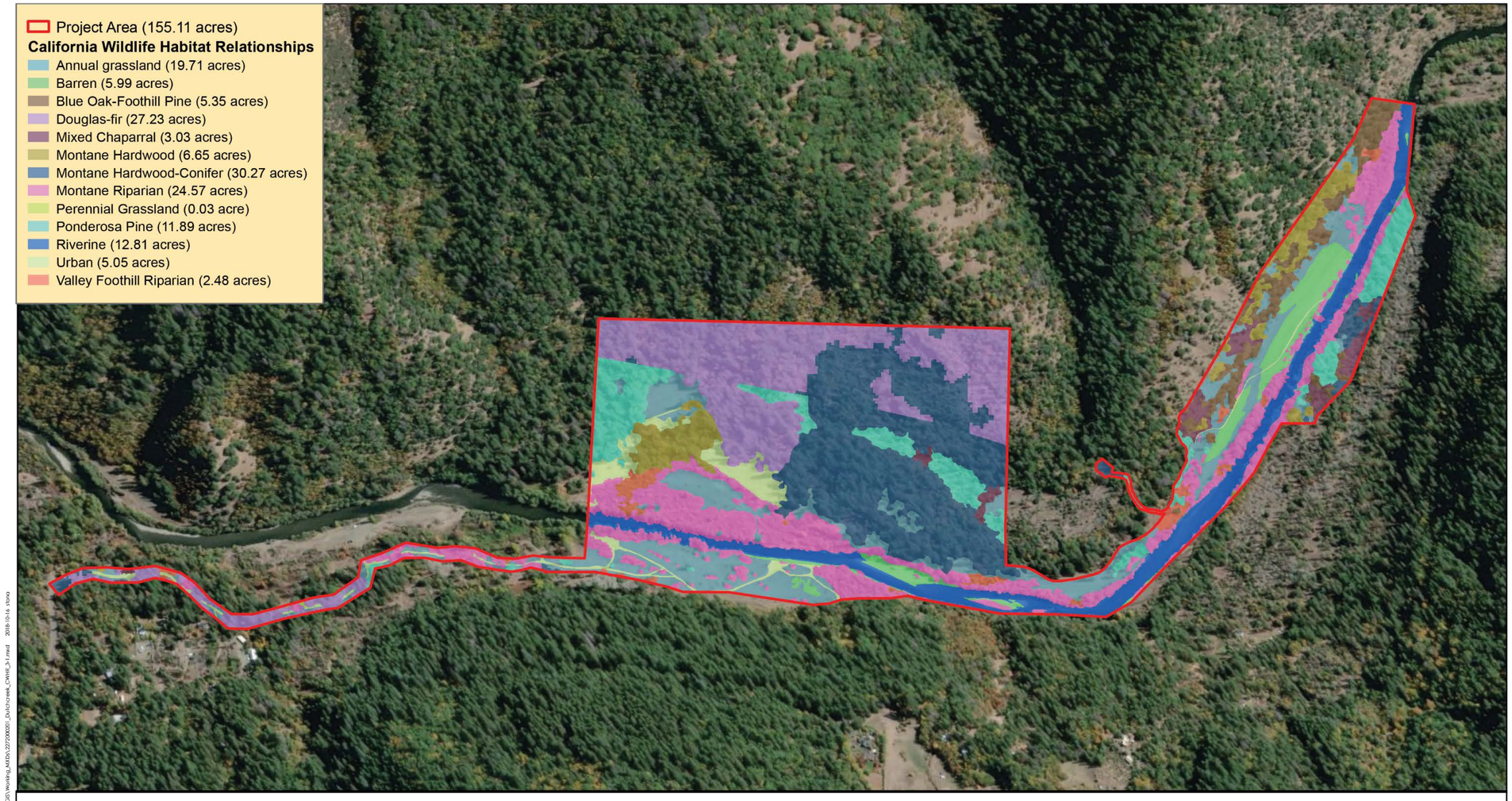

Figure 3-1. Habitat Types

Potential Waters of the United States

Wetlands

Label	Type	Cowardin Type	Location (UTM m)	Area (ac)	Length (ft)	Width (ft)
RW1	Riparian Wetland	PFO	497622, 4503720	0.07	--	--
RW2	Riparian Wetland	PFO	497535, 4504382	0.01	--	--
RW3	Riparian Wetland	PFO	497558, 4504379	0.01	--	--
RW4	Riparian Wetland	PFO	497560, 4504370	0.01	--	--
RW5	Riparian Wetland	PFO	497540, 4504373	0.01	--	--
RW6	Riparian Wetland	PFO	497960, 4502040	2.46	--	--
RW7	Riparian Wetland	PSS	498267, 4501937	0.04	--	--
RW8	Riparian Wetland	PSS	498284, 4501944	0.01	--	--
RW9	Riparian Wetland	PSS	498248, 4501946	0.11	--	--
RW10	Riparian Wetland	PSS	498284, 4501963	0.03	--	--
RW11	Riparian Wetland	PSS	498275, 4501976	<0.01	--	--
RW12	Riparian Wetland	PSS	498269, 4501978	0.01	--	--
RW13	Riparian Wetland	PSS	498238, 4501985	0.01	--	--
RW14	Riparian Wetland	PSS	498226, 4501990	0.02	--	--
RW15	Riparian Wetland	PSS	498213, 4501949	<0.01	--	--
RW16	Riparian Wetland	PSS	498210, 4501944	0.01	--	--
RW17	Riparian Wetland	PSS	498229, 4501949	0.01	--	--
RW18	Riparian Wetland	PSS	498209, 4502007	0.00	--	--
RW19	Riparian Wetland	PSS	498183, 4501952	0.01	--	--
RW20	Riparian Wetland	PSS	498137, 4501981	0.05	--	--
RW21	Riparian Wetland	PSS	498121, 4501996	0.02	--	--
RW22	Riparian Wetland	PSS	498105, 4501998	0.02	--	--
RW23	Riparian Wetland	PSS	498092, 4502004	0.01	--	--
RW24	Riparian Wetland	PSS	498022, 4502047	0.10	--	--
RW25	Riparian Wetland	PSS	498081, 4502089	0.01	--	--
RW26	Riparian Wetland	PSS	498015, 4502120	0.04	--	--
RW27	Riparian Wetland	PSS	497972, 4502140	0.08	--	--
RW28	Riparian Wetland	PSS	497940, 4502153	0.03	--	--
RW29	Riparian Wetland	PSS	497995, 4502071	<0.01	--	--
RW30	Riparian Wetland	PSS	497998, 4502067	<0.01	--	--
RW31	Riparian Wetland	PFO	497845, 4502152	1.77	--	--
RW32	Riparian Wetland	PSS	497569, 4502322	0.00	--	--
RW33	Riparian Wetland	PSS	497559, 4502335	0.02	--	--
RW34	Riparian Wetland	PSS	497524, 4502374	<0.01	--	--
RW35	Riparian Wetland	PSS	497533, 4502365	<0.01	--	--
RW36	Riparian Wetland	PSS	497543, 4502350	<0.01	--	--
RW37	Riparian Wetland	PFO	497663, 4503010	11.31	--	--
RW38	Riparian Wetland	PFO	497683, 4502273	<0.01	--	--
RW39	Riparian Wetland	PSS	497783, 4502225	0.02	--	--
RW40	Riparian Wetland	PSS	497803, 4502221	0.01	--	--
RW41	Riparian Wetland	PSS	497817, 4502214	0.01	--	--
RW42	Riparian Wetland	PSS	497843, 4502202	0.01	--	--
RW43	Riparian Wetland	PSS	497872, 4502157	0.01	--	--
RW44	Riparian Wetland	PSS	497894, 4502179	0.03	--	--
RW45	Riparian Wetland	PSS	497915, 4502166	0.02	--	--
RW46	Riparian Wetland	PSS	498349, 4501897	2.07	--	--
RW47	Riparian Wetland	PSS	498218, 4501940	<0.01	--	--
RW48	Riparian Wetland	PSS	498221, 4501939	<0.01	--	--
RW49	Riparian Wetland	PFO	497635, 4503284	1.44	--	--
RW50	Riparian Wetland	PFO	497615, 4503195	<0.01	--	--
RW51	Riparian Wetland	PFO	497611, 4503184	0.02	--	--
RW52	Riparian Wetland	PFO	497603, 4503164	0.03	--	--
RW53	Riparian Wetland	PFO	497603, 4503091	0.07	--	--
RW54	Riparian Wetland	PFO	497579, 4503098	0.15	--	--
RW55	Riparian Wetland	PFO	497568, 4503115	0.05	--	--
RW56	Riparian Wetland	PSS	497574, 4503073	0.01	--	--
RW57	Riparian Wetland	PSS	497610, 4503076	<0.01	--	--
RW58	Riparian Wetland	PSS	497608, 4503065	0.01	--	--
RW59	Riparian Wetland	PSS	497607, 4503053	<0.01	--	--
RW60	Riparian Wetland	PSS	497606, 4503045	<0.01	--	--
RW61	Riparian Wetland	PSS	497603, 4503023	<0.01	--	--
RW62	Riparian Wetland	PSS	497600, 4503018	0.01	--	--
RW63	Riparian Wetland	PSS	497604, 4503008	<0.01	--	--
RW64	Riparian Wetland	PSS	497591, 4503001	0.02	--	--
RW65	Riparian Wetland	PSS	497582, 4503000	<0.01	--	--
RW66	Riparian Wetland	PSS	497570, 4502993	0.01	--	--
RW67	Riparian Wetland	PSS	497566, 4502986	0.01	--	--
RW68	Riparian Wetland	PSS	497563, 4502981	<0.01	--	--
RW69	Riparian Wetland	PSS	497560, 4502978	<0.01	--	--
RW70	Riparian Wetland	PSS	497582, 4503011	0.01	--	--
RW71	Riparian Wetland	PSS	497601, 4503010	<0.01	--	--
RW72	Riparian Wetland	PSS	497602, 4502986	<0.01	--	--
RW73	Riparian Wetland	PSS	497602, 4502974	<0.01	--	--
RW74	Riparian Wetland	PSS	497553, 4502960	0.01	--	--
RW75	Riparian Wetland	PSS	497557, 4502953	<0.01	--	--
RW76	Riparian Wetland	PSS	497538, 4502955	<0.01	--	--
RW77	Riparian Wetland	PSS	497699, 4503074	0.01	--	--
RW78	Riparian Wetland	PSS	497714, 4503109	0.03	--	--
RW79	Riparian Wetland	PSS	497698, 4503116	0.01	--	--
RW80	Riparian Wetland	PSS	497703, 4503129	0.01	--	--
RW81	Riparian Wetland	PSS	497741, 4503180	0.01	--	--
RW82	Riparian Wetland	PSS	497593, 4502942	0.01	--	--
RW83	Riparian Wetland	PSS	497582, 4502943	0.12	--	--
RW84	Riparian Wetland	PSS	497554, 4502868	1.31	--	--
RW85	Riparian Wetland	PSS	497574, 4502764	0.01	--	--
RW86	Riparian Wetland	PSS	497580, 4502769	0.01	--	--
RW87	Riparian Wetland	PSS	497591, 4502811	0.01	--	--
RW88	Riparian Wetland	PSS	497508, 4502522	<0.01	--	--
RW89	Riparian Wetland	PSS	497511, 4502534	0.02	--	--
RW90	Riparian Wetland	PSS	497524, 4502619	0.16	--	--
RW91	Riparian Wetland	PSS	497593, 4502926	0.01	--	--
RW92	Riparian Wetland	PSS	498077, 4502014	0.02	--	--
RW93	Riparian Wetland	PSS	498156, 4501965	<0.01	--	--
RW94	Riparian Wetland	PSS	498162, 4501967	0.02	--	--
RW95	Riparian Wetland	PSS	498251, 4501975	<0.01	--	--
	Subtotal			22.04		

Label	Type	Cowardin Type	Location (UTM m)	Area (ac)	Length (ft)	Width (ft)
SW1	Seasonal Wetland	PEM	497883, 4502013	0.01	--	--
SW2	Seasonal Wetland	PEM	497657, 4502678	0.04	--	--
SW3	Seasonal Wetland	PEM	497925, 4502623	<0.01	--	--
SW4	Seasonal Wetland	PEM	497892, 4502979	0.02	--	--
SW5	Seasonal Wetland	PEM	497867, 4502934	0.01	--	--
SW6	Seasonal Wetland	PEM	497846, 4502800	0.02	--	--
SW7	Seasonal Wetland	PEM	497849, 4502840	0.02	--	--
	Subtotal			0.13		
	Total Wetlands			22.17		

Other Waters

Label	Type	Cowardin Type	Location (UTM m)	Area (ac)	Length (ft)	Width (ft)
ES1	Ephemeral Stream	R4SB	498101, 4501902	<0.01	87	2
ES2	Ephemeral Stream	R4SB	498058, 4501956	<0.01	88	2
ES3	Ephemeral Stream	R4SB	497955, 4501986	0.01	244	2
	Subtotal			0.01	419	
IS1	Intermittent Stream	R4SB	498287, 4501839	0.01	104	3
IS2	Intermittent Stream	R4SB	497756, 4502123	0.01	85	3
IS3	Intermittent Stream	R4SB	497736, 4502272	0.03	172	10
IS4	Intermittent Stream	R4SB	497875, 4502648	0.01	210	3
	Subtotal			0.06	571	

Label	Type	Cowardin Type	Location (UTM m)	Area (ac)	Length (ft)	Width (ft)
PS1	Perennial Stream	R3UB	497548, 4504376	0.03	96	13
PS2	Perennial Stream	R3UB	497481, 4504043	0.01	48	5
PS3	Perennial Stream	R3UB	497465, 4504038	<0.01	36	5
PS4	Perennial Stream	R3UB	497809, 4502414	16.46	7,071	87-295
PS5	Perennial Stream	R3UB	498476, 4501868	<0.01	*	*
PS6	Perennial Stream	R3UB	498256, 4501872	0.17	*	*
PS7	Perennial Stream	R3UB	498153, 4501915	0.01	*	*
PS8	Perennial Stream	R3UB	498132, 4501926	<0.01	*	*
PS9	Perennial Stream	R3US	498232, 4501946	<0.01	*	*
PS10	Perennial Stream	R3US	498235, 4501953	0.04	*	*
PS11	Perennial Stream	R3US	498302, 4501952	0.04	*	*
PS12	Perennial Stream	R3UB	498087, 4501955	0.04	*	*
PS13	Perennial Stream	R3UB	498042, 4501980	0.01	*	*
PS14	Perennial Stream	R3UB	497950, 4502033	0.01	*	*
PS15	Perennial Stream	R3UB	497911, 4502054	0.01	*	*
PS16	Perennial Stream	R3UB	497877, 4502073	<0.01	*	*
PS17	Perennial Stream	R3UB	497859, 4502086	<0.01	*	*
PS18	Perennial Stream	R3US	498087, 4502089	<0.01	*	*
PS19	Perennial Stream	R3UB	497849, 4502089	<0.01	*	*
PS20	Perennial Stream	R3US	498023, 4502121	<0.01	*	*
PS21	Perennial Stream	R3US	497781, 4502123	<0.01	*	*
PS22	Perennial Stream	R3US	497911, 4502158	1.57	*	*
PS23	Perennial Stream	R3US	497651, 4502241	<0.01	*	*
PS24	Perennial Stream	R3US	497674, 4502282	<0.01	*	*
PS25	Perennial Stream	R3US	497669, 4502285	<0.01	*	*
PS26	Perennial Stream	R3US	497615, 4502334	0.03	*	*
PS27	Perennial Stream	R3US	497583, 4502363	<0.01	*	*
PS28	Perennial Stream	R3US	497554, 4502471	0.35	*	*
PS29	Perennial Stream	R3UB	497569, 4502585	0.01	*	*
PS30	Perennial Stream	R3UB	497518, 4502605	0.01	*	*
PS31	Perennial Stream	R3UB	497521, 4502618	<0.01	*	*
PS32	Perennial Stream	R3UB	497614, 4502832	0.04	*	*
PS33	Perennial Stream	R3US	497644, 4502946	0.03	*	*
PS34	Perennial Stream	R3US	497629, 4503239	0.04	*	*
PS35	Perennial Stream	R3US	497648, 4503382	0.01	*	*
	Subtotal			18.92	7,251	
	Total Other Waters			19.04	8,241	
Total Waters of the United States				41.21	8,241	

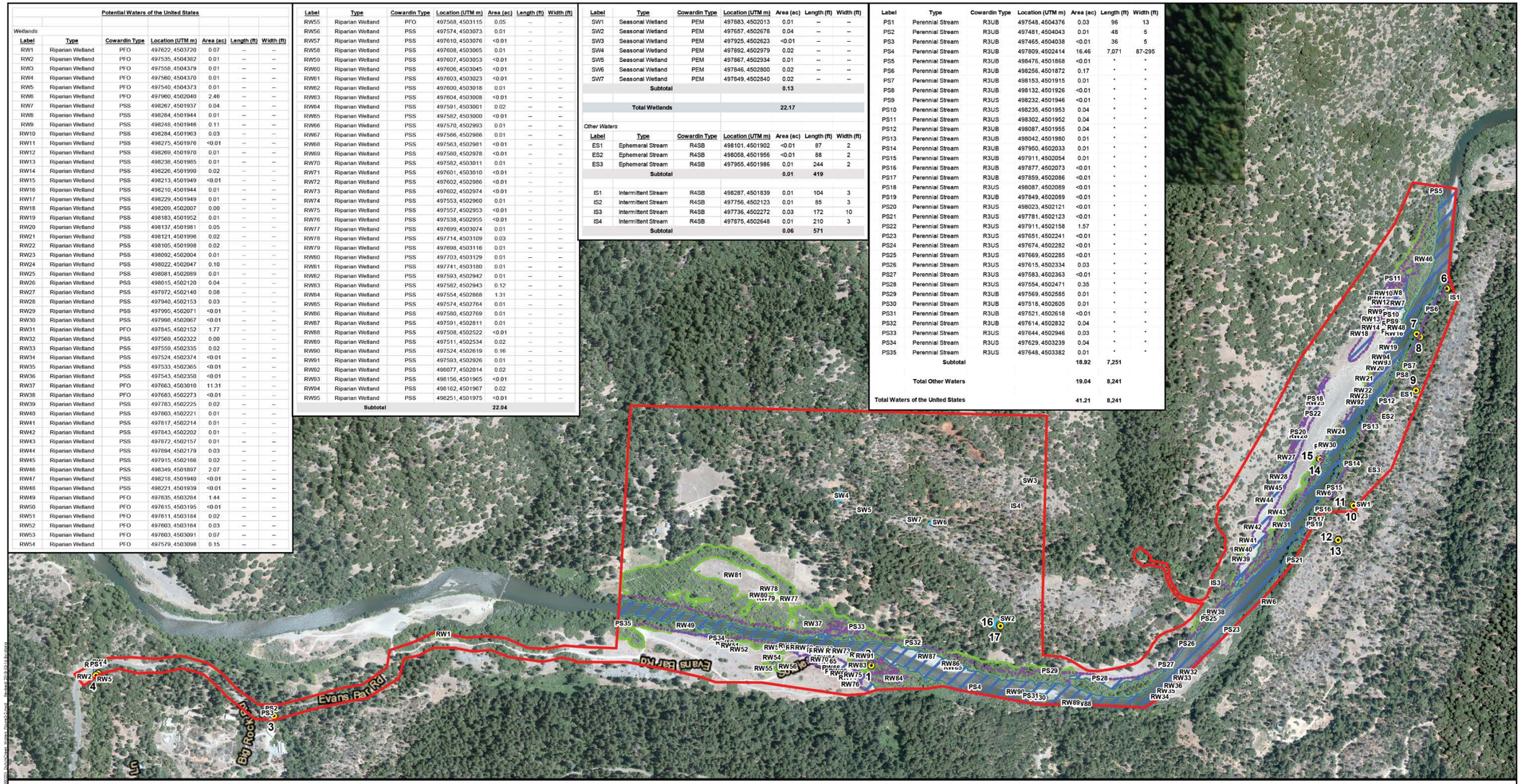

Figure 3-2. Potential Waters of the United States

No wildlife species listed under the ESA as threatened, endangered, or candidates for listing as threatened or endangered were observed in the project area during habitat mapping efforts. Early in the design process, the initial project boundary included designated critical habitat (CH) for northern spotted owl (NSO) (*Strix occidentalis caurina*). Subsequently, the boundary of the project was revised to reduce CH in the project area based on early input from Reclamation, USFWS, BLM and Forest Service biologists.The Proposed Action evolved so that only a few mature conifers would be removed from NFS lands within CH at two activity areas (A-2 and U-2b) in order to provide safe access and to ensure adequate space for excavated material above the FEMA 100 year floodline. While activity area A-5[28] will be used to access activity area C-13, no mature conifers would be removed at either A-5 or C-13.

The 2019 Biological Assessment (BA) prepared by Reclamation and submitted to the USFWS determined that the Proposed Action may affect, but is not likely to adversely affect the NSO. Reclamation also determined that the Proposed Action would not adversely modify designated CH for the NSO. The BA acknowledges that the boundary of designated CH for NSO overlaps with the project area within 3 activity areas. The Proposed Action was designed to avoid CH on river left and minimize the project footprint on CH on river right. Approximately 0.73 acres of potential foraging/dispersal habitat in A-2 would be used to create equipment access for the project activities. At activity area U-2b, 1.1 acres would be converted from Montane Hardwood-Conifer upland (with less than 40% canopy coverage) to native grass uplands. The Proposed Action would remove approximately 1.1 acres of upland foraging/dispersal habitat (U-2b) from designated CH.

In its 2019 BA, Reclamation determined that the Proposed Action is not likely to adversely affect the NSO nor its CH for the following reasons:

- Designated CH at the Dutch Creek site does not contain the physical and biological features of NSO CH required for nesting/roosting. Canopy closure is less than 60-80% within the Dutch Creek Project boundary.
- The two NSO activity sites nearest the project area are 0.7 miles and 1.2 miles respectively at their nearest point. No adverse effects to NSO from noise are anticipated because these activity centers are greater than 0.25 miles from project activity areas.
- The proposed activities are limited to early-seral forest representing 2.3 acres of potential foraging and dispersal habitat. No potential nesting or roosting habitat occurs in the project area.
- A Limited Operating Period (LOP) from February through July 15 on river-right at the site would reduce the potential of disturbing NSO potentially foraging in the action area.
- The proposed activities would not downgrade or remove a significant amount of potential foraging or dispersal habitat. Abundant foraging habitat would exist in the area post-construction to maintain local activity center owls (the BA and USFWS concurrence letters are available for review at TRRP's Weaverville, California office). Consequently, the amount of potential habitat removed is minor and the effects are discountable.

The West Coast Distinct Population Segment of Fisher *(Pekaniaia pennant)* is proposed as a federal threatened species. The BA acknowledges that this species may be present in or in close proximity to the project area on a transitory basis and may use the Trinity River as a travel corridor. It is not expected to breed or den within the project area. Occasional transitory individuals of this species

[28] Activity area A-5 will provide restricted access and no vegetation disturbance will required.

would avoid areas where TRRP activities are proposed, and project impacts would not jeopardize the continued existence of the species.

The BA submitted to the USFWS details the potential ESA impacts of the project. In its June 24, 2019 letter to Reclamation, the USFWS concurred with both of the determinations made in the BA.

The Trinity River corridor provides habitat and travel corridors for various common wildlife species, such as deer *(Odocoileus hemionus)*, river otter *(Lontra canadensis)*, beaver *(Castor canadensis)*, cliff swallow *(Hirundo pyrrhonota)*, and raccoon *(Procyon lotor)*. The riparian vegetation along the Trinity River, in association with adjacent and nearby chaparral and woodland habitats, provides connected habitat in an area that has been fragmented by rural residential development and road building. Special-status wildlife species that may use habitats in the project area include the Pacific Fisher West Coast Distinct Population Segment *(Pekania pennanti)*[29], a species that is proposed for federal listing as threatened, California species of special concern, and a BLM and Forest Service sensitive species; ring-tailed cat *(Bassariscus astutus)*, a California fully protected species; bald eagle *(Haliaeetus leucocephalus)*, an endangered species under the California ESA, a BLM and Forest Service Sensitive species, and a California fully protected species; foothill yellow-legged frog *(Rana boylii)*, a candidate for listing as threatened under the California ESA and a BLM and Forest Service sensitive species; western pond turtle *(Emys marmorata)*, a California species of special concern and a BLM and Forest Service sensitive species; and several birds and bats that are BLM and Forest Service sensitive species or California species of special concern. Most of these species are riparian species and may be found using trees in the montane and valley foothill riparian habitats or wetlands in the project area. Additional details on these federal and state special-status species can be found in section 4.7, Table 4.7-1, and Appendix C of the Master EIR; Appendix I provide two tables that lists the Forest Service sensitive species identified for the STNF that were considered in this EA as required under the National Forest Management Act. NFMA. A number of these species are also on BLM's Special Status Animal Species list[30] and on BLM California Special Status Plant list[31].

There are several activity areas (e.g., C-2, C-4, C-6, R-1, U-2a, U-2b) in the project area where mature montane hardwood, ponderosa pine, and montane riparian occur on lands managed by BLM and the Forest Service. The BLM and Forest Service reviewed these areas and documented that this alternative (including vegetation removal) would meet the criteria under Exemption C of the Pechman Exemptions (October 11, 2006 Order) (see Appendix H of this EA/IS) because the activity areas are the focus of a riparian and stream improvement project where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning and where the stream improvement work is the placement large wood, channel and floodplain reconstruction, or removal of channel diversions.

[29] The California Fish and Game Commission Notice of Findings from 4/20/2016 notes that the Southern Sierra Nevada Evolutionary Significant Unit (ESU) (defined as south of the Merced River) is recognized as Threatened, while the Northern California ESU was not warranted.

[30] <https://www.blm.gov/sites/blm.gov/files/documents/files/Programs_FishandWildlife_BLMCA%20Special%20Status%20Species.pdf>

[31] <https://www.blm.gov/sites/blm.gov/files/programs-natural-resources-native-plants-california-special-status-plants-detailed-list.pdf>

Impacts on Riparian Habitat

	Impacts in Acres			
Project Impacts	**Montane Riparian**	**Valley Foothill Riparian**	**Riverine**	**Total**
In-Channel - Bar	0.17	--	0.55	0.72
In-Channel - Pool	0.52	0.02	0.02	0.56
In-Channel - Riffle	0.30	--	0.5	0.8
In-Channel - Side Channel	0.02	--	0.14	0.16
Riverine - Lowered Floodplain	1.48	0.13	<0.01	1.61
Structured Log Jam	0.06	<0.01	0.05	0.11
Upland Fill	0.18	0.11	--	0.29
Total Project Impacts	**2.73**	**0.26**	**1.26**	**4.25**
Temporary Impacts	**Montane Riparian**	**Valley Foothill Riparian**	**Riverine**	**Total**
Access Route (Temporary)	0.13	0.11	--	0.24
Channel Crossing	0.09	0.06	0.46	0.61
Contractor Use Area	4.00	0.14	0.04	4.18
Total Temporary Impacts	**4.22**	**0.31**	**0.50**	**5.03**
Total Impacts on Riparian Habitat	**6.95**	**0.57**	**1.76**	**9.28**

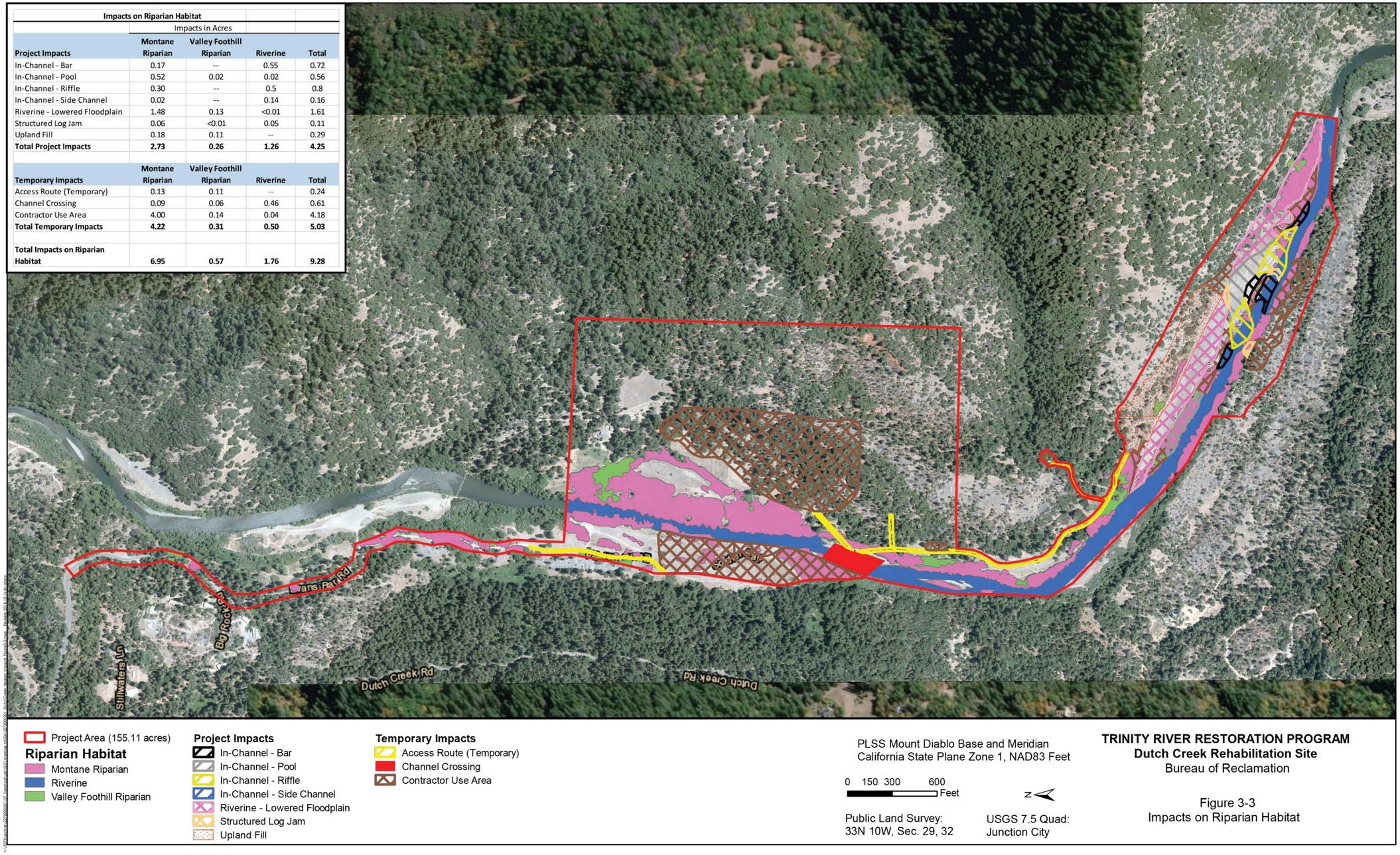

Figure 3-3. Impacts on Riparian Habitat

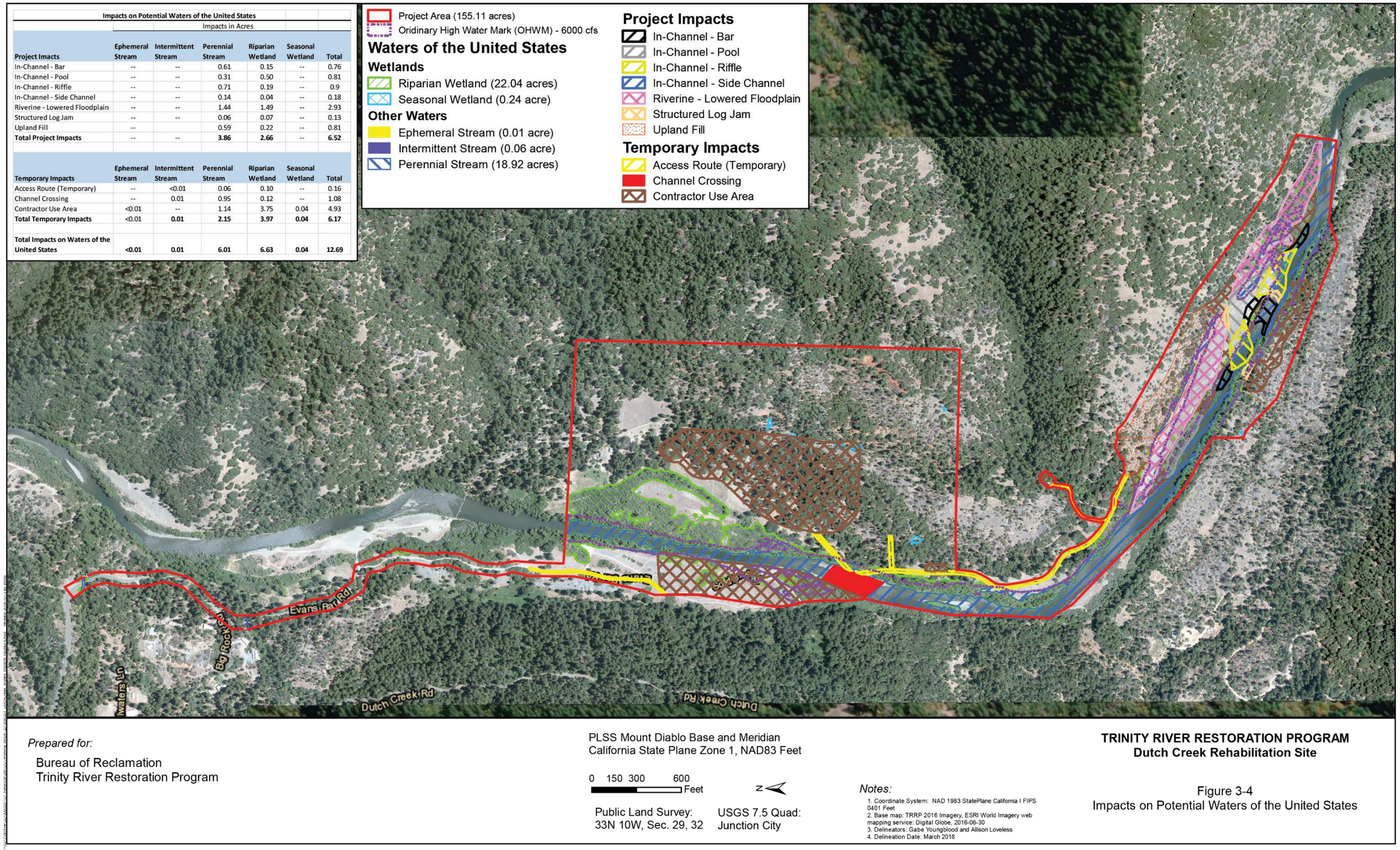

Figure 3-4. Impacts on Potential Waters of the United States

3.13.2 Environmental Consequences

Alternative 1

Under Alternative 1, the proposed rehabilitation activities are intended to enhance the wetland, riverine, and upland (i.e., dredge tailings) habitats present in the project area to improve the quality of spawning habitat for anadromous fish species and other riparian-dependent species. Alternative 1 would convert almost 5 acres of non-riparian areas (e.g., terrace deposits) to floodplain and riparian habitat within a 3- to 5-year post-project time frame. Temporary disturbance of these habitats in the project area during project implementation would occur in conjunction with vegetation removal, grading, and other construction activities.

At some activity areas (e.g., R-1), populations of invasive plants will be removed in order to expand floodplain habitat for salmonids and other aquatic organisms. Throughout the project area, activity areas were refined to avoid wooded areas where possible; however, several activity areas (e.g., C-2, C-10, U-2a and 2b) require the use of upland areas and would include the removal of conifers and other hardwood tree species. Tree removal (e.g., hazardous trees) outside these activity areas would be limited and would be subject to site-specific review and authorization by BLM and the Forest Service prior to removal in order to enhance habitat complexity, provide safe working conditions, and facilitate access. This alternative is intended to reduce the existing populations of noxious weeds and invasive plant species through grading, clearing, and revegetation activities as well as periodic flooding of newly constructed floodplains. During the rehabilitation activities, control measures for invasive plants (e.g., Himalayan blackberry, didymo), including using weed-free erosion control materials and washing equipment, would be implemented in accordance with environmental commitment EC-VW-9 [4.3-2b and 13d] (see Table 2-2) to prevent the spread of noxious weeds in the project area. Areas contaminated with known occurrences of *Didymosphenia geminata* (didymo) would be avoided. If no uncontaminated areas are available for water drafting, water drafting equipment will be cleaned by approved methods prior to drafting water from an uncontaminated location. Didymo-infested water shall be discharged away from a water source or from the same source where it was taken.

Some trees and downed logs would be reused on site to establish wood jams and structures along the river. Riparian and wetland habitats would be protected outside the activity areas and would be clearly marked for avoidance in accordance with EC-VW-1[4.7-1a]. Special-status plants have not been found in the project area and, therefore, would not be affected by the rehabilitation activities.

Implementation of this alternative would result in direct impacts (i.e., impacts associated with work in the proposed activity areas) on approximately 2.73 acres of montane riparian habitat, 0.26 acre of valley foothill riparian habitat, and 1.26 acres of riverine habitat, for a total of 4.25 acres. The construction and use of temporary access and temporary activity areas (i.e., access roads, contractor use areas, and river crossings) would also result in 5.03 acres of temporary impacts, which include 4.22 acres of montane riparian habitat, 0.31 acre of valley foothill riparian habitat, and 0.50 acre of riverine habitat. Of this habitat, over 6 acres would be revegetated with riparian species. Because of the nature of the project, the impacts to riparian habitat from construction associated with access and staging areas would be temporary, and the riparian habitat is expected to recover over time. Figure 3-3 illustrates the size and location of riparian habitat that would be affected.

Construction activities associated with this alternative would result in temporary impacts to waters under the jurisdiction of the Corps (jurisdictional waters), which include the Trinity River and the

wetlands and streams in the project area. Figure 3-4 illustrates the size and location of waters of the United States that would be affected by this alternative. Construction activities associated with the temporary access routes and use of activity areas (e.g., roads, staging) as part of this alternative would temporarily affect up to 3.97 acres of riparian wetlands, 0.04 acre of seasonal wetlands, 2.15 acres of perennial stream, 0.01 acre of intermittent stream, and less than 0.01 acre of ephemeral stream. Approximately 2.66 acres of riparian wetlands and 3.86 acres of perennial stream would be permanently affected as a result of the rehabilitation activities. However, because of the nature of the project, it is anticipated that there will be a net increase in jurisdictional waters within 5 to 10 years after implementation of this alternative.

As described in Section 2.1.10, both planting and natural recruitment of native species are planned for the revegetation of the riparian and upland areas under this alternative. These revegetation efforts would follow TRRP's 2016 Draft Riparian Mitigation and Monitoring Plan and would incorporate the requirements of the Forest Service, BLM, and other cooperating, responsible, and trustee agencies and landowners. Revegetation will result in the reestablishment of approximately 9.3 acres of habitat in five elevation zones, which include emergent wetland (0.4 acre), herbaceous toe zone (0.8 acre), willow and cottonwood (6.3 acres), transition (0.8 acre), and upland (1.0 acre). Up to 40.7 acres of areas disturbed by project activities would also be seeded and mulched[32]. Specifically, for riparian habitat, seven activity areas (i.e., R-1, R-2, and IC-4 through IC-7)) will be revegetated with native riparian species. Approximately 6.44 acres of riparian habitat in the R activity areas and 4.4 acres in the IC activity areas (total of 10.8 acres) would be established as a result of this alternative. In addition, riparian revegetation of access and staging areas would add 6.63 acres of functional riparian habitat. A total of 20.71 acres of riparian habitat would therefore be functional in 5 to 10 years after completion of the project. Based on the impact tables on Figure 3-4, this alternative would meet the TRRP's objective of no net loss of riparian habitat in the long term.

Appendix I lists Forest Service sensitive wildlife and plant species that are known to or that could occur within or adjacent to the project area on NFS lands; however, as shown in the appendix, a number of these species do not occur within or adjacent to the project area. For those species that do occur, environmental commitments have been developed to ensure that the project would not affect individuals and that this alternative is not likely to result in a trend towards federal listing or loss of viability of the species.

Temporary disturbance associated with this alternative could discourage wildlife use of the habitats in and near the project area. Most wildlife species, such as, deer, beaver, and most birds, would be able to use nearby habitats to avoid the disturbance and return once the rehabilitation activities are complete and riparian and upland revegetation reestablishes over a 3- to 5-year period. Vegetation removal would occur outside the nesting season for birds (after August 1) and the breeding season for ring-tailed cat and before bats establish maternity colonies (i.e., in early February). If this is not practicable, pre-construction surveys would be conducted to identify active bird nest sites, bat roost sites, or ring-tailed cat dens in or adjacent to the project area. No-disturbance buffers would be established around the active sites or dens until they are no longer occupied, in accordance with environmental commitments EC-VW-6 [4.7-7 a-d], EC-VW-7 [4.7-8a-d], and EC- VW-8 [4.7-9a-c] (see Table 2-2). With these environmental commitments, no take of ESA-listed bird species or ring-

[32] On federal lands, seed would be from native sources, and mulch would be a combination of weed free straw and chips/slash from vegetation clearing within the project area.

tailed cat would occur, direct impacts on other special-status avian and wildlife species would be minimized or completely avoided, and there would be no indirect effects.

Since 2016, a bald eagle (*Haliaeetus leucocephalus*) nest in a tall conifer tree has been occupied by a pair of adult birds during the nesting season. This nest is within 1/4 mile west of the A-1 access road (Forest Service motorized trail 10W16) and is visible from activity area C-7. Residential and recreational traffic occurs along this route throughout the nesting season, and ongoing planning and design studies have also occurred along the route since 2014. While data from formal nest site monitoring are not available, TRRP biologists observed a juvenile bird in the nest in 2017 and 2018. Weekly visits by TRRP staff documented that this juvenile had fledged by August 1, 2018. Construction activity near bald eagle nest sites and early in the nesting season (January–July) can cause abandonment. Consistent with EC-VW-7, Reclamation will monitor this nest location and if the nest is occupied during construction activities, USFWS-prescribed measures to minimize and avoid impacts to bald eagles will be incorporated. There would be no stopping or exiting of construction vehicles within 660 feet of the active nest (e.g., during heavy equipment mobilization along access route A-1 or within the adjoining area of C-7). To ensure that bald eagle take is covered under the Bald Eagle Protection Act (BEPA), Reclamation will obtain a BEPA take permit prior to starting project construction.

Both foothill yellow-legged frog and western pond turtle are known to use the Trinity River and adjacent habitats. The frog may use pools and slow-moving areas of the river with adequate substrate for egg laying, and disturbance to these areas during in-water activities could dislodge egg masses or injure frogs. Turtles may nest in upland areas adjacent to the river or be found in the water, and disturbance in these areas could damage nests or injure turtles. Pre-construction surveys for breeding and nesting activity of these species would be conducted in accordance with EC-VW-4 [4.7-5a-d] and EC-VW-5 [4.7-6a-e], and foothill yellow-legged frog egg masses or western pond turtle nests that could be disturbed by the rehabilitation activities would be relocated to nearby suitable habitat outside the activity areas. Precautionary measures would also be taken during the rehabilitation activities in the event a frog or turtle is encountered in an activity area, and the individual(s) would be relocated outside the activity areas in accordance with EC-VW-4 and EC-VW-5. With these environmental commitments, no take of foothill-yellow legged frog would occur consistent with the California ESA, direct impacts on western pond turtle would be minimized or completely avoided and there would be no indirect effects.[33]

Once the rehabilitation activities are complete, the habitats in the project area would include more riparian and wetland habitat with side channels off the mainstem Trinity River, providing additional riverine habitat and benefitting aquatic and riparian dependent species. Revegetation of disturbed activity areas would return them to their current or better conditions and would ensure reestablishment of native plants while reducing the extent of non-native and invasive plants. If invasive plants recolonize the restored areas, Reclamation would implement targeted control methods to remove the plants and reestablish native plants in accordance with EC-VW-9 [4.7-13a-g]. Long-term monitoring of the rehabilitation sites and adaptive measures to further enhance or create additional riparian or wetland habitat in accordance with EC-FR-4 [4.7-1b] would ensure no net loss of riparian or wetland habitat occurs, consistent with TRRP's 2016 Riparian Revegetation and Monitoring Plan. The rehabilitation activities would benefit wildlife, particularly wetland and riparian species, by enhancing the Trinity River corridor for nesting, breeding, roosting, foraging,

[33] The activities are expected to improve habitat for common and special-status reptiles and amphibians by increasing functional alluvial habitat and converting dredge tailings to more productive upland habitat.

and other activities. The corridor would continue to function as a movement corridor for many wildlife species, and the enhanced floodplain and riparian conditions could attract more wildlife to the project area.

With the inclusion of CEQA mitigation measures EC-VW-9 [4.3-2b], EC-VW-1[4.7-1a], EC-VW-6 [4.7-7 a-d], EC-VW-7 [4.7-8a-d], EC-VW-8 [4.7-9a-c], EC-VW-4 [4.7-5a-d], EC-VW-5 [4.7-6a-e], EC-VW-9 [4.7-13a-g], and EC-FR-4 [4.7-1b] described in this section, impacts under CEQA related to vegetation, wildlife, and wetlands considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Alternative 2

Under Alternative 2, no temporary or permanent disturbance to the habitats, plants, wildlife, or wetlands (and other waters) would occur in the project area. Habitat conditions in the project area would remain similar to current conditions, and the riparian corridor would be subjected to current Trinity River influences without the enhancements to the riparian and wetland habitats. The invasive yellow star thistle and other invasive plants would continue to dominate annual grasslands in the project area. Special-status wildlife species would continue to use habitats in the project area that are suitable for them.

Under Alternative 2, vegetation, wildlife, and wetland resources would continue to persist similar to existing conditions. Therefore, there would be no impacts on these resources as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.14 WILD AND SCENIC RIVERS

3.14.1 Affected Environment

The Trinity River was designated by the Secretary of the Interior as a National Wild and Scenic River (WSR) in 1981 under the 1968 Federal Wild and Scenic Rivers Act (WSRA). In addition to the mainstem Trinity River from the confluence with the Klamath River to 100 yards below Lewiston Dam, three other sections of the river were designated: the North Fork from the Trinity River confluence to the southern boundary of the Trinity Alps Wilderness Area, the South Fork from the Trinity River confluence to the SR 36 bridge crossing, and the New River from the Trinity River confluence to the Trinity Alps Wilderness Area. The mainstem Trinity River from 100 yards below Lewiston Dam downstream to Cedar Flat is classified as a “Recreational” wild and scenic river. In 1998, BLM delineated the wild and scenic river corridor.

The sections of the Trinity River described above were designated as Wild and Scenic to preserve the river’s free-flowing condition, water quality, and Outstandingly Remarkable Values (ORVs). The ORV that was identified on the date of designation was the anadromous and resident fisheries. Under an interagency agreement between the National Park Service, BLM, and the Forest Service, BLM and the Forest Service share the responsibility for conducting WSRA Section 7 determinations for the mainstem Trinity River from Lewiston Dam to the confluence with the North Fork Trinity River. Appendix J provides additional information on this topic.

The section of the Trinity River in the project area was designated as Scenic under the federal and state Wild and Scenic Rivers Acts (WSRA; Public Law 90-542 1968). This designation serves to preserve the river’s free-flowing condition, water quality (e.g., extremely low turbidity levels under

low-flow conditions), and ORVs. The section of the Trinity River subject to this alternative was found to have ORVs due to its anadromous fishery. Appendix J provides a comprehensive analysis and determination of this alternative consistent with the requirements of the Section 7 of the WSRA.

3.14.2 Environmental Consequences

Alternative 1

Construction and implementation of Alternative 1 would have a temporary effect on the scenic and recreational components of the Trinity River's Wild and Scenic River values. However, the rehabilitation activities would ultimately enhance the overall form and function of the Trinity River, thereby enhancing the outstandingly remarkable values for which it was designated a federal Wild and Scenic River.

Implementation of this alternative would increase the potential for increases in turbidity levels during and, to a lesser degree, after construction. Flows that typically contribute to good fishing tend to be clear; increases in turbidity may therefore affect the recreational experience of anglers and the aesthetic values held by other recreationists. Increased turbidity and suspended solids levels would adversely affect water quality (refer to discussion in section 4.8, Recreation, of the Trinity River Master EIR) and could adversely affect aesthetic resources. As described in Table 2-4, four specific environmental commitments developed to reduce water quality impacts have been integrated into this alternative to the reduce impacts of increased turbidity levels that could be visible to recreational users.

Under Section 7 of the federal WSRA, direct and adverse effects to the values for which the Trinity River was recognized as a Wild and Scenic River are prohibited. Based on the analysis and determination presented in Appendix J, this alternative would enhance the fishery ORV as well as maintain the water quality and free-flowing conditions for which the Trinity River was designated. Therefore, this alternative would be consistent with the provisions of the federal WSRA.

With the inclusion of CEQA mitigation measures EC-WQ-1 [4.5-1a-1e], EC-WQ-2 [4.5-2a – 2c], EC-WQ-3 [4.5-3a-3c], EC-WQ-4 [4.5-1e] and EC-RE-1 [4.8-1a], the impacts under CEQA considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Alternative 2

Under Alternative 2, there would be no degradation or obstruction of a scenic view as a result of construction because the project would not be implemented, nor would there be an effect on the scenic quality of the Wild and Scenic River. Therefore, there would be no impacts as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.15 CEQA SIGNIFICANCE

As described in section 3.1, this document is an integrated NEPA/CEQA document. Table 3-8 provides a summary of the CEQA mitigation developed for each resource topic discussed in this chapter (see Appendix F for details). It also identifies the level of significance as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Table 3-8. Summary of Resource Topics Considered in This EA/IS

Resource Topic	CEQA Mitigation	CEQA Significance
Aesthetics	EC-WQ-1 [4.5-1a-1e], EC-WQ-2 [4.5-2a – 2c], EC-WQ-3 [4.5-3a-3c], EC-WQ-4 [4.5-1e], and EC-RE-1 [4.8-1a].	Less than Significant
Air Quality	EC AQ-1 [4.11-a-1a], [4.11-2a]	Less than Significant
Cultural Resources	EC-CU-1 [4.10-2a], and EC-CU-2 [4.10-2a]	Less than Significant
Fishery Resources	EC FR-1 [4.6-1a,1b], EC FR-2 [4.6-4a-4e], EC FR-3 [4.6-4f], EC FR-4 [4.6-5b], and EC FR-5 [4.6a-6d]	Less than Significant
Geomorphology and Soils	EC-GS-1[4.3-2a] and EC-GS-2 [4.3-2b]	Less than Significant
Hydrology and Flooding	Not Applicable	Less than Significant
Land Use	Not Applicable	Less than Significant
Noise	EC-NO-1 [4.14-1a], and EC NO-2 [4.14-1b]	Less than Significant
Recreation and Wild and Scenic Rivers	EC-WQ-1 [4.5-1a-1e], EC-WQ-2 [4.5-2a – 2c], EC-WQ-3 [4.5-3a-3c], EC-WQ-4 [4.5-1e], and EC-RE-1 [4.8-1a]	Less than Significant
Transportation and Traffic	EC-TC-2 [4.16-2a, 4.16-5a] and EC-TC-3 [4.16-4a]	Less than Significant
Vegetation, Wildlife, and Wetlands	EC-VW-9 [4.3-2b], EC-VW-1[4.7-1a], EC-VW-6 [4.7-7 a-d], EC-VW-7 [4.7-8a-d], EC-VW-8 [4.7-9a-c], EC-VW-4 [4.7-5a-d], EC-VW-5 [4.7-6a-e], EC-VW-9 [4.7-13a-g], and EC-FR-4 [4.7-1b]	Less than Significant
Water Quality	EC WQ-1 [4.5-1a, b], EC WQ-2 [4.5-1c], EC WQ-3 [4.5-1d], EC WQ-4 [4.5-1e,4.5-2a-2c], and EC WQ-5 [4.5-3a-3c]	Less than Significant

4 CUMULATIVE IMPACTS AND OTHER CEQA AND NEPA CONSIDERATIONS

The analysis in this chapter tiers from the "statutory considerations" discussion in Chapter 5 of the Master EIR; the EA incorporates that discussion by reference. That discussion addressed certain topics required under CEQA, such as cumulative impacts, the significant environmental effects of the proposed action (Alternative 1), the significant effects that cannot be avoided if the proposed action is implemented, and the growth-inducing effects of the proposed action. Under NEPA, additional discussions are also required, namely, the significant irreversible and irretrievable commitments of resources and the relationship between local short-term uses of the environment and the maintenance of long-term productivity. These discussions are incorporated by reference from the Master EIR and are summarized below; see the Master EIR for complete discussions of these topics. This section also provides updated information concerning the cumulative impacts of additional projects that were not identified as foreseeable in the Master EIR.

4.1 CUMULATIVE IMPACTS

The regulatory framework for the assessment of cumulative impacts under CEQA is discussed in Chapter 5, section 5.2.1, of the Master EIR, and the regulatory framework for NEPA is discussed in Chapter 8, Section 8.2.1 of the Master EIR. Under the CEQA Guidelines (Section 15355), the term "cumulative impacts" refers to two or more individual impacts that, when considered together, are considerable or that otherwise compound or increase other environmental effects. Cumulative environmental impacts arise from the incremental impacts of the proposed action when added to other closely related past, present, and reasonably foreseeable future projects.

The CEQ's implementing regulations for NEPA (40 CFR 1508.7) state that cumulative impacts result from the incremental impact of a proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) undertakes the other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over time.

4.1.1 Methodology and Analysis

The methodology for the cumulative impact analysis is described in section 5.2.2 of the Master EIR. This assessment of cumulative impacts is considered in the same cumulative context; however, the list of related projects and programs considered in this analysis has been updated to include those closely related past, present, and reasonably foreseeable future projects listed below.

The cumulative impacts section provided in Chapter 5 of the Master EIR identified related foreseeable projects through the list approach, based on input from the lead and cooperating agencies. The geographic scope of the area examined for cumulative effects in that assessment was the Trinity River corridor between Lewiston Dam and the confluence of the North Fork Trinity River at Helena, California. The following projects were considered in that section and are still considered timely and relevant:

- Fish Habitat Management
- Trinity River Mainstem Fishery Restoration Project

- California Coastal Salmonid Restoration Program/Five-Counties Salmonid Conservation Program
- Clean Water Act Section 303(d) Total Maximum Daily Load Requirements Program

Since 2009, the TRRP has implemented projects at all the Phase 1 Channel Rehabilitation Sites and at nine of the Phase 2 sites; the Deep Gulch and Sheridan sites were completed in 2017, and the Bucktail site completed in 2010 was expanded in 2016 to include additional area coincident to the portion of the site completed in 2010 as part of the Lewiston-Dark Gulch complex. Concurrently, the TRRP has continued to implement coarse-sediment (gravel) augmentation at a number of locations downstream of Lewiston Dam, and fine sediment has been removed from both the Hamilton Ponds and Grass Valley Creek Reservoir. In addition, the TRRP-managed flows have been implemented yearly since the Master EIR was certified in 2009. Ongoing monitoring efforts by the TRRP and its partners continue to document improvements in habitat use and restoration of alluvial processes and riparian vegetation.

Since 2009, there have been a number of watershed restoration and road sediment reduction projects implemented by various agencies and organizations throughout the Trinity River basin. While some of these were considered in the Master EIR, the Forest Service and the Trinity County Resource Conservation District have completed a wide array of additional projects intended to improve watershed conditions, restore aquatic habitat, improve aquatic connectivity, and reduce road-related sediment delivery to streams and rivers. The Helena Fire in 2017 and the Carr fires in 2018 affected large portions of the Trinity River watershed and are expected to result in changes in vegetation (upland and riparian) and sediment flux throughout the watershed for some time to come. These changes could have impacts on water quality and habitat for aquatic, riparian, and terrestrial species for some time. While the EA/IS includes design measures and environmental commitments intended to reduce the direct and indirect effects associated with sediment flux, the timing of this project does not coincide with typical precipitation events for this area, so any turbidity produced during construction will not contribute to this sediment flux, and lowered floodplains will capture suspended sediment and reduce long-term sediment impacts from fires.

The TRRP has identified the need to develop a long-term source of coarse sediment (i.e., spawning gravel) for use in the lower reaches of the Trinity River (downstream of Douglas City). This need could result in harvesting and processing of dredge tailing deposits at various TRRP sites identified in the Master EIR. A project of this kind would have potential impacts on various resources, but it is speculative at this point in the planning cycle to be specific with respect to the location and/or type of impacts that may occur.

In 2017, the TRRP completed the Deep Gulch/Sheridan Creek project and has issued a draft EA/IS for the Chapman Ranch Phase A project that is proposed for construction in 2019. Both of these projects are just downstream of the Dutch Creek project area. While there is a potential for cumulative impacts because of sediment delivery and transport from previous and concurrent TRRP river rehabilitation and sediment management projects, this would be a beneficial process that would contribute to the TRRP's overall objective of a functional alluvial river. It is assumed, however, that the aquatic impacts from those earlier projects have been mitigated, and the amount of time that has elapsed since they were completed has further dissipated the effects downstream. The previous issue-specific analysis in Chapter 5 of the Master EIR sufficiently addresses the cumulative impacts of the proposed action, and no substantial differences would arise in consideration of the proposed action separately.

4.2 GROWTH-INDUCING IMPACTS

Section 5.3 of the Master EIR evaluated the potential for growth that could be induced by implementation of the proposed action and assessed the level of significance of any expected growth inducement. Under CEQA, growth itself is not assumed to be particularly beneficial, detrimental, or insignificant to the environment. If a project is determined to be growth inducing, an evaluation is made to determine whether significant impacts on the physical environment would result from that growth.

Implementation of channel rehabilitation activities in the project area would not remove any constraints to development, create new or improved infrastructure, or otherwise create conditions that would induce growth. The proposed action would improve habitat for anadromous fish and, thus, improve conditions for fishing and recreation; however, the improved fishery resources resulting from implementation of the proposed action are not likely to directly or indirectly result in substantial development or population growth. Therefore, implementation of the proposed action would not result in a significant growth-inducing impact.

4.3 ENVIRONMENTAL COMMITMENTS AND CEQA MITIGATION MEASURES

Reclamation's NEPA implementation guidance recommends that a list of environmental commitments for the preferred alternative be included in an EA. Chapter 2 of this EA/IS includes a list of environmental commitments and project design features that are part of the proposed action; these are fully described in Appendix E of this EA/IS. Where environmental commitments and project design figures are cited in this document, they are also cross referenced with the relevant mitigation measure described in the mitigation, monitoring, and reporting plan (MMRP) in Appendix F. Because this document is a joint NEPA/CEQA document, mitigation measures have been identified for potentially significant CEQA impacts in compliance with CEQA requirements. Under CEQA, lead agencies are required to adopt a program for monitoring or reporting on the revisions that they required be made part of the project and other measures required to mitigate or avoid significant environmental effects. The MMRP provides the comprehensive list of CEQA mitigation measures and identifies requirements for timing, responsible parties, and compliance verification.

4.4 SIGNIFICANT IMPACTS UNDER CEQA

CEQA establishes a duty for public agencies to avoid or minimize environmental damage where feasible (CEQA Guidelines Section 15021), and determinations of the significance of effects play a critical role in the CEQA process (CEQA Guidelines 15064). Section 5.4 of the Master EIR addresses several types of potentially significant effects.

Potentially significant effects have been identified in the areas of geology, geomorphology, soils, and minerals; water quality; fishery resources; vegetation, wildlife, and wetlands; recreation; wild and scenic rivers; cultural resources; air quality; visual resources; noise; public services and utilities; and traffic and transportation. These potential effects are discussed in the resource sections in Chapter 3, and Appendix A (Environmental Checklist) provides specific CEQA documentation. As part of the environmental impact assessment for each resource area, mitigation measures and/or design features have been identified that reduce these impacts to less-than-significant levels. The environmental analysis conducted for the proposed action did not identify any effects that, after implementation of the mitigation/design features, remained significant and therefore unavoidable; in addition, no significant irreversible effects associated with the proposed action were identified.

4.5 CONNECTED ACTIONS

The CEQ regulations for implementing NEPA (40 CFR 1508.25) state that some actions (other than unconnected single actions) may be interdependent parts of a larger action and depend on the larger action for their justification. These connected actions are closely related and should be addressed when discussing the larger action.

Connected actions that would occur related to implementation of the proposed action include activities that are required for construction of the proposed action, such as TRRP realty actions; transportation of logs, salvaged large woody debris, boulders, and alluvial materials from locations outside the project boundary; and related vehicle trips, increases in traffic circulation, and wear and tear on local roadways. These activities were analyzed in the Master EIR, and supplemental analysis of these actions is provided in Chapter 3 of this EA/IS. The environmental analysis did not identify any effects that, after incorporation of environmental commitments, project design features, and CEQA mitigation measures, remain significant.

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APPENDIX A

Environmental Checklist Form

APPENDIX A

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) Environmental Checklist Form

1. Project Title:	Trinity River Channel Rehabilitation Sites Dutch Creek (RM 85.1-86.6)
2. Lead Agency Name and Address:	North Coast Regional Water Quality Control Board 550 Skylane Blvd., Suite A, Santa Rosa, California 95403
3. Contact Person and Phone Number:	Gil Falcone, (707) 576-2830
4. Project Location:	Trinity County, California
5. Project Sponsor's Name:	Bureau of Reclamation Trinity River Restoration Program
6. General Plan Designation:	Trinity County General Plan – Resource (RE), and BLM 1993 Redding Resource Management Plan — Other (Matrix)
7. Zoning:	Agricultural 10-Acre Minimum (A10) and Agricultural Forest 20-Acre (AF20) Minimum
8. Description of Project:	See Chapter 2 of the Environmental Assessment/Initial Study (EA/IS) for the Trinity River Channel Rehabilitation Site: Dutch Creek (RM 85.1-86.6), in conjunction with Appendix B of the Environmental Assessment/Initial Study (EA/IS).
9. Surrounding Land Uses and Setting:	See Section 3.2.1 of the EA/IS

10. Other Public Agencies Whose Approval May Be Required (e.g., permits, financing approval, or participation agreement.)

- Bureau of Land Management, Redding Field Office (Right of Way and Free Use Permit)
- U.S. Forest Service (Access agreement)
- Trinity County Planning Department(Federal Emergency Management Agency compliance)
- U.S. Army Corp of Engineers (Clean Water Act, Section 404 compliance)
- North Coast Regional Water Quality Control Board (Clean Water Act, Section 401 compliance)
- State Water Resources Control Board (Compliance with the Construction General Permit)

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.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

DETERMINATION: (TO BE COMPLETED BY THE LEAD AGENCY)

Based on 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 (EIR) 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.

Under California Code of Regulations, title 14, section 15177, after a Master EIR[1] has been prepared and certified, subsequent projects which the lead agency determines as being within the scope of the Master EIR will be subject to only limited environmental review. Mitigation measures from the Master EIR will be implemented.

Signature Date

Printed Name For the Lead Agency

[1] North Coast Regional Water Quality Control Board and U.S. Bureau of Reclamation. 2009. Channel rehabilitation and sediment management for remaining Phase 1 and Phase 2 sites. Master Environmental Impact Report, Environmental Assessment/ Environmental Impact Report. Trinity River Restoration Program. August 2009. SCH#2008032110

EVALUATION OF ENVIRONMENTAL IMPACTS

Each of these environmental factors listed above was fully evaluated and one of the following four determinations was made:

- **No Impact:** No impact to the environment would occur as a result of implementing the proposed project.
- **Less Than Significant Impact:** Implementation of the proposed project would not result in a substantial and adverse change to the environment and no mitigation is required.
- **Potentially Significant Impact:** Implementation of the proposed project could result in an impact that has a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (California Environmental Quality Act Guidelines Section 15382).
- **Less Than Significant Impact with Mitigation Incorporated:** A "potentially significant impact", as described above, that can be reduced to a less-than-significant level with the incorporation of project-specific mitigation measures.

ENVIRONMENTAL IMPACT CHECKLIST

I. AESTHETICS — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☒	☐	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion of Impacts

(a) Refer to Section 3.4.2 of the EA/IS

(b) Refer to Section 3.4.2 of the EA/IS

(c) Refer to Section 3.4.2 of the EA/IS

(d) Not Applicable

Mitigation Measures

See California Environmental Quality Act (CEQA) mitigation measures described in Appendix D of the EA/IS: [4.5-1a-1e], [4.5-2a – 2c], [4.5-3a-3c], 4.5-1e] and [4.8-1a]

II. AGRICULTURAL 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) 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:**

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
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?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104 (g))?	☐	☐	☐	☒
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Discussion of Impacts

(a) Not applicable

(b) Not applicable

(c) Not applicable

(d) Not Applicable

(e) Not Applicable

Mitigation Measures

Not Applicable

III. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b)	Violate any air quality standard or contribute 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?	☐	☐	☐	☒

Discussion of Impacts

(a) Refer to Section 3.7.2 of EA/IS

(b) Refer to Section 3.7.2 of EA/IS

(c) Refer to Section 3.7.2 of EA/IS

(d) Refer to Section 3.7.2 of EA/IS

(e) Not applicable

Mitigation Measures

See CEQA mitigation measures described in Appendix F of the EA/IS: [4.11-a-1a], [4.11-2a].

IV. BIOLOGICAL RESOURCES — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
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 U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
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?	☐	☒	☐	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion of Impacts

(a) Refer to sections 3.12.2 and 3.13.2 of the EA/IS

(b) Refer to sections 3.12.2 and 3.13.2 of the EA/IS

(c) Refer to sections 3.12.2 and 3.13.2 of the EA/IS

(d Refer to sections 3.12.2 and 3.13.2 of the EA/IS

(e) Not applicable

(f) Not applicable

Mitigation Measures

See CEQA mitigation measures for fisheries described in Appendix F of the EA/IS: [4.6-1a, 1b], [4.6-4a-4e], [4.6-4f], [4.6-5b], and Environmental Commitment (EC)-FR-5 [4.6a-6d].

See CEQA mitigation measures for vegetation, wildlife and wetlands described in Appendix F of the EA/IS: [4.3-2b], [4.7-1a], [4.7-7 a-d], [4.7-8a-d], [4.7-9a-c], [4.7-5a-d], [4.7-6a-e], [4.7-13a-g], and [4.7-1b].

V. CULTURAL RESOURCES — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?	☐	☒	☐	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐
e)	Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074?	☐	☐	☐	☒

Discussion of Impacts

(a) Refer to Section 3.5.2 of the EA/IS

(b) Refer to Section 3.5.2 of the EA/IS

(c) Not applicable

(d) Refer to Section 3.5.2 of the EA/IS

(e) Refer to Section 3.5.2 of the EA/IS

Mitigation Measures

See CEQA mitigation measures for cultural resources in Appendix F of the EA/IS: [4.10-2a] and [4.10-2a].

VI. GEOLOGY AND SOILS -- Would the project:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
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 Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Discussion of Impacts

(a-i) Not applicable

(a-ii) Not applicable

(a-iii) Not applicable

(a-iv) Not applicable

(b) Refer to Section 3.9.2 of the EA/IS

(c) Refer to Section 3.9.2 of the EA/IS

(d) Not applicable

(e) Not applicable

Mitigation Measures

See CEQA mitigation measures for geomorphology and soil resources in Appendix F of the EA/IS: [4.3-2a] and [4.3-2b].

VII. GREENHOUSE GAS EMISSIONS — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion of Impacts

(a) Refer to Section 3.7.2 of the EA/IS

(b) Refer to Section 3.7.2 of the EA/IS

Mitigation Measures

See CEQA mitigation measures for air quality in Appendix D of the EA/IS: [4.11-a-1a] and [4.11-2a].

VIII. HAZARDS AND HAZARDOUS MATERIALS — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
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, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion of Impacts

(a-h) Hazards to the public were addressed in the 2009 Master EIR, and no issues were identified. Indirect public health or safety concerns are addressed under air quality, noise, recreation, and transportation and traffic.

Mitigation Measures

Not applicable

IX. HYDROLOGY AND WATER QUALITY — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should 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 would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
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 would result in substantial erosion of siltation on- or off-site?	☐	☐	☒	☐
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 flooding on- or off-site?	☐	☐	☒	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f)	Otherwise substantially degrade water quality?	☐	☐	☒	☐
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?	☐	☐	☒	☐
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
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?	☐	☐	☐	☒
j)	Inundation of seiche, tsunami, or mudflow?	☐	☐	☐	☒-

Discussion of Impacts

(a) Refer to Section 3.11.2 of EA/IS

(b) Not Applicable

(c) Not Applicable

(d) Refer to Section 3.11.2 of EA/IS

(e) Refer to Section 3.11.2 of EA/IS

(f) Refer to Section 3.11.2 of EA/IS

(g) Refer to Section 3.10.2 of EA/IS

(h) Refer to Section 3.10.2 of EA/IS

(i) Not Applicable

(j) Not applicable

Mitigation Measures

See CEQA mitigation measures for water quality in Appendix F of the EA/IS: [4.5-1a, b], [4.5-1c], [4.5-1d], [4.5-1e, 4.5-2a-2c], [4.5-3a-3c] [4.11-a-1a] and [4.11-2a].

No mitigation required for Hydrology and Flooding.

X. LAND USE AND PLANNING — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c)	Conflict with any applicable habitat conservation plan or natural communities conservation plan?	☐	☐	☐	☒

Discussion of Impacts

(a-c) Refer to Section 3.2.2 of the EA/IS

Mitigation Measures

Not applicable

XI. MINERAL RESOURCES — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion of Impacts

(a, b) Refer to Section 3.9 of the EA/IS

Mitigation Measures

Not Applicable

XII. NOISE -- Would the project result in:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
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 of public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
f)	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion of Impacts

(a) Refer to Section 3.8.2 of the EA/IS

(b) Refer to Section 3.8.2 of the EA/IS

(c) Not applicable

(d) Refer to Section 3.8.2 of the EA/IS

(e) Not applicable

(f) Not applicable

Mitigation Measures

See CEQA mitigation measures for noise in Appendix F of the EA/IS: [4.14-1a] and [4.14-1b].

XIII. POPULATION AND HOUSING — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
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)?	☐	☐	☐	☒
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c)	Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion of Impacts

(a-c) Not applicable.

Mitigation Measures

Not applicable

XIV. PUBLIC SERVICES — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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?	☐	☐	☐	☒
	Police protection?	☐	☐	☐	☒
	Schools?	☐	☐	☐	☒
	Parks?	☐	☐	☐	☒
	Other public facilities?	☐	☐	☐	☒

Discussion of Impact

(a) Not applicable

Mitigation Measures

Not applicable

XV. RECREATION — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
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?	☐	☐	☐	☒
b)	Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
c)	Degrade the quality of recreation activities or impede the use of recreation areas?	☐	☐	☒	☐

Discussion of Impacts

(a, b) Not applicable

(c) Refer to Section 3.3.2 of the EA/IS

Mitigation Measures

The CEQA mitigation measures that address impacts to water quality on recreational use of the Trinity River include: [4.5-1a-1e], [4.5-2a – 2c], [4.5-3a-3c], and [4.5-1e].

See CEQA mitigation measures for noise in Appendix F of the EA/IS: [4.14-1a] and [4.14-1b].

XVI. TRANSPORTATION AND TRAFFIC — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b)	Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c)	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?	☐	☐	☐	☒
d)	Conflict with an applicable congestion management program, including, but not limited to level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
e)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
f)	Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
g)	Result in inadequate emergency access?	☐	☐	☐	☒

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
h)	Conflict with adopted polices, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Discussion of Impacts

(a) Refer to Section 3.6.2 of the EA/IS

(b-h) Not applicable

Mitigation Measures

See CEQA mitigation measures for traffic and transportation in Appendix F of the EA/IS: [4.16-2a] and [4.16-5a].

XVII. UTILITIES AND SERVICE SYSTEMS — Would the project:

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Exceed wastewater treatment requirements of the applicable 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e)	Result in a determination by the wastewater treatment provider which 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?	☐	☐	☐	☒
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Discussion of Impacts

(a-c) Not applicable

(d) Refer to Section 2.1.12 and Appendix D (Project Design Elements) of the EA/IS

(e) Not applicable

(f) Refer to Section 2.1.12 and Appendix D (Project Design Elements) of the EA/IS

(g) Refer to Appendix D (Project Design Elements) of the EA/IS

Mitigation Measures

Not applicable

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE (To be filled out by Lead Agency if required)

		Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a)	Does the project have the potential 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 a rare or endangered plant or animal or 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 which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

(a) Refer to Sections 3.12.2, 3.13.2 and 3.5.2 of the EA/IS

(b) Refer to Chapter 4 of the EA/IS

(c) Refer to Chapters 3 and 4 of the EA/IS

APPENDIX B

Scoping Summary

APPENDIX B

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) Scoping Summary

Internal Memo

Date: June 14, 2016

From: /s/ Terri Simon-Jackson

SUBJECT: Line Officer Approval of Issues Resulting from Scoping of Lower Dutch Creek Channel Rehabilitation Project (Scoped June 2015)

This internal memorandum documents the issue identification and disposition process resulting from the public scoping for the Lower Dutch Creek Channel Rehabilitation Project.

PUBLIC INVOLVEMENT

A variety of efforts were made to involve the public during the public scoping phase. Initially, the larger Dutch Creek Channel Rehabilitation Project was posted on the Forest Schedule of Proposed Actions (SOPA) on June 30, 2014. Public meetings were held in June 2014. The project was originally scoped in November 2014. Five letters or emails with comments from the public regarding the project were received. The project record includes documentation of the letters described in this memo.

In response to scoping comments and TRRP Design Team discussions, the project was divided into two phases, the Lower Dutch Creek Channel Rehabilitation Project and the Upper Dutch Creek Channel Rehabilitation Project. The Lower Dutch Creek Channel Rehabilitation project was rescoped on June 13, 2015, and the scoping package was posted on the U.S. Forest Service (USFS) website on June 16, 2015. Comments were due by July 1, 2015. Four written comments and two oral comments by telephone were received on the Lower Dutch Creek Channel Rehabilitation Project.

This memo addresses issues identified during scoping of the Dutch Creek Channel Rehabilitation Project and rescoping of the Lower Dutch Creek Channel Rehabilitation Project. Comments received during the initial scoping of the Dutch Creek Channel Rehabilitation Project were retained and are addressed in this memo in regards to the Lower Dutch Creek Channel Rehabilitation Project. Since that time, the TRRP has determined that only one project—Dutch Creek—will be proposed at this general location.

RESPONDENTS

The following is a list of the individuals or groups who responded to the scoping letters, notices, or Schedule Of Proposed Actions (SOPA). Each comment submittal has been assigned a unique number and each concern within that comment has been assigned a unique letter (e.g., 1a).

Dutch Creek Channel Rehabilitation Project (Scoped November 2014)

1. G. R. Archerd (Archerd)
2. Gage Ferguson (Ferguson)
3. William C. Rich (Rich)
4. Tom Stokely, California Water Impact Network (CWIN), and Liam Gogan, Trinity River Guides Association (TRGA)
5. Denise Boggs, Conservation Congress (CC)

Lower Dutch Creek Channel Rehabilitation Project (Scoped June 2015)

6. William C. Rich (Rich)
7. Denise Boggs, Conservation Congress (CC)
8. Elisabeth Hemp (Hemp)
9. Joseph Scarr (Scarr)
10. Debbie Laffranchini (Laffranchini)
11. Kathy Rash (Rash)

ISSUE DISPOSITION PROCESS

Issues are statements of cause and effect, linking environmental effects to actions. Issues serve to highlight effects or unintended consequences that may occur from the proposed action and alternatives, giving opportunities during the analysis to reduce adverse effects and compare trade-offs for the decision maker and public to understand (FSH 1909.15 Ch. 12.42).

The interdisciplinary team reviewed comments from the public and other agencies to identify key issues. These issues were revisited after the 2018 design was developed, in part to address scoping comments. Key issues will then be carried forward in the environmental analysis process as a way to develop alternatives (alternative-driving issues) or analyze alternatives (analysis-driving issues) (FSH 1909.15 Ch. 12.4). The following process was used to sort through comments in order to identify key issues.

Categorize Concerns

Comments and concerns were assigned to one of the following categories. Similar issues were grouped by subject matter. This process is documented in Table 1 below.

Alternative-Driving Issue (key issue): Alternative-driving issues generally concern resources that may be impacted by implementation of the proposed action and cannot be resolved through project design. An alternative-driving issue is addressed by development and analysis of an alternative to or modification of the proposed action. The alternative may be analyzed fully or, if it does not meet the purpose and need, is illegal, is based on inadequate scientific evidence, or is

sufficiently similar to an alternative already considered in detail, the alternative will not be considered in detail.

Analysis-Driving Issue (key issue): Analysis-driving issues relate to a cause and effect relationship between the proposed action and its effects. They suggest a method to measure effects and identify potential effects caused by the proposed action that are relevant to the decision to be made and suggest how important or "significant" an effect might be. Analysis issues are carried through effects analyses by project specialists. Analysis issues will be analyzed in the project effects portion of environmental impact documentation. A description of the indicators used and the reasons for using those indicators would be provided in the relevant decision document (e.g., Finding of No Significant Impact).

Procedural Concern (non-key issue): It is common to receive scoping comments reminding the agency to consider or conduct certain processes, such as consultation with the U.S. Fish and Wildlife Service, or cumulative effects analyses. Procedural concerns may also address the methodology behind the analysis and why it is appropriate. For example, the analysis may include the use of a model or qualitative discussion of key resource characteristics based on professional expertise.

Other Concern (non-key issue). Other issues or concerns are designated as such for any of the following reasons:

- The issue is *beyond the scope* of the proposed action. The issue does not meet the purpose and need for action, falls outside of the project area, or is beyond the power of the agency to address.
- The issue is unrelated to the decision to be made.
- The issue is *already decided* or required by law, regulation, or policy.
- The issue is *conjectural* and not supported by scientific or factual evidence.
- The comment is *general in nature*, such as a position statement, and does not provide sufficient specific information which can be used to analyze effects.
- The comment *asks a question* that can be answered succinctly in the analysis document or in the response to comments.
- The comment *requests a modification* to the proposed action without explaining the environmental, social, or economic effect that such modification would address. Although not a true issue, these comments are carried forward to the alternative development stage.
- Statement of support.

Public comments and concerns were evaluated by the interdisciplinary team in the issue disposition process to identify key issues using the categories above. Table B-1 presents comments provided by the public during the scoping process, organized by commenter. Each entry contains the unique comment identifier; topic(s) (e.g., Botany); comment quote; and comment's disposition. The intent of Table B-1 is to assist line officers, interdisciplinary team

members, and the public in the identification and tracking of comments and issues. Key issues identified in the comment disposition column of Table B-1 are identified in italics.

Table B-1. Matrix for Identifying Key Issues from Cause-Effect Statements

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
1a	Other	Before, the T.R.R.P, river access along Steiner Flat Rd. was numerous.	Other: Beyond the Scope Other: Unrelated to the Decision to Be Made No actions are proposed in the Steiner Flat area under the current proposed action. The comment does not suggest an alternative for the current proposed action.
1b	Recreation, Transportation	Before the T.R.R.P,… along Steiner Flat Rd… there were true primitive camping areas, but after their restoration efforts, it is all designated now, looking more like a picnic area. Past projects took away primitive camping areas on Steiner Flat Road and made them look like picnic areas.	Other: General in Nature Analysis Driving Issue Dispersed recreational use occurs adjacent to Evans Bar Road. The proposed action has been modified to exclude recreational developments on National Forest System (NFS) lands within the environmental study limits (ESL) for the Lower Dutch Creek Project. Effects of the project on remoteness and aesthetics will be carried forward in the analysis: Proposed project elements could impact visual quality, Wild and Scenic River characteristics, and recreational activities.
1c	Recreation, Water Quality	At first it was deceptive in nature, with them having us believe it was all for the fish and wildlife, but as one who has followed behind all of “THEIR” restoration projects, they have done nothing but eliminated great fishing spots, filled the river up with even more silt and have limited river access even more than they ever have.	Other: General Statement Analysis Driving Issue The proposed action will not restrict the current level of public access to the river. The following key issues will be carried forward in the analysis: *i. Proposed project elements could impact visual quality, Wild and Scenic River characteristics, and recreational activities.* *ii. Proposed project elements could have an impact on water quality.*
1d	Recreation, Scenery	They have polluted the woods with surveying tape, stakes, and have even used ½ inch steel rebar to stake the so called native plants they replanted to cover the destruction that was created in their restoration projects in the first place.	Other: General Statement Analysis Driving Issue While there will be some evidence of human activity in the area during implementation and for several years following revegetation efforts; standard design features require us to remove them

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
			once the plants are established, typically 2-5 years after planting. The following key issue will be carried forward in the analysis: *Proposed project elements could impact visual quality, Wild and Scenic River characteristics, and recreational activities.*
1e	Other	They have wiped out river trails…	Other: General in Nature There is no specific measure suggested to drive an effects analysis for activities proposed under the current project. The comment does not suggest an alternative for the current proposed action.
1f	Other	They… cut channels everywhere there was access, and now you have to wade across these so called channels just to reach the actual river.	Other: General in Nature There is no specific measure suggested to drive an effects analysis for activities proposed under the current project. The comment does not suggest an alternative for the current proposed action.
1g	Other	They have left behind more garbage than was there in the first place. At one particular location they wouldn't even pick up the old tires and refrigerator that some fool had dumped 4 years ago. They have left behind old cables and broken equipment parts, cause even more erosion than before, blocked roads with boulders and put up locked gates on OUR public lands.	Other: General in Nature The comment does not suggest an alternative; however, it does suggest that previous TRRP projects have resulted in conditions that are inconsistent with the terms of construction contract. This topic is addressed using design features common to all action alternatives.
1h	Other	Not to mention changing the course of waterways, this is against the law if you or I were to do it.	Other: General in Nature The comment is a position statement. It does not suggest an alternative or suggest any environmental effects to be analyzed for the current proposed action.
1i	Other	The timber that has been dumped for so called habitat will continue to cause even more log jams, some even causing serious damage to riverfront property owners.	Other: General in Nature Other: Conjectural The comment does not suggest an alternative or suggest any environmental effects to be analyzed for the current proposed action. Furthermore, the statement is conjectural in nature as it is not based on scientific evidence.
1j	Other	They have outlawed suction dredging, all for the safety of the fish, but look at how many yards	Other: Already Decided

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		of rocks and gravel they injected into the river. One should visit downstream when they are doing their “injections” like I have, and you will see firsthand how much silt and debris floats downstream, filling in prime spawning areas. If anything they should be removing the rocks and silt, not adding to it.	Other: Beyond the Scope The California Department of Fish and Wildlife is responsible for determining suction dredging regulations. The comment addresses potential impacts from TRRP’s gravel augmentation program, or “injections.” The proposed action is for mechanical channel rehabilitation only and does not propose gravel injections.
1k	Other	On a positive note, at least some of these restoration employees have a job for now and it should add to our local economy, as long as “THEY” have something left to restore, as long as our Federal Government continues to waste millions of our tax dollars in new and creative ways.	Other: Statement of Support Comment noted.
2a	Other	Let me express my objection to all aspects of the proposed project. Objection is established on the fact that the state of California has illegally denied/deprived miners their Federal Statutory rights to explore and develop mineral claims on federal land in the state of California since 2009. Following the first statute stopping the Department of Fish and Wildlife’s longstanding permit program.	Other: Already Decided Other: Beyond the Scope The California Department of Fish and Wildlife administers the permit program. This is beyond the regulatory authority of the USFS and the Bureau of Reclamation and outside the scope of the proposed action.
2b	Other	The proposed project would place equipment and personnel in riparian zones, and considerable alteration to what has become the modern natural river course with its associated vegetative complex, would result.	Other: General in Nature Other: Already Decided Other: Beyond the Scope The commenter does not indicate any adverse effects that would be caused from the presence of equipment or personnel in riparian zones. Actions within the riparian zones (e.g., equipment, personnel) that have impacts on resources, including both the biological and human environment, will be addressed in the NEPA/CEQA document. As scoped, the proposed action has been developed to be consistent with the Shasta-Trinity National Forest (STNF) Land and Resource Management Plan (LRMP), which directs the USFS to “Maintain and restore natural connections with… floodplains, wetlands,…the physical integrity of the aquatic ecosystems, including shorelines, banks, and bottom

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
			configurations,…the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands,… the species composition and structural diversity of plant communities in riparian areas and wetlands…" (Ch. 4). The proposed action (as modified), as directed by management guidelines in the LRMP, requires equipment and personnel to be in the riparian zone. Changes to project design will not be sufficient to achieve the purpose and need without activity in the riparian zone.
2c	Other	The proposed channel project and associated activity would be deleterious, far in excess of any perceived threats that are credited to the Department of Fish and Wildlife's longstanding suction dredge permit program. Ironically, a very strong argument can be made and supported, that the permitted suction dredge program creates the very proposed additional and quality habitat desired through the proposed Rehabilitation project. Along with, the creation of new, tangible wealth via the reclamation of valuable minerals, and the reduction of other heavy metals.	Other: Beyond the Scope Other: Already Decided A suction dredge program is not part of the proposed action. The suction dredge program is regulated by California Department of Fish and Wildlife and therefore is not under the regulatory control or management of the USFS or the Bureau of Reclamation.
2d	Other	In closing and to sum up my position here, we can create all the habitat imaginable, and arbitrarily oppose other industry and activities, but if the fish with the eggs and sperm are permitted to be taken downriver, and don't arrive – the species doesn't multiply.	Other: Beyond the Scope Other: Already Decided Downriver fish harvest occurs outside the environmental study limits (ESL) of the proposed action. The proposed action (as modified) would not include changes to fish harvest practices. Fish harvest is regulated by other agencies and authorities.
3a	Other	Our family supports the TRRP in their intent to improve river ecosystems for juvenile salmonids but have a few ephemeral concerns which I will touch on here.	Other: Statement of Support Comment noted.
3b	Vehicular Access, Other	The concern we now have is with access along lower Evans Bar Road at USFS roads 10w15 and 10w16. We do not want any gates installed nor do we want river restoration designs to restrict the current level of access.	Other - Conjectural Analysis Driving Issue The commenter is referring to motorized trails10W15 and 10W16, which are open to all vehicles.

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
			Trail 10W15 is outside the ESL, and no actions are proposed for this trail. Trail 10W16 will be used for construction but access will be retained up to the point where it reaches the river. Trail 10W16a and the southern end of 10W16 will become part of staging areas C-7, C-8, and C-9 temporarily during construction. Public access will continue to be provided in these areas consistent with public health and safety requirements. Unauthorized use off of Trail 10W16 will be restricted using erosion control features; however, the public will continue to have access to the river along Trail 10W16. The following key issue will be carried forward in the analysis: Proposed project elements could impact visual quality, Wild and Scenic River characteristics, and recreational activities.
3c	Other	I can see that a gate would be good at the lower Evans Bar Road during restoration operations to keep people away from equipment and such, but limiting the access of property owners on Evans Bar would bring problems. I would ask that if a gate is necessary that a lock wheel or chain be installed so we can bring our own locks.	Other: Requests a Modification of Proposed Action Project design features will be incorporated into the proposed action and other action alternatives (e.g., modified proposed action) to address existing access and potential safety issues within the ESL. Consistent with established practices, the TRRP will be working closely with affected landowners to address impacts (including access) to private property during project implementation.
3d	Other	We do not want a bridge. We would rather have an overland route from Oregon Summit. Maybe you can help with that.	Other: Beyond the Scope Under the modified proposed action, vehicle access at the end of Evan's Bar Road (on NFS lands) will be designed to not restrict the current level of access. Alternative access to private parcels within or adjacent to the ESL is outside the scope of this project.
3e	Vehicular Access, Fisheries, Hydrology, Other	I would recommend the TRRP consider not allowing the river profile to change in such a way that it invites more auto crossings at Evans Bar. I would design the profile to limit that activity. Often the trucks are leaking oil, or driving over fish and other aquatic habitat in the process. I would	Other: Conjectural Analysis Driving Issue Based on conversations with the commenter, the area that is currently being crossed by vehicles is outside of the project area/ESL. We are not proposing any changes to the river profile that would increase

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		limit braiding the river between Soldiers Creek and Carr Creek in a way that allows any easier access. Build steep banks, deep pools, woody debris or some other feature that would preclude auto access anywhere other than along lower Evans Bar Road or the two USFS roads listed above. I would ask that restoration of the river in this section not change the road access to the two parking and boat crossing areas for Evans Bar residents.	opportunities for vehicular access in or across the river. We do not have any evidence that the proposed upstream channel modifications will reduce channel depth in the downstream area of Evans Bar. Therefore, comments suggesting changes to the river profile would occur are conjectural. The following key issue will be carried forward in the analysis: Proposed project elements could impact visual quality, Wild and Scenic River characteristics, and recreational activities.
3f	Wildlife	On a side note, we are aware that the mussel population in the river is robust, and quite possibly the largest quantity of biomass the river supports. We wonder if studies have been completed focusing on these animals. What is the age distribution for the few species present? Where is the recruitment occurring? We see mainly adult individuals in this section of river. How are affects being considered?	Other: Question Analysis Driving Issue The following key issue will be carried forward in the analysis: Proposed project elements could affect habitat for mussels. Since 2014, the TRRP has been evaluating restoration sites to determine the extent and location of mussel populations. In the recent Deep-Gulch Sheridan Creek project, mussel beds were successfully relocated from construction areas. Existing information on mussel populations in the Trinity River, primarily the western pearlshell (*Margaritifera falcate*), would be considered in discussion of impacts on biological resources (e.g., aquatic mollusks).
4a 5a	All specialists, Other	This project requires an Environmental Impact Statement because of the uncertainty of benefits and the likely significant negative impacts of this project. The environmental documentation for Trinity River Record of Decision (ROD) does not provide adequate coverage under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) for the substantial deviation that has been made in implementing the Trinity ROD. The proposed project represents a change in design philosophy that was not contemplated in the Trinity ROD and accompanying Environmental Impact Statement.	Procedural Concern Other: Beyond the Scope The NEPA effects analysis will determine whether an Environmental Impact Statement (EIS) is required. If, based on a review of the impact analyses prepared for the Lower Dutch Creek Project, the lead agency determines that significant environmental effects will result from the proposed action (as modified) or other action alternatives, an EIS will be prepared. From a CEQA perspective, the actions identified in the scoping process are generally consistent with those considered in the Master EIR; therefore, it is anticipated that an Initial Study will be sufficient for CEQA compliance. Large scale watershed restoration is beyond the scope of the proposed action,

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		Other measures contained in the Trinity ROD such as watershed restoration have been arbitrarily limited and have not been carried out as envisioned.	but the TRRP watershed working group is developing watershed restoration projects throughout the Trinity River basin. Furthermore, elements of the proposed action do contribute to restoring functions and values of watershed processes. For example, upland terrace areas and contractor use areas will be revegetated after construction to reduce future sediment inputs to the river.
4b 5b	Other	A new or supplemental EIS/EIR is required to analyze alternatives and realistically evaluate costs, benefits, impacts and mitigation for the proposed Dutch Creek project, as well as the cumulative impacts of other planned projects. The EIS/EIR must analyze alternatives to mainstem juvenile salmonid habitat creation such as full implementation of the watershed component of the Trinity ROD and tributary habitat restoration.	Other: General in Nature Other: Procedural Concern A new EIS/EIR is not required for the Lower Dutch Creek Channel Rehabilitation Project. The purpose of this project is to increase the quantity and quality of suitable rearing habitat for native anadromous salmonids and other native fish species in the Lower Dutch Creek project area while reestablishing geomorphic processes required to enhance alluvial features in the Trinity River. An analysis of cumulative effects will be conducted for each resource. The cumulative effects analyses will consider reasonably foreseeable future actions that fall within the cumulative effects boundary for each resource.
4c 5c	Hydrology, Fisheries, Recreation, Other	The proposed Dutch Creek project will likely result in the filling of pools in the project area, thereby violating one of the tenets of the Aquatic Conservation Strategy to "*Maintain and restore the physical integrity of the aquatic systems, including shorelines, banks, and bottom configurations."* The removal of riparian berms (terrace lowering) adjacent to existing river pools to attempt to create juvenile salmonid rearing habitat results in dilution of the river's power to scour sediments from the pools…. Pool filling is likely to happen for this project on at least two pools near the upper and lower environmental study limits for the project. While pool habitat is not considered the limiting factor for recovery of Trinity River salmonids, it does provide important holding habitat for adult salmonids and other species and life stages, as well as outdoor	Procedural Issue Analysis Driving Issue Other: General in Nature As a cooperating agency, the USFS has the responsibility to ensure that any actions authorized on NFS lands are consistent with the LRMP, including the Aquatic Conservation Strategy (ACS). The following key issues will be carried forward in the analysis: i. Proposed project elements could impact visual quality, Wild and Scenic River characteristics, and recreational activities. ii. Proposed project elements could have an impact on water quality. iii. Proposed project elements will affect anadromous fish habitat and populations. Resource specialists will analyze the effect of implementation of the proposed action on sediment input as it may affect aquatic resources. The hydraulic effects of the design features are modeled as part of the design process and will be incorporated

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		opportunities for fishermen and other recreationalists.	into analytical efforts in conjunction with site-specific resource information to evaluate consistency with the STNF LRMP, including the ACS. Fisheries specialists will ensure that potential effects to pool habitat are analyzed.
4d 5d	Hydrology, Fisheries, Recreation, Botany, Noise	Our collective observation is that impacts of these mainstem projects have been greater than anticipated, but without the promised benefits. Project impacts include increased river turbidity, reduced public access, reduced adult salmonid holding habitat, filling of pools, impairment of river navigation, spreading of noxious weeds, noise, truck traffic and damage to agricultural water supplies.	Other - Conjectural Analysis Driving Issue There are no agricultural water supplies in the project ESL. The following key issues will be carried forward in the analysis: i. Proposed project elements could have an impact on water quality. ii. Restoration activities have the potential to introduce noxious weeds into the area. iii. Proposed project elements could impact visual quality, Wild and Scenic River characteristics, and recreational activities.
4e 5e	Other	Mitigation Measures have not been adequate to reduce the numerous significant impacts to less than significant.	Other: Procedural Concern Other: General in Nature Project design features and resource protection measures will be incorporated into the proposed action and alternatives based on the environmental effects analysis disclosed in the NEPA/CEQA document. The comment is general in nature because it refers to multiple resources.
4f 5f	Other	In the case of agricultural water supplies, the Trinity Management Council (TMC) has specifically excluded the mitigation of impacts. This is demonstrated by ongoing unmitigated impacts to the Wellock agricultural water system at the mouth of Grass Valley Creek. What other agricultural water systems will be impacted by this project and others?	Other: Conjectural Other: Question The Wellock agricultural water system is approximately 20 miles upstream of the project area. No agricultural water systems exist within the proposed ESL and, therefore, will not be impacted.
4g 5g	Other	What justification is given by the TMC for failing to mitigate this significant impact [to agricultural water systems]?	Other: Beyond the Scope This comment is general in nature and does not address any proposed actions or areas of the Lower Dutch Creek Channel Rehabilitation Project.

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
4h 5h	Other	What are the cumulative impacts of over forty of these projects to various resources along and in the Trinity River?	Procedural Concern An analysis of cumulative effects will be conducted for each key resource addressed in the NEPA/CEQA document. The cumulative effects analyses will consider past, present, and reasonably foreseeable future actions at the appropriate scale for specific resources.
4i 5i	Botany	Invasive/noxious weed problems have been created by these projects and no efforts have been made to mitigate for past problem areas such as the Indian Creek project area across the river from the former “little yellow house” upstream of the Douglas City Highway 299 Bridge. That area was the subject of many complaints from the Trinity County Weed Management Cooperative and has yet to be treated for a massive star thistle infestation.	Analysis Driving Issue Impacts associated with the establishment or spread of invasive plants and/or noxious weeds will be analyzed in project effects portion of the NEPA/CEQA document. The following Key Issue will be carried forward in the analysis: Restoration activities have the potential to introduce noxious weeds into the area.
4j 5j	Fisheries, Hydrology, Wildlife	The justification of these projects is that it will improve juvenile rearing habitat and, therefore, short term impacts such as turbidity, mortality of juvenile salmonids, western pond turtles and yellow legged frogs, as well as the risk of fuel or oil spills from proposed river crossings are not significant.	Analysis Driving Issue The following key issues will be carried forward in the analysis: i. Proposed project elements could have an impact on water quality. ii. Proposed project elements will affect anadromous fish habitat and populations. iii. Vehicular river crossings create water quality issues, affect fish habitat, and increase the potential for a spill of hazardous materials into the river. iv. Proposed project elements could cause changes in amphibian and reptile habitat and populations.
4k 5k	Other	The SAB identified that increases in juvenile salmonid habitat from these projects may not be significant or even detectable: Final SAB report page 18: “…*while the constructed changes in habitat are substantial at the site scale (Table 4), they comprise a relatively small amount of the total area in the restoration reach. As such, their efforts on population response may be difficult to detect.*”	Other: General in Nature Other: Procedural Concern The comment does not suggest any modifications to the proposed action or identify additional effects to be considered in the NEPA/CEQA document. It addresses the effect of a suite of projects previously conducted by TRRP. The NEPA/CEQA document will consider the results of past monitoring when analyzing effects and the ability of the project to meet the purpose and need.

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
4l 5l	Fisheries, Hydrology	The projects themselves (in the absence of higher flows) have not been shown to reduce fine sediment within the restoration reach - Final SAB report p. 24.	Analysis Driving Issue Procedural Concern The following key issue will be carried forward in the analysis: Proposed project elements could have an impact on water quality. Additionally, other activities in the watershed that are designed to reduce sedimentation by reducing hillslope erosion will be considered in the cumulative effects analysis.
4m 5m	Recreation, Scenery	While it appears that some localized improvement of juvenile salmonid habitat has occurred, it is clear that with completion of over half of the projects, there is little if any benefit to show to Trinity River's fishery from extensively removing riparian vegetation with heavy equipment on a Wild and Scenic River and filling the channel with spawning gravel.	Other: Conjectural Procedural Concern Analysis Driving Issue No in-channel placement of spawning gravel is being considered for this project. A cumulative effects analysis will consider the effects of the proposed action when added to past, present, and reasonably foreseeable future actions. The following key issue will be carried forward in the analysis: i. Proposed project elements could impact visual quality, Wild and Scenic River characteristics, and recreational activities. Outstandingly Remarkable Values (ORVs) will be analyzed and maintained on the Wild and Scenic-designated portion of the Trinity River as directed by the USFS LRMP: "Manage to meet adopted Visual Quality Objectives. Unseen areas within any mapped VQO may be managed for modification except in recreation river corridors" LRMP pp. 4-65). The effect of the project on scenic quality will be analyzed and will be consistent with visual quality objectives (VQO) for the project area established in the STNF LRMP.
4n 5n	Other	Watershed restoration and tributary restoration have not been considered as alternatives to mainstem rehabilitation projects and must be considered in a new or supplemental EIS/EIR. Watershed and tributary restoration projects would fulfill the overall goal of restoring Trinity River fishery populations to levels that existed prior to construction of the Trinity River Division (TRD	Other: General in Nature Other: Beyond the Scope Procedural Concern A new EIS/EIR is not required for the Lower Dutch Creek Channel Rehabilitation Project (see response to Comments 4b and 5b). Large-scale watershed restoration is beyond the scope of the proposed action, but the TRRP watershed working group is

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		of the Central Valley Project (CVP) by creating and improving existing juvenile salmonid rearing habitat.	developing watershed restoration projects throughout the Trinity River basin. Furthermore, elements of the proposed action do contribute to restoring functions and values of watershed processes. For example, upland terrace areas and contractor use areas will be revegetated after construction to reduce future sediment inputs to the river.
4o 5o	Other	Watershed restoration projects keep sediment from the tributary slopes and out of the mainstem, which reduces flooding of property, another project purpose and need.	Other: General in Nature Other: Beyond the Scope The comment does not suggest any modifications to the proposed action or identify additional indicators to be considered in analysis.
4p 5p	Other	Steelhead and coho salmon are primarily tributary species and natural production goals for those species have not been met to date. Just because the TRRP says they cannot fund watershed and tributary projects, does not preclude the Forest Service from analyzing such an alternative to mainstem work in the NEPA document.	Other: Already Decided Other: General in Nature Other: Beyond the Scope The California Department of Fish and Wildlife manages fisheries natural production goals. The comment does not offer the USFS any modifications to the proposed action or identify additional indicators to be considered in analysis. No specific alternatives (actions or areas) are suggested. The TRRP has been actively involved in watershed efforts in tributaries via partnership and cooperation with federal, state, county, and tribal entities. The program has combined more than $3 million in funding with matching funds from partners, such as the USFS, to implement more than 35 projects from 2008 through 2014. This comment is beyond the scope because the proposed action is a mainstem restoration project.
6a	Cultural	Adherence to recommendations provided by Rich et al (2014) will avoid and minimize impacts to archaeological sites in the project area.	Procedural Concern Potential effects of project activities on archeological resources will be analyzed. The recommendations provided by the commenter will be considered.
6b	Vehicular Access	Evans Bar contains 80 acres of private land split into nine parcels. These parcels are long and narrow, with frontage along the river for access. No road reaches Evans Bar. One must ford the river during low flows if you want	Other: Asks a question The commenter is referring to motorized trails 10W15 and 10W16, which are open to all vehicles.

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		to drive over, otherwise there are two boat crossing locations. We use Evans Bar Road to reach these crossings. On behalf of the Evans Bar community, we would like for you to consider *not gating this road*. I have noticed that other river access points, once open to the public, are now gated at the locations of recent TRRP restoration projects. This road has been used to reach the properties on Evans Bar since the first automobile arrived. There was once a seasonal driving bridge just downriver from the current Lower Dutch Creek Project, last installed by Elmer Katt in the 1960's. If a gate must be used to protect the work equipment, we would request the ability to use our own lock.	Trail 10W15 is outside the ESL, and no actions are proposed for this trail. Trails 10W16 and 10W16a will be used for construction but will not be closed or gated. Unauthorized use beyond Trails 10W16 and 10W16a will be restricted using erosion control features; however, the current level of public access to the river will be maintained.
6c	Other	The Lower Dutch Creek Channel Rehabilitation Project study limit, and specifically locations C-1, C2, C-3, U-1, X-1 and X-2 is within the boundary of the Evans Bar Historic Mine and Townsite. *Recommendations were provided* in Rich et al (2014) to avoid and minimize impacts to specific features while operating within the property boundary.	Procedural Concern The effects of the modified proposed action on archaeological sites will be analyzed by specialists in the NEPA/CEQA document using the guidance and recommendations developed by Rich et al. (2014). As appropriate, resource protection measures will also be developed by archaeologists for inclusion in any decision document for this project.
6d	Vehicular Access	Contractor Staging Area C4 coincides with the upper parking area of the Evans Bar land owners. At this location we park and use boats to cross the river. This is a fairly active location for us in the summer and fall. There are ruins of a walking bridge here, built in the 1970s. This washed out in 1997, and we are not interested to rebuild at this time. *We hope to continue using this location* to park our vehicles and access our properties on the east side of the river. This is mapped as a county roadway.	Other: Asks as question A parking area is located at the end of motorized trail 10W16 and will not be eliminated by the proposed action. Activity area C-7 will be used periodically during construction, and activity areas C-8 and C-9 would provide alternate parking areas when portions of C-7 are in use.
6e	Other	This salt spring is situated along the west side of the river channel, as the base of the hillslope within Upland Terrace Area U-2. Will this feature be buried?	Other: Question Procedural Concern No, the feature will not be buried. The project boundary of activity area C-7 was

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		I would recommend considering *leaving the salt spring in place* and not burying it over without further review and resolution of any adverse effect.	revised to buffer this feature based on recommendations from archaeologists. The effects of the proposed action on archaeological sites will be analyzed by specialists in the NEPA/CEQA document. The guidance and recommendations developed by Rich et al. (2014) will be considered. As appropriate, resource protection measures will also be developed by archaeological specialists for inclusion in any decision document for this project.
7a	Other	The Conservation Congress appreciates the opportunity to provide scoping comments on the aforementioned project. Please incorporate them into the administrative record and respond to them in the draft environmental document.	Procedural Concern All public scoping comments have been incorporated into the administrative record. Although NEPA does not require individualized responses for comments received during the scoping process, in the interests of full disclosure, it is the intention of the TRRP and the STNF to respond to each scoping comment letter individually.
7b	Other	First, the Forest has once again demonstrated a lack of understanding of NEPA and the public participation process. We asked you specifically why there was only a 2-week comment period for this project and you responded "The Lower Dutch Creek Channel Rehabilitation Project proposes**, in general**, a subset of the activities proposed in the original proposal (the Dutch Creek Channel Rehabilitation Project) and proposes these activities within a smaller footprint. The original proposal was scoped in November 2014 and, as a result, **nearly every single activity proposed** in the Lower Dutch Creek Channel rehabilitation Project has already been presented to the public. **The public, therefore, has already had an opportunity to comment on these activities.** Further, the responsible official, David Myers, has decided that all comments received during scoping for the original proposal will be applied to the revised Lower Dutch Creek Channel Rehabilitation Project. As a result, the responsible official has determined that a scoping period of approximately two weeks is an appropriate length of	Procedural Concern Pursuant to Federal Regulations, "Because the nature and complexity of a proposed action determine the scope and intensity of analysis, no single scoping technique is required or prescribed." 36 CFR 220.4I(2). For this project, the responsible official determined that a two-week scoping period would be sufficient. It should also be noted that, other than commenter 7 (who did submit her comments within the specified timeframe), no other commenters expressed concern regarding the length of the comment period. Furthermore, it is the intent of the TRRP and the STNF to issue a public draft of the NEPA/CEQA document consistent with agency specific NEPA requirements.

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		time to solicit public input on the Lower Dutch Creek Channel Rehabilitation Project." (Email from Christopher Losi to Denise Boggs on June 17, 2015). The comments suggest a lack of understanding of what NEPA requires. First of all "in general" and "nearly every single activity proposed" suggests that *all* activities proposed in the current project were not proposed in the original. Second, the comment "the public" infers that all interested parties in November 2014 are the same as in June 2015. The FS cannot make that assumption. There very well could be new interested parties to this project that didn't comment previously during the November 2014 scoping period. Two weeks is insufficient for scoping for this project that refers to several other documents that aren't readily available to *all* of the public. We suggest an additional scoping period of 30 days.	
7c	Other	The scoping notice states the proposed action continues to rely on the Reclamation's TRRP. The 2000 ROD is 15 years old and out of date. This document needs to be revised to include current resource conditions. The drought in N CA has affected virtually all resources the Forest works with. Neither agency can ensure the success of this project without updating the 2000 ROD using the best available scientific information. The FS can certainly inform Reclamation of this concern during its collaboration on this project.	Other: General in Nature This comment does not describe an environmental effect that would arise from the implementation of this project. Further, commenter fails to explain how the analysis that supports the 2000 ROD is no longer valid. Management actions, including mechanical channel rehabilitation and watershed restoration projects, are being implemented in a manner that is consistent with the restoration strategy documented in the Trinity River Flow Evaluation Final Report (TRFEFR; USFWS and HVT 1999). That restoration strategy was subsequently evaluated in the Trinity River Mainstem Fishery Restoration Final Environmental Impact Statement (Trinity River FEIS/EIR; USFWS et al. 2000), and incorporated into the 2000 Record of Decision (ROD; USDI 2000).
7d	Other	While the goals of this project are admirable – to enhance fish habitat – there will obviously be significant environmental impacts. We believe the appropriate environmental document for this	Other: General in Nature This comment does not explain why significant environmental impacts are "obvious."

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		project is an EIS for the following reasons.	
7e	Hydrology, Fisheries	We request current population survey information for the anadromous fish species this project is alleged to improve; and current water quality information including TMDL levels, water temperature, sediment, and ERA. Projected post data should also be included otherwise there will not be any measurements available to monitor whether the project is being successful. How will ACSO be met considering the current degraded condition and the obvious impacts that will occur from the proposed project?	Analysis-Driving Issue The following key issues will be carried forward in the analysis: i. Effects of proposed action and alternatives on water quality. ii. Ability of proposed action and alternatives to meet ACS objectives. iii. Effects of proposed action and alternatives on anadromous fish.
7f	Other	The Forest has chosen to split the original project into two projects. The scoping letter states the Upper Dutch Creek Rehab Project will be scoped separately and at that time there may be a need to propose temporary road access to the Upper Dutch Creek Channel Rehab project through the Lower Dutch Creek Channel Rehab Project area. This proposed action would be discussed during scoping for the Upper Dutch Creek Project. This issue *must* be analyzed for this project because it is a *foreseeable and connected* action under NEPA and therefore must be analyzed in the current project. It appears the FS is attempting to lessen the cumulative impacts of the original project by splitting it into two projects. NEPA forbids such action.	Procedural Concern An analysis of cumulative effects will be conducted for each key resource and documented through the NEPA/CEQA process. The cumulative effects analyses will consider past, current, and reasonably foreseeable future actions at the scale appropriate for each resource topic. The Upper Dutch Creek Channel Rehabilitation Project is no longer under consideration by the TRRP and will not be analyzed as a foreseeable future action as part of the cumulative effects analyses.
7g	Other	The scoping letters attempt to give acreages for riparian reserves and roaded recreation in the project area and then states it is not necessary to determine the precise allocation of land between the two prescriptions. This is incorrect. NEPA requires such a distinction in order to evaluate impacts at the project level to different prescriptions.	Other: General in Nature NEPA does not require analysis for the sake of analysis. Rather, it requires an agency to analyze issues that may have a significant effect on the human environment. As is explained in the scoping letter, this project is designed to meet the objectives of the LRMP. The commenter does not explain why calculating the precise area of LRMP land allocations in the project area is needed to determine

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
			whether the project will have a significant effect on the human environment.
7h	Other	The scoping notice states that after stream rehabilitation activities are completed and depending on available funds, improved recreational opportunities could include improved public parking, a developed boat launch, parking areas, and potentially, addition of a toilet. The scoping document states the EA will analyze the most extensive recreational improvements. These are foreseeable actions and all of them must be included in project affects as well as cumulative effects analyses. Where would these developments potentially occur?	Other: Question Procedural Concern The proposed action has been modified to exclude any recreational improvements on NFS lands in the project area.
7i	Other	Would any [improved recreational opportunities] be in designated critical habitat for the NSO? If so we strongly encourage the FS to avoid any development in designated CHU.	Other: Question The proposed action has been modified to exclude any recreational improvements on NFS lands in the project area.
7j	Other	About a third of the project area is in designated critical habitat for the Northern spotted owl. The NSO has been proposed for uplisting to endangered by the FWS and its population is dramatically declining throughout its entire range. In N CA it has been declining at about 30% between 2009 – 2013 (2014 meta data has yet to be released). We expect the FS to consult with the FWS on this project for the NSO as well as any threatened or endangered fish species.	Procedural Concern A biological assessment will be prepared consistent with agency requirements under Section 7 of the Endangered Species Act. As appropriate, consultation with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NFMS) would be initiated if the agency(s) determines that the project may affect threatened or endangered species.
7k	Wildlife	Please provide data on any owl territories in the project area or within 15 miles of the project area; the current habitat conditions in the core areas and home ranges including N/R/F and dispersal habitat for each. Will any habitat be removed, downgraded or degraded in designated CHU or suitable owl habitat? We request protocol surveys using the 2011	Analysis-Driving Issue The following key issue will be carried forward in the analysis. Proposed project elements could affect northern spotted owl habitat and populations.

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		(amended 2012) protocol be conducted prior to project implementation and the results of those surveys provided to the public during the draft comment period. If surveys have not been conducted then the project should be delayed until they are conducted. Obviously this project has been being developed for many years so the Forest has no excuse for not conducting surveys using the latest protocol.	
7l	Hydrology	The temporary river crossing has the potential to cause significant water quality issues as well as a spill of hazardous materials into the river. It would be designed and constructed to meet the requirements for heavy equipment such as trucks, excavators, and scrapers, and it would be submerged to a depth of at least one foot under low-flow conditions. How long would this crossing be in place?	Other: Question Analysis-Driving Issue As a resource protection measure, the temporary river crossings will be in place from July 15 to September 15 during one calendar year. The effects of the temporary river crossings on water quality will be analyzed in the NEPA/CEQA document. The following key issue will be carried forward in the analysis: Vehicular river crossings create water quality issues, affect fish habitat, and increase the potential for a spill of hazardous materials into the river.
7m	Recreation	The project area is designated under the National and CA State Wild and Scenic River Act. Visual Quality Objectives (VQOs) must be analyzed and impacts to quiet recreational activities should be analyzed for this project.	Analysis-Driving Issue The following key issue will be carried forward in the analysis: Proposed project elements could impact visual quality, Wild and Scenic River characteristics, and recreational activities.
8a	Recreation	I see there is discussion regarding potential development of a parking lot-boat ramp-restroom on our area of Evans Bar on the Trinity River. As a part-time resident and landowner on Evans Bar for 63 years, I can address some very special and very important problems regarding this plan. This stretch of river is somewhat secluded, near a dead end stretch of dirt road. Maintaining drivability of this road through the seasons is a challenge. Increased traffic would exact a serious toll on the condition of the road. Keeping it maintained at this distant isolated	Other: Requests Modification Procedural Concern The modified proposed action would exclude any recreational improvements on NFS lands in the project area. Evans Bar road would serve as the primary access to the project area, and the modified proposed action would include design measures to ensure that the public access roads and trails within the project area would be maintained consistent with current standards established by Trinity County and/or the STNF. The direct, indirect, and cumulative environmental effects of use and maintenance of these

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		site seems very inefficient; resources would be stretched for no measurable benefit. However, a greater, more serious toll would be imposed on the landowners of the area. We have had several break-ins through the years on this quiet stretch of river. When some people of questionable character have found this spot, they have taken advantage of the circumstances: breaking in, stealing and even threatening us. We absolutely do not need more people brought to an area that the sheriff's department would find hard to police due to its distance from town or main roads.	public access routes will be considered in the NEPA/CEQA document.
8b	Other	We are excited about the restoration of the river and hope to see a thoughtful plan that is true to the spirit of the area.	Other: Statement of Support Comment noted.
9a	Other	I own property on the eastern side of the Trinity River near Evans Bar Rd. Our property touches the Trinity River and I am pleased at the rehabilitation efforts and hope they have a positive impact on the native fish species.	Other: Statement of Support Comment noted.
9b	Other	I am, however, greatly concerned at the wording found in the section regarding "C-4: Contractor Use Area." Specifically developing "improved public parking, a developed boat launch, parking area, and potentially, addition of a toilet." My family has been visiting this part of the Trinity River for 50 years. We own two plots of land and cabins and enjoy the peace and tranquility found here. I believe developing public parking will have a detrimental effect on native habitat due to increased human traffic, the potential increase in litter, and further increased threats due to fire. Just as you are working to protect native fish species, please do not	Procedural Concern Other: Beyond the Scope Other: General in Nature Redirecting restoration funds to improve economic conditions of local families is beyond the authority of the USFS and does not meet the purpose and need of the Lower Dutch Creek Channel Rehabilitation Project. The comment is general in nature because it does not suggest a specific effect on habitat. Impacts to fish and wildlife habitat will be addressed in the relevant sections of the NEPA/CEQA document.

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		develop this area for increased public access. I'm sure the money can be better spent directly helping the impoverished families in the county.	
10a	Other	I [Christopher Losi] got a call today [6/22/2105] from Debbie Laffranchini about the Lower Dutch Creek project. She is a landowner who recently bought property adjacent to the project area. She stated she is very much in support of a project that improves habitat for fish.	Other: Statement of Support Comment noted.
10b	Other	However she is concerned about the amount of noise the project might create and the duration of noise-making activities. She stated that she was not at all interested in opposing the project but wants more information. I just spoke with her and answered some questions about timing and duration; I explained that we would likely be implementing next summer and that implementation could last several months but that heavy equipment wouldn't be working the entire time. However, I couldn't really speak to the amount of noise, the number of days of implementation, or whether we would be operating on weekdays/weekends etc…	Other: Question The implementation target is summer 2017. Construction hours are 7 a.m. to 7 p.m. Surface-disturbance activities may be limited during the late spring (May and June), depending on the flow release schedule established for the particular water year. Heavy equipment operation usually occurs between July 1 and October 1, with instream work occurring between July 15 and September 15. This may change slightly as conditions on the ground dictate. Revegetation work (e.g., planting of willow pole cuttings and/or container plants and seeding with native grasses) would generally take place in the wet season (fall/winter) after construction. The NEPA/CEQA document will have a number of specific design features incorporated into all action alternatives to address issues related to noise and traffic, and other impacts on the human environment.
11a	Other	On July 6, 2015 I (Christopher Losi) spoke to Kathy Rash about the project. Ms. Rash insisted that the proposed action would encroach on the lower portion of her property. I explained that there wouldn't be any treatments on private property and that we had conducted surveys which showed the private property within the project area did not extend all the way down to the river bank. Ms. Rash stated that the BOR had not surveyed her property's boundary lines and that she did not and does not give permission	Procedural Concern Other: Not supported by fact The boundaries of NFS lands within the ESL for the Lower Dutch Creek Project were surveyed by licensed professionals. Permission by private landowners on contiguous properties is not required to survey NFS land. No treatments are proposed on private lands within the ESL. All project-related activities proposed on NFS lands will be subject to the terms and conditions authorized by the STNF.

Commenter (1) Commenter (a)	Topic	Comment Quote	Comment Disposition
		for BOR's surveyors to survey her property.	
11b	Other	Ms. Rash stated that she did not want us to install any dead wood in the stream bed; she was concerned that dead wood would be a hazard to river users.	Other: General in Nature Other: Conjectural Under the modified proposed action, a number of engineered wood features would be constructed throughout the project area at locations to reduce potential conflicts with river users. This comment does not suggest specific changes to the proposed action or specific metrics to analyze effects of the proposed action. There is no scientific evidence cited in this comment to suggest a cause and effect relationship between dead wood in the side channel areas and recreational hazards. However, recreational impacts will be analyzed in the NEPA/CEQA document.
11c	Other	Ms. Rash stated that she was concerned that the activity within the area would improve public access to her property which she did not want.	Other: General in Nature There are no proposed activities which would increase public access from NFS lands to private lands between Soldier and Carr Creek on the east side of the river from Evans Bar Road. The commenter does not specify a cause and effect relationship between the proposed action which would increase public access to her property.
11d	Other	Ms. Rash stated that, even if her property did not extend all the way to the river bank, she did not want dead wood placed on the strip between her property and the river bank.	Other: Position Statement Other: Conjectural A large wood placement is proposed only on federal lands managed by the BLM. The project boundary has been revised to exclude private lands other than those associated with activity area C-10.

KEY ISSUES (CONSOLIDATIONS OF THE ISSUE STATEMENTS ABOVE)

The following issue statements are considered key issue statements because they are not beyond the scope of the Proposed Action (as modified); are relevant to the decision to be made; are not already decided or required by law, regulation, or policy; are not simply conjectural and/or are supported by science (even if it is not our best available science); are specific to the proposed action; are not questions; are not modifications to the proposed action; and are not statements of support for the project. Some of these key issue statements are consolidations of cause-effect statements above:

Analysis Driving Issues

Fisheries/Hydrology

1. Proposed project elements could have an impact on water quality (Comments 4c, 5c, 4d, 5d, 7e)
    a. Analysis: fine sediment, turbidity, TMDL levels, water temperature, ERA
2. Proposed project elements will affect anadromous fish habitat and populations (Comments 4c, 5c, 4d, 5d, 4j, 5j, 4l, 5l, 7e)
    a. Analysis: Riparian habitat, juvenile salmonid rearing habitat, juvenile salmonid mortality, adult holding habitat (e.g., potential for pool filling), existing population surveys
3. Vehicular river crossings create water quality issues, affect fish habitat, and increase the potential for a spill of hazardous materials into the river (Comments 3e, 7l).
    a. Analysis: risk of hazardous material spills, construction crossing frequency, vehicular crossing frequency
4. Proposed project elements may be inconsistent with the ACS objectives temporally and spatially (Comments 4c, 5c, 7e).
    a. Analysis: water quality, ACS objectives, anadromous fish

Wildlife

5. Proposed project elements could affect habitat for mussels (Comment 3f).
    a. Analysis: alluvial habitat
6. Proposed project elements could cause changes in amphibian and reptile habitat and populations (Comments 4j, 5j)
    a. Analysis: western pond turtles, yellow legged frogs
7. Proposed project elements could affect northern spotted owl habitat and populations (Comment 7k).
    a. Analysis: current habitat conditions in core areas, current habitat conditions in home range, dispersal habitat

Recreation and Visuals

8. Proposed project elements could impact visual quality, Wild and Scenic River characteristics, and recreational activities (Comments 1b, 1c, 1d, 4c, 5c, 4d, 5d, 4m, 5m, 7m)
    a. Analysis: fishing opportunities, river navigation, recreational access (legal and illegal), remoteness and sense of solitude, Wild and Scenic River values, and visual effects

Botany

9. Restoration activities have the potential to introduce noxious weeds into the area (Comments 4d, 5d, 4i, 5i)
    a. Analysis: noxious weed diversity and abundance

Copies of the original comment letters can be found in the Forest Service project file.

APPENDIX C

Comments on Public Draft EA/IS and TRRP Response

APPENDIX C

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) Comments

Comment Letter 1

Held, Kevin <kheld@usbr.gov>

Trinity River Channel Rehabilitation Site: Dutch Creek Environmental Assessment

Tom Nardi <t.nardi@comcast.net>
To: "Held, Kevin" <kheld@usbr.gov>
Cc: danreo711@gmail.com

Mon, Dec 17, 2018 at 6:24 PM

Truth be told Harold. You have already ruined enough of the river. [It is quite obvious that none of the planners are fisherman.]..... It's the most absurd restoration/destruction plan ever imagined and guess what, it's working. A

[The fishing have steadily dripped since the day you started.] My catch rates show from 20 a day to 20 a week to 20 a month to 20 a year to 2 a year and nothing has changed on my end. B

In addition to the above [you have made the river almost unfloatable making everyone ditch there hard boat and buy a raft.] My home(poker bar) was bought in 2009 and sold in 2017 because of this destruction. I don't have time in life to wait until nature fixes all the mess you have caused with skewed thinking. C

A 50 mile spawning bed with no fish to spawn and [water never high enough to go into the channels when fish are in the river.] You may not hear it but there is not a fisherman who fishes the river who does not eschew the EXACTLTY same thoughts. I have no skin left in the game so I can say what needs to be said. D

Thanks a Bunch

Tom 707 838 1820

COMMENT RESPONSE, LETTER 1

1A: Comment acknowledged. The design and planning teams for this project include anglers and whitewater enthusiasts. At the earliest design phase of TRRP projects, sensitive areas are marked within the project area boundary (see Appendix D, Figure D-1). Sensitive features are then considered in every subsequent design phase to ensure that they are preserved if they are unique on the river. At a minimum, design condition modeling results are evaluated to determine whether or not TRRP objectives would be met if sensitive areas would be impacted.

1B: Comment acknowledged. Although the commenter reports a continuous "dip" [or drop] in his catch, the abundance of Trinity River salmon has not been steadily decreasing in the time period referenced. Run size estimates are extremely variable from year-to-year and have fluctuated since 2005 and with TRRP activity. The best available estimate of Klamath River Basin Fall Chinook salmon spawner escapement is annually reported by CDFW in its "Mega table": https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=123560.

1C: Comment acknowledged. Scour and deposition of sediments is a natural river process resulting from flow interacting with sediment supplies; the 2000 Record of Decision (http://www.trrp.net/library/document/?id=227) specifically obligated the TRRP to restore this process, stating that "restoration and perpetual maintenance of the Trinity River's fishery resources require rehabilitating the river itself, restoring the attributes that produce a healthy, functioning alluvial river system." Both tributary flow accretion and restoration flow releases from Lewiston Dam move and deposit gravel supplied from the river and its tributaries in locations dictated by conditions.

1D: As described in our response to comment 1C, the objective of the TRRP is to restore or emulate natural river processes, including creating a topographically complex channel in the 40-mile restoration reach. The objectives of this project are no different. Currently, this reach of river is a simplified, flume-like channel that is largely confined to its banks until flows exceed 6,000 cfs, with decreasing juvenile rearing habitat as flows increase from base flows to 6,000 cfs. The design calls for the replacement of a run-glide reach with a riffle-run-pool sequence with substantial increases in floodplain available to the river at a wide range of flows. The project is not explicitly designed to increase spawning habitat because a foundational hypothesis of the program is that the river is limited more by availability of juvenile rearing habitat than spawning habitat. That said, the design condition is likely to also improve spawning conditions.

Comment Letter 2

Gutermuth, Frederic <fgutermuth@usbr.gov>

[EXTERNAL] Dutch Creek - SCARR

1 message

Joe <joescarr@gmail.com> Mon, Dec 17, 2018 at 7:34 PM
To: "GUTERMUTH, F." <fgutermuth@usbr.gov>

Greetings Mr. Gutermuth,

Regarding the "Draft Environmental Assessment/Initial Study...." on this page:
https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=36421

Please see attached image to this email: "C-10 Scarr.jpg"

I own three properties on Evans Bar (shown inside the white-outlined box) and two of them are marked with "Contractor Use Area" in the C-10 area.

I have read through some of the document and can appreciate how thorough it is. In particular I noticed these sentences:

["Activity area C-10 would be used for short-term storage of materials in accordance with private landowner approval."

"...however, several activity areas (e.g., C-2, C-10, U-2a and 2b) require the use of upland areas and would include the removal of conifers and other hardwood tree species."

A

As you may imagine I have some questions:

1) What materials or supplies would be anticipated to be stored for short-term on my properties?

2) Have any trees been designated for removal on my properties?

3) Would any other activities be likely to take places on my properties?]

Thank-you for your time and attention.

Kind Regards,
Joe

C-10 Scarr.jpg
988K

COMMENT RESPONSE, LETTER 2

2A: The comment from a landowner who owns several parcels within the project boundary included three specific questions related to the proposed action. Subsequent to publication of the draft EA/IS, the TRRP has been in discussions with this landowner to exclude any activities from parcels the landowner owns.. No TRRP activities (storage or tree removal) are now planned on the landowner's parcels.

Comment Letter 3

Gutermuth, Frederic <fgutermuth@usbr.gov>

[EXTERNAL] Questions and comment regarding Dutch Creek project from Marr

1 message

Matthew Marr <matwmarr@gmail.com> Sat, Dec 22, 2018 at 3:43 PM
To: fgutermuth@usbr.gov, Tom Marr <treemarr@yahoo.com>

Hi Brandt,

I am writing to provide a brief comment on the "Channel Rehabilitation Site: Dutch Creek (Proposed Future Site)" We may have further comments in the future, but, as the closest and most impacted property owners, we want to be sure to get some of our concerns onto the record now.

[What further steps are there before construction can begin on this project? What other reviews are required?] **A**

[We are strongly in favor of rehabilitation of the Trinity River to its natural state. The best and only certain way to do that is to remove the dams preventing the river from reshaping itself. Since the dam appears here to stay for now we want to make sure that other projects to take care of our fish stocks match the needs of the river and the local terrain.] **B**

[This Dutch Creek project has potential but does not conform to the lay of the land. As designed, the river would quickly restore its current course and undo all of this work. The price would be introducing machinery into a section of the river which has been relatively free from human action for decades. These paths would both be destructive during the process and make clearings that would encourage further humans to follow. Instead of punching through new tracks onto the right bank of the river, there are ample opportunities for rehabilitation projects on the left bank, which already has road access in this area]My family has been in this area for three generations and we would be happy to give you more feedback on how the river has evolved over the years. **C**

[We are surprised that our buildings are identified for removal in this plan. We have received no formal notice of any issue related to our property. There is no discernable environmental advantage to the river to remove our cabin. Our cabin has been at that location for more than 60 years. Rose Katz, who sold our family the property specifically said that our property extended to the river bank. That is what we bought and no one in any capacity has ever said differently. We do not understand why this teardown of our structures **D**

is included in this plan in any way as it seems completely disconnected from the otherwise noble goals of improving fish habitat in the plan.]

[Please provide whatever survey was done to create this new alleged boundary line and what our appeal process of it would be. Please give me any information you have on Relief Acts or other remedies we may have for this situation.] E

Please consider me a party to this and any future proposals related to Dutch Creek, Carr Creek, Evans Bar or affecting the Marr property and interests. Please also include Tom Marr, Treemarr@yahoo.com on your list of interested parties to this proceeding.

Thank you,

Mat Marr

955 N. Mountain Ave. Ashland, Oregon, and

Evans Bar, Trinity, California

P.s. I enjoyed our conversation on the phone last year and was looking forward to more dialogue on this issue. I was sorry not to hear from you again and instead find that the next version of the plan appears to be strictly worse for both the river and our family's interests. We are still open to talking anytime and working together for the best outcome for the Trinity River.

COMMENT RESPONSE, LETTER 3

3A: Following the close of the public review period, the planning team evaluates the comments received and any additional input before revising and finalizing the EA/IS. If no unmitigated significant impacts on the environment are uncovered, as defined by NEPA and CEQA, a decision document will be prepared and a Finding of No Significant Impact (NEPA decision) will be signed by the federal action agencies. Under CEQA, the Regional Water Board will likely determine that that the project is within the scope of the Master EIR (See Appendix A – Environmental Checklist form) and that no further environmental analyses are required. After finalization of these documents, permit applications will be submitted to the USACE and Regional Water Board. A Conditional Letter of Map Revision application will be also be filed with FEMA noting any changes in flood elevations that will result from the project. No ground-disturbing actions will occur prior to completing the NEPA/CEQA process and obtaining all required permits and authorizations from the federal, state and county agencies.

3B: The commenter acknowledges that the Department of Interior explicitly determined that the dams would remain in place when the TRRP was established. From the 2000 ROD (p 10; http://www.trrp.net/library/document/?id=227): "The alternative of removing Trinity and Lewiston Dams was not considered a viable alternative because of the environmental impacts, forgone benefits, and costs associated with dam removal." Alternative 1 as described and evaluated in the EA/IS was developed by a team of engineers and scientists to incorporate the specific features and characteristics of the "local terrain" of the project reach in a way that balances the use of mechanical actions and activities in conjunction with flow and sediment management at the larger scale.

3C: Comment acknowledged. The TRRP learns from each project implemented. For this project, a landscape architect was included during the design and review process to ensure that the post-project appearance, including revegetation efforts, would blend in to the surrounding area and would not be obtrusive.

The proposed design is a result of an iterative process and concentration on the least functional location within the project area, the river right floodplain (aka the runway). Hydraulic modeling for this project began in 2014 and has been revaluated through the design process to ensure that the constructed features perform as designed. The slope of the new channel and composition of the medial bar that redirects the constructed meander sequence were engineered to minimize the risk of the river occupying its original channel. That said, the project is not designed to be static; it is rather intended to introduce dynamism in a reach of river that is largely locked in place due to entrenchment in historic mine sediment and post-dam riparian berms.

This section of river, like most of the upper Trinity River and particularly the Junction City Valley (of which this is the upstream end), was dramatically altered by a combination of hydraulic and dredge mining. While there is a thin string of riparian vegetation against the banks on both sides, the river in this reach has a very unnatural channel form and effectively no functional floodplain. The large flat bar on river right (looking downstream) is largely composed of deposited mine sediment that has little to no ecological function; the primary impetus for the design is to create a more sinuous channel with a floodplain that inundates through a range of likely flows.

The project would create temporary surface disturbance on the river-right access route. This disturbance is unlikely to invite additional human access beyond the river-right property owners' existing access to

the current road since there is no outside road access to that area without crossing the river, which is not feasible in a passenger vehicle. The design for this site does not include substantial rehabilitation actions on river left for several reasons, including (1) shallow bedrock that constrains possible actions, (2) a developing mixed-evergreen forest that provides wildlife habitat and is of value to the BLM land managers, and (3) river-left access routes that were generally not deemed to be practical for construction vehicles.

3D: During boundary survey work performed by the TRRP to demarcate the public land boundaries and corners, it was observed that structures (e.g., cabin, shed) in the C-11 Activity Area shown on Figure 2-1 of the EA/IS appeared to be located on NFS lands managed by the Shasta-Trinity National Forest. We acknowledge that the proposed removal of structures from NFS lands is not a TRRP objective; therefore, the activity associated with removal of these structures is now excluded from any NEPA decision that Reclamation would make to authorize the Dutch Creek project.

3E: The first map of this area in the public record is the Map of Township No. 33 North, Range No. 10 West, which was created by the General Land Office (GLO) and approved by the Surveyor General's office in 1892. In 1969, the BLM performed a Dependent Resurvey of the 1892 GLO map. The boundary line that defines the western line of the South 1/2 of the South 1/2 of the East 1/2 of the East 1/2 of the Northwest 1/4 of Section 32, Township 33 North, Range 10 West, namely the line between the Center-East-Northwest 1/64 corner and the Center-East-West 1/64 corner, is defined by two brass cap survey monuments that BLM set in 1969 for that Dependent Resurvey. The Dependent Resurvey map was approved by BLM in 1975, and the map shows a tie to a "cabin" outside of the above described portion of Section 32. Technically, this cabin is shown in the South 1/2 of the West 1/2 of the East 1/2 of the Northwest 1/4 of Section 32. In 1989, BLM approved a more detailed Dependent Resurvey and Survey map where the two corners mentioned were found and accepted during a portion of the survey. The field notes describe "The SE cor. of a cabin, 12 x 20 ft., bears N. 66 1/2° W., 3.47 chs. [229 ft.] dist." from the Center-East-West 1/64 corner. This description matches the 1975 map. Both of the above corners were recovered in a recent survey contracted by the TRRP (Record of Survey filed in Book 23, Maps and Surveys, p. 134, Records of Trinity County).

TRRP understands that further investigation of potential remedies through the Small Tracts Act, or otherwise, is being conducted by the Shasta-Trinity National Forest under the direction of the District Ranger of the Trinity River Management Unit. This remedy is now a lands matter between your family and the Forest Service.

Comment Letter 4

Gutermuth, Frederic <fgutermuth@usbr.gov>

[EXTERNAL] RE: SCH# 2018122041 Trinity River Channel Rehabilitation Sites: Dutch Creek Project

2 messages

From: Totton, Gayle@NAHC <Gayle.Totton@nahc.ca.gov>
Sent: Wednesday, December 26, 2018 10:03 AM
To: Falcone, Gil@Waterboards <Gil.Falcone@waterboards.ca.gov>
Subject: SCH# 2018122041 Trinity River Channel Rehabilitation Sites: Dutch Creek Project

Good morning Mr. Falcone,

I have finished reviewing the EA/IS for the above referenced project. While the document is in compliance with AB-52 under CEQA, there is one error in the Environmental Comments section that needs to be corrected prior to the document being certified.

A

EC-CU-2 misstates the time a Most Likely Descendant (MLD) is given to make recommendations for the disposition of Native American human remains. Public Resources Code section 5097.98 (a) states that the MLD has **48 hours from the me they are given access to the site** to make recommendations.

Please correct this error as soon as possible. I would appreciate seeing a copy of the final text for that condition if possible.

Thank you,

Gayle Totton, M.A., Ph.D.
Associate Governmental Program Analyst
Native American Heritage Commission
(916) 373-3714

COMMENT RESPONSE, LETTER 4

4A: Comment acknowledged. The TRRP appreciates your thorough review of the EA/IS that brought an error in the text of EC-CU-2 to our attention. This error has been corrected in both Appendix E, the Environmental Commitments table, as well as in Appendix F, the Mitigation Monitoring and Reporting Program.

The original Environmental Commitments language used in the December 2018 EA/IS stated:

"The NAHC will notify designated Most Likely Descendants, who will provide recommendations for the treatment of the remains within 24 hours."

The Dutch Creek Project EA/IS now uses the following language (the change is in bold) in both Appendix E and Appendix F:

"The NAHC will notify designated Most Likely Descendants, who will provide recommendations for the treatment of the remains within ***48 hours from the time that they gain access to the site****."*

Comment Letter 5

Gutermuth, Frederic <fgutermuth@usbr.gov>

[EXTERNAL] Trinity River - Dutch Flat

1 message

Denise Boggs <denise@conservationcongress-ca.org> Thu, Jan 17, 2019 at 2:17 PM
Reply-To: Denise Boggs <denise@conservationcongress-ca.org>
To: fgutermuth@usbr.gov

Mr. Gutermuth,

[Conservation Congress submitted scoping comments on this project years ago and one of our primary concerns was impacts to Northern spotted owl and its critical habitat. I have reviewed the new EA released last month and was pleasantly surprised to see you revised the project area to avoid most of the designated critical habitat. I understand the project will require removing a few mature trees, but will no longer clear several acres of critical habitat. It's nice to see an agency take public comment seriously.] I often complain to agencies when I think they are wrong, so its my pleasure to thank you for doing what I think is right on behalf of the resource. **A**

[I would like to see the BA that will be submitted to the USFWS.] If you could send that to me when its available I would appreciate it. Thank you. **B**

Denise Boggs
Conservation Congress
www.conservationcongress-ca.org

"We Americans are not usually thought to be a submissive people, but of course we are. Why else would we allow our country to be destroyed? Why else would we be rewarding its destroyers? Why else would we all — by proxies we have given to greedy corporations and corrupt politicians — be participating in its destruction? Most of us are still too sane to piss in our own cistern, but we allow others to do so and we reward them for it. We reward them so well, in fact, that those who piss in our cistern are wealthier than the rest of us. How do we submit? By not being radical enough. Or by not being thorough enough, which is the same thing." Wendell Berry

COMMENT RESPONSE, LETTER 5

5A: Thank you for recognizing the changes that have been made to the project over time to avoid designated critical habitat for the northern spotted owl. As you state, there will be some trees that have to be removed within critical habitat, but construction monitors and our riparian ecologist will ensure that the contractor minimizes our footprint there.

5B: We will make the BA available for your review when it is finalized.

APPENDIX D

Project Details

APPENDIX D

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) Project Details

DESIGN CONTEXT

The remote nature of this site, sensitive environmental conditions and the highly modified nature of aquatic, riparian and upland habitat within the Dutch Creek project area presents a unique opportunity to aggressively reshape the channel geometry, increase floodplain connectivity, reintroduce large wood to this reach and increase the overall complexity and functionality of habit for fish and wildlife species.

This design began in 2013 and incorporates input from an independent value engineering study and numerous consultations with the Program and other members of the Trinity River Restoration Program (TRRP) design team. The California Department of Water Resources (DWR) design group prepared a design report that incorporated the input from two separate scoping efforts, consultants and the TRRP design team into the current design of the rehabilitation site. The design allows for immediate and dramatic improvements in salmonid habitat for all life stages by introducing large areas with suitable flow depth, velocity and cover. Riparian ecosystem health and floodplain connectivity is addressed throughout the project site. The sharply meandering planform geometry creates opportunities for future entrainment of spawning gravel, lateral channel migration, and reworking of dredge tailings to dramatically increase the hydraulic complexity of the reach both near-term and into the future.

Design Considerations

The Dutch Creek site was identified by the TRRP as having high potential for rapid and dramatic improvement in salmonid habitat. The purpose of this analysis and design effort is to develop recommendations to advance one of the primary Program objectives, which is to mechanically reshape and scale the current channel form to interact with the contemporary flow regime, reestablishing physical processes that will create and maintain fish habitat.

The design objectives are as follows:

Physical (Geomorphic/Flow)

- Target width/depth ratios for gravel bars of at least 25 and preferably 40.
- Promote dynamic river processes (scour/deposition, width changes, lateral migration, sinuosity, etc.).
- Preserve alluvial potential of reach. Avoid armoring elements, such as ballast material using cobble/boulders greater than 6 inches and large wood pilings.

- Reduce dredger confinement of valley width.
- Promote fine sediment deposition on floodplain and low bench surfaces.
- Create multi-threaded, chute, and side channels where geomorphic conditions are appropriate for a multi-channel morphology.
- Utilize mainstem, tributary, valley wall water sources, and perched groundwater to reduce excavation to develop functional floodplains capable of natural riparian recruitment, as well as, benefit natural and constructed off-channel habitats.
- Create annual or seasonal surface water connection to existing water features.
- Reduce mainstem wood storage deficit (dynamic wood structures and standing inventory).
- Inundate floodplain benches with mainstem flows ranging between 1,500 cfs and 7,155 cfs.

Biological

- Increase and sustain fry rearing habitat area across a range of flows during the Jan 1 – April 30 time period.
- Increase lateral and longitudinal connectivity of fry/juvenile rearing habitat (Jan 1 – April 30) and pre-smolt / smolt habitat (April 1 – June 30).
- Increase area of vegetated surfaces experiencing continuous inundation duration of >= 14 days during normal and wetter years for fry/juvenile rearing (Jan 1 – April 30).
- Increase area of vegetated surfaces experiencing continuous inundation duration of >= 14 days during normal and wetter years for pre-smolt and smolt rearing (April 1 – May 31).
- Enhance existing good amphibian habitat (facilitate local warming in channel margin habitats to improve existing populations and breeding use).

Riparian

- Preserve patchy existing multi-story riparian vegetation and cottonwoods.
- Increase surfaces providing >21 days of moist soils within 0.85 ft of the ground surface during seed dispersal (April 1–June 30) in normal and wetter years surfaces for natural riparian regeneration, especially near local cottonwood seed sources. Surfaces meeting the flow duration criteria would inundate at approximately 2,200 cfs.
- Revegetate constructed floodplains and benches with native woody riparian, conifers, and understory species.

The design teams worked closely with Reclamation, Forest Service, and BLM cultural resources staff to avoid cultural resource features (e.g., dredge tailing deposits) that provide important information on the prehistoric and historic use along this reach of the Trinity River. Alternative 1 also considered the

location of cultural resources when identifying access and staging areas (e.g., C-7) and minimized work in designated northern spotted owl critical habitat (which does not reflect the physical and biological features of critical habitat per the 2012 USFWS Critical Habitat rule) by modifying the project boundary at several locations.

Initial design of the Dutch Creek site was assigned to the (DWR) design team. This team prepared a 30% Design Report in August 2017 for this alternative, which updates the earlier designs developed and initially scoped in 2014 and 2015 respectively. The two project designs that were previously scoped are considered in the EA/IS as "Alternatives Considered but Eliminated." The preparation of the current version of DWR's design report entailed a review of existing conditions at the site, such as vegetation communities, flow patterns, fluvial geomorphology, soil conditions and characteristics, and other physical characteristics; the reports also included an evaluation of future desired conditions, which considered the success of rehabilitation activities at other sites along the Trinity River and the opportunities available at the Dutch Creek site. Engineers with the Forest Service Enterprise Team have led the development of SLJ and WD designs in close coordination with DWR's design team.

DESCRIPTION OF ACTIVITIES

Alternative 1 consists of a number of activity areas. The types of activities proposed for these areas are based on those described and analyzed in Section 2.3.2 of the Master EIR (NCRWQCB and Reclamation 2009). The activity areas include in-channel, riverine, upland, contractor use, and access areas. While these areas are intended to cover the full range of activities, the actual area that would be treated would typically be smaller. Riverine areas are labeled with an R preceding the site number (e.g., R-1, R-2); upland areas are labeled with a U (e.g., U-1, U-2); in-channel work areas are labeled with an IC; construction staging/contractor use areas and access roads are labeled with a C; and structured log jams are labeled with an SLJ. In addition, wood placement (WP) is proposed to occur at appropriate sites within IC and R activity areas. These labels are used throughout this document.

Recontouring and Vegetation Removal

Under the recontouring and vegetation removal activities, the ground surface would be modified to reduce riparian encroachment and the risk of stranding of juvenile salmonids. To varying degrees, vegetation would be cleared and removed at all activity areas that would be subject to rehabilitation activities with the exception of crossings. Where recontouring is part of the proposed action (e.g., floodplain lowering), the entire site would be subject to vegetation removal but where possible, riparian vegetation (e.g., willows) would be salvaged and stored within the project area for use in subsequent revegetation efforts.

Grading would be required to construct or enhance topographic features that could develop into functional riparian habitat; excavation and the placement of fill would be balanced. In addition to the activity areas that would be cleared prior to grading, site-specific removal of trees (e.g., conifers and hardwoods) would be required to enhance the safety of the work site, reduce fuel loading, and improve local conditions for individual tree growth and wildlife; the trees that are removed would be used to construct large wood habitat structures. As illustrated on Figure 2-1 of the EA/IS, upland and contractor use areas (e.g., U-2a, C-2) include discrete locations where removal of vegetation is anticipated based on consultation with, and authorization by, BLM, the Forest Service, and landowners.

Vegetation removed from activity areas, including contract use areas) would be used for in-river placement as large wood or would be chipped or masticated for use as part of revegetation efforts to

increase nutrients in depositional areas and enhance the water holding capability of these deposits. Table D-1 provides an estimate of the maximum number and types of conifer and hardwood trees greater than 8 inches in diameter at breast height that could be removed from these activity areas. Activities would be accomplished using a variety of methods, including hand tools and heavy equipment such as excavators, bulldozers, dump trucks, and, potentially, scrapers. Where feasible, existing riparian vegetation would be maintained to facilitate future recruitment.

Table D-1. Maximum Estimated Tree Removal

Activity Area	Conifer	Hardwood
R-1	20	43
R-2	0	2
IC-2c	1	2
IC-7	0	59
A-2	8	25
A-3	1	15
A-4	4	4
C-2	35	30
C-4	16	24
C-5	17	1
C-6	1	0
C-7	2	3
C-10	37	26
U-2a	78	107
U-2b	4	10

Riverine Construction (R) - Lowered Floodplain

Riverine construction is defined as those activities that would occur at elevations above the active channel (e.g., 450 cfs) that typically occur during the authorized in-channel construction window (July 15 to September 15). The existing surface of R-1 would be lowered by as much as nine feet to create a functional floodplain with varying topography including a conveyance channel to provide water at flows as low as 700 cfs. R-1 is intended to provide habitat for juvenile salmonids prior to inundation of R-2 at the downstream end of the project. This lowered floodplain would promote deposition of fine sediments and organic material to enhance riparian revegetation. Revegetation is expected to ensue rapidly after construction as over half of the feature is within a foot of summer baseflow water surface elevation. Revegetation will ensure the cover component of habitat is available across the range of flows that inundate this area. Flows through R-1 would reenter the river through IC-2b. This activity area would convey about 20 % of the total flow at 8500 cfs.

The existing surface of R-2 would be lowered by as much as seven feet to provide functional floodplain habitat with a target inundation elevation ranging between 2,500 and 3,000 cfs. As the river rises and falls, this inundation level would change gradually across the lowered floodplain in a manner that would preclude stranding of salmonids and other aquatic organisms. Construction of this feature would result in shallow water depths and slow velocities across a wider range of flows than currently available. At flows of 8,500 cfs, this lowered floodplain feature would convey approximately 10 percent of the flow.

Vegetation would be cleared as necessary, and earth would be excavated in a manner that would be consistent with in-channel restrictions.

The construction of these features would provide important rearing and slow-water habitat for juvenile salmonids and other native anadromous fish, helping to restore the habitat complexity that was historically present in this reach of the Trinity River and that is required to support rapid growth of native fishes.

These activity areas would rely on a combination of natural recruitment of native riparian vegetation and riparian planting to enhance the establishment of native vegetation. Vegetation will be reestablished by Reclamation consistent with requirements outlined in the TRRP's 2016 Draft Riparian Mitigation and Monitoring Plan to meet the standard of no net loss of riparian vegetation from pre-project levels.

In-Channel Construction (IC)

In-channel construction includes those activities that would occur in the river under base flow conditions (e.g., 450 cfs) during the in-channel construction window (July 15 to September 15) authorized by the California Department of Fish and Wildlife. The construction of various types and sizes of grade control structures, including construction or excavation of alluvial features (e.g., bars, riffles, and pools), would increase channel complexity through promotion of channel migration, increased sinuosity, reduced fine sediment storage, increased coarse sediment transport, and restoration of depositional features (e.g., riffles, bars and islands) available for spawning and rearing habitat. Riffles are the shallower, faster moving sections of a river. Gravel bars and islands provide habitat complexity as well as other ecological functions.

During construction of in-channel activity areas, earthen berms would be left as necessary near the upstream and downstream ends of constructed features to ensure that water quality standards are met. These berms would be removed at the end of construction if the water within these contained areas is of appropriate quality for discharge to the river or they may be left in place for removal by subsequent high flows. Alternatively, water in the constructed features may be pumped to uplands or slowly metered into the mainstem river post-construction. These techniques would ultimately reduce the amount of turbid water that would reach the Trinity River and would ensure that water quality permit requirements are met (e.g., no more than 20 nephelometric turbidity units (NTU) at 500 feet downstream of construction).

Meander Channel Complex (Bars, Riffles and Pools)

A meander channel complex that includes activity areas IC-1, IC-2 a, b, & c, IC-5 and IC-6 is intended to create a meander sequence with a bar-pool-riffle morphology that conforms to the current TRRP flow regime. Construction of this complex would increase channel length, complexity, sinuosity, and reduces slope in this section of the channel.

Activity area IC-2 will provide a diversity of water depths and velocities across a wider range of flows than the existing mainstem channel configuration. Activity areas IC-1, 5, and 6 are point bars and IC-2a and IC-2c are transverse riffles that would link the bars together and separate the pools. While the location of pools within these activity areas are not specifically identified on Figure 2-3, one is expected to be constructed along the downstream, outer bank portion of IC-2b (opposite bar IC-5) and two will be induced opposite of IC-1 and 6. The constructed meander channel is intended to capture 90% of flows up to 2500 cfs.

Mid-Channel Features (Side Channel and Island)

Activity area IC-4 would be a constructed bar (or island at flows greater than 2,500 cfs) using native alluvial materials to redirect about 90 percent of the mainstem flow into the meander channel complex, and direct about 10 percent into IC-3 (side channel) at flows up to about 2,500 cfs, thereby increasing sinuosity and providing additional rearing habitat. The downstream portion of IC-4 is expected to function as an alcove feature at flows less than 2500 cfs.

Mid-Channel Expansion

Activity area IC-7 would be excavated along the right bank to create slower velocities and reduced bed shear stress along the channel margin. The anticipated deposition of coarse sediment within and adjacent to this activity area is expected to function as a hydraulic control (a structure that regulates or alters the flow of water in the river) under baseflow conditions and possibly result in an increase in groundwater elevation at activity areas R-2 upstream. The proposed excavation of IC-7 will keep part of the existing riparian berm in place.

Upland (U)

Excavated materials (e.g., fill) that would not be used for instream construction would be placed in upland environments as fill on terraces formerly subjected to a variety of placer mining activities. Activity areas U-2a and U-2b have been located to ensure that there would be no increase in the elevation of the 100-year floodplain, consistent with requirements of Trinity County's Floodplain Ordinance. These activity areas would be used to place excess material excavated in the construction of riverine and in-channel activity areas. The boundaries of these fill areas were defined using a FEMA-approved modeling process; field verification by surveyors and engineers was performed to ensure these areas would be located at an elevation above the FEMA 100-year floodplain. Within these activity areas, the depth of fill would range from about one foot near the edge to as much as 35 feet, depending on the size and location of the activity area. Fill materials would be spread in uniform layers that would blend in with the natural terrain and provide stable slopes for revegetation. Activity area U-2a (BLM lands) is the primary location for placement of material excavated from activity areas on river right. In the event that additional space is required for placement of material excavated on river right, activity area U-2b located on national forest system (NFS) land would be used.

Detailed Master EIR Activities Described to Provide Additional Clarity Beyond That in Table 2-1 of Master EIR

Wood Features – Structured Log Jams and Wood Placement

Impacts associated with the use of organic (e.g., large wood, slash) and inorganic (e.g., boulders) materials were covered in the Master EIR under Sediment Management activities along with other activities that would facilitate channel construction and maintenance (e.g., excavation and placement of alluvial material in in-channel and riverine areas). The TRRP would use appropriate materials to cause and enhance changes in channel geometry intended to improve aquatic and wildlife habitat as well as ecological function. The addition of large rock (>6 inches) as ballast for rock/wood structures (e.g., structured log jams (SLJs)) would ensure that these structures would remain in place and confine the river, thereby increasing the power of the river to scour and maintain adult salmonid holding habitat.

As appropriate, large wood and accompanying slash removed as part of vegetation clearing activities would be retained and used for construction of SLJ and WP structures during riverine and in-channel activities to provide additional hydraulic and habitat complexity and temporary erosion control measures; these activities would potentially occur in any of the IC or R features. This activity could include large wood placement of individual pieces, small accumulations, and large habitat structures. The creation of SLJ and WP structures would develop topographical and hydraulic complexity and increase bank length to provide additional salmonid rearing habitat over a wide range of flows. The use of these structures would also improve spawning, holding and rearing habitat for anadromous salmonids.

Woody material is a natural part of healthy rivers. It provides important habitat for aquatic species by providing cover from high flows and predators. The low-velocity areas collect suitable spawning materials, and woody organic materials are a food source for aquatic insects. It can help create and maintain beneficial habitat features such as pools, islands, and gravel bars.

This activity may also include the construction of log jams (includes logs, slash/brush and sediment) to function as hydraulic controls and encourage the natural processes of scour and channel migration. Construction of larger habitat structures or log jams may incorporate rock and boulders as ballast to ensure that the structures themselves do not migrate with high flows.

Processed alluvial material would be created onsite (likely in R-1, R-2, and U-2a), obtained and imported from off-site gravel processing areas, or purchased from local vendors for delivery. Unprocessed material or “pit-run” dirt and gravel from onsite excavation may be used in the construction of features and for habitat enhancement, using methods that would be continuously monitored for compliance with turbidity standards when equipment is working in or near the river.

All large wood features would be designed so that local velocities would be safe for navigation during relatively low river flows (less than approximately 2,000 cfs). Natural wood material would be placed in a manner to reduce the chances of hazardous contact with swimmers and boaters at flows less than about 2,000 cfs.

Because of uncertainties about the availability, types, shapes, and sizes of the wood and the planned construction methods, the exact amounts and locations of wood placement are not known at this time. Trees, treetops, and branches for use in constructing large wood structures would be obtained onsite and/or opportunistically from other lawful sources (e.g., public or private lands where vegetation management activities have occurred) and delivered to the project area. The final locations and dimensions of SLJ and WP structure placement would be determined in the field based on direction from Reclamation’s field engineer.

Contractor Use Areas (C)

There are 11 activity areas that would be available as staging and contractor use areas. Nine of these areas (C-1 through C-9) would be directly associated with the construction and revegetation of riverine and in-channel activity areas (including in-channel wood features). These areas would be necessary for the temporary storage of equipment and materials (e.g., gravel, large wood, slash). Typically, these activity areas are subject to clearing and/or grading to varying degrees to ensure safe and efficient temporary work areas. They also serve as transportation corridors for moving equipment and materials from one activity area to an adjacent one. Water would be applied to these areas for dust abatement.

Activity area C-10 will be used to store and stage materials (e.g., logs, boulders) at several discrete locations identified by the land owners. Trees removed from C-10 to provide safe and functional staging areas would be used in the construction of SLJ and WP features.

Access Routes (A)

There are five routes identified as discrete activity areas. Only one of these is associated with an existing route open to the public; A-1 follows the route of an abandoned portion of Evans Bar Road Although activity area A-1 terminates at the intersection of C-7, Forest Service trail 10W16 continues up to the proposed crossing of the Trinity River at X-37. Forest Service motorized trail 10W16A is located within portions of activity areas C-7 and C-8. At the conclusion of the project, Forest Service motorized trail 10W16 will be reestablished in a manner that controls access by motorized vehicles to the existing location of the trail using a combination of signage, grading, and physical barriers (e.g., boulders). Forest Service motorized trail 10W16A would also be reestablished or relocated to provide public access to the river. Activity area A-2 would be the primary route from X-3 to C-6. This would be a temporary route used for project purposes and would be rehabilitated as part of the revegetation effort.

Activity area A-4 has been developed to facilitate removal of an abandoned vehicle within or adjacent to Riparian Reserves on NFS lands. The removal of the abandoned vehicle will require the use of heavy equipment to access, remove, and dispose of it in a manner that meets federal, state, and local requirements.

These routes would primarily be used by a wide array of heavy equipment and other vehicles, often requiring two-way traffic. The site-specific design and use of these routes would consider factors like topography, soils, existing vegetation, and the need for future vehicle access, e.g., for revegetation maintenance. Best management practices would be used to reduce the impacts of road-related sediment on the riparian and aquatic environments.

Temporary Crossings (X)

One temporary river crossing (X-3) and one crossing of an intermittent stream (X-2) would be required. Crossing X-3 would be a constructed ford, while crossing X-2 will be field fit to avoid the actual channel of Carr Creek where it disperses on the existing dredge tailing deposit.

Fords would be constructed using imported clean gravel and native alluvial materials excavated from the bed and bank of the Trinity River or adjacent sources. All temporary crossings would be designed and constructed to meet the requirements for heavy equipment such as trucks and excavators. Material used in the construction of the X-3 crossing would primarily be extracted from authorized activity areas. The number of vehicle trips using the river crossings would be minimized to the extent possible and these fords would not be used to transport excavated materials across the river. All excavated material (e.g., from lowering floodplains) would be placed on the same side of the river from which it was taken.

Due to requirements to retain passage for fish and boats, at least one-third of a river crossing would be submerged to a minimum depth of 1 foot under base flow conditions. The construction of the temporary river crossing X-3 would likely require some vegetation removal on either side of the crossing within an approved activity area adjacent to the crossing (e.g., C-7). All temporary crossings would be constructed in a manner that does not impede passage of aquatic organisms or navigability of vessels at the crossings. Crossing of Carr Creek (X-2), an intermittent stream on the right-bank (eastern side) of the Dutch Creek

site, would also be required and would be conducted at a location where the creek generally recedes below the ground surface in summer and fall.

Revegetation

To varying degrees, impacts to vegetation are anticipated at each activity area. Under this activity, revegetation of riparian and upland areas would rely on a combination of planting and natural recruitment of native species, consistent with TRRP's 2016 Draft Riparian Mitigation and Monitoring Plan and the needs of the Forest Service, BLM, and other cooperating, responsible, and trustee agencies and landowners. Native willows salvaged from activity areas during initial clearing efforts would be stored and used to revegetate activity areas; the willows would be replanted during construction to speed vegetation recovery. Replanting of affected native vegetation (e.g., shrubs, trees) would be completed after construction in accordance with a site-specific revegetation plan prepared by the TRRP. TRRP only uses plant materials from Phytophthora-inspected nurseries[1]. Wood Placement may be used in any activity area to enhance site conditions to benefit the revegetation effort. Except for activity area C-10 (private parcels), all C and U areas would be seeded and mulched with native grass seed; on private and NFS lands, a cover crop of non- persistent recleaned wheat (*Triticum aestivum*) would be planted within the Riverine (R) activity areas in conjunction with wetland plants and willows where appropriate[2].

In general, the TRRP objective is to ensure that riparian vegetation is minimally affected by implementation of Alternative 1 and is replaced at a 1:1 ratio to meet CDFW's standard of no net loss of riparian area habitat within the Trinity River corridor at this site. Revegetation would provide aquatic refugia at high flows, improve terrestrial habitat for birds and other wildlife, provide future wood recruitment, and provide future terrestrial nutrient input to the river. At this remote location, revegetation efforts will emphasize actions to create conditions that promote natural revegetation via the creation of wet (riparian) conditions. This would include burying or ripping wood into the soil in Upland activity areas to enhance moisture retention.

Design Considerations

Early in the planning process, the TRRP identified several sensitive features that are critical with respect to design considerations (e.g., deposition of pools, landowner access). Figure D-1 illustrates the location of these features[3]:

- Last hole on the left – Alternative 1 was refined over time to ensure that changes in river hydraulics upstream would not affect the size or function of this feature, which is important from both an ecologic and recreational perspective.

- Steelhead alley – Alternative 1 emphasizes work within this highly modified alluvial feature to reestablish complex riverine and riparian habitat.

[1]TRRP will ensure that plant materials used on NFS and BLM lands will meet the standards of the appropriate land management agency.
[2] Per BLM policy, recleaned wheat would not be planted on lands managed by BLM.
[3] Sensitive cultural resources were considered in the design process, but are not illustrated on this figure.

- River right residences – Alternative 1 would ensure that landowner access to their property would be available consistent with current use. It would also ensure compliance with Trinity County's Floodplain Ordinance and would cause no impacts to existing structures.

- Evans Bar Rehabilitation Site – Alternative 1 excludes the lower portion of the Dutch Creek site as scoped in 2014 and 2015 to preserve options for the Evans Bar site immediately downstream.

The design teams worked closely with Reclamation, Forest Service, and BLM cultural resources staff to avoid cultural resource features (e.g., dredge tailing deposits) that provide important information on the prehistoric and historic use along this reach of the Trinity River. Alternative 1 also considered the location of cultural resources when identifying access and staging areas (e.g., C-7) and avoided critical habitat for Northern spotted owls by modifying the project boundary at several locations.

Initial design of the Dutch Creek site was assigned to the California Department of Water Resources (DWR) design team. This team prepared a 30% Design Report in August 2017 for this alternative, which updates the earlier designs developed and initially scoped in 2014 and 2015 respectively. The two project designs that were previously scoped are considered in this document as "Alternatives Considered but Eliminated." The preparation of the current version of DWR's design report entailed a review of existing conditions at the site, such as vegetation communities, flow patterns, fluvial geomorphology, soil conditions and characteristics, and other physical characteristics; the reports also included an evaluation of future desired conditions, which considered the success of rehabilitation activities at other sites along the Trinity River and the opportunities available at the Dutch Creek site. Engineers with the Forest Service Enterprise Team have led the development of SLJ and WD designs in close coordination with DWR's design team. These design documents are also available at the TRRP data port.

Fire Protection and Prevention

Due to the high fire hazard and history of equipment-caused fires in Trinity County, construction contractors would be required to follow BLM and Forest Service requirements as well as applicable regulations of California Public Resource Code 4428-4442 (Fire Plan for Construction and Service Contracts) during dry periods to minimize the potential for the initiation and spread of fires from the work site. Removal of vegetation (e.g., weed whipping) along access routes may be required to enhance fire prevention and protection during the work period.

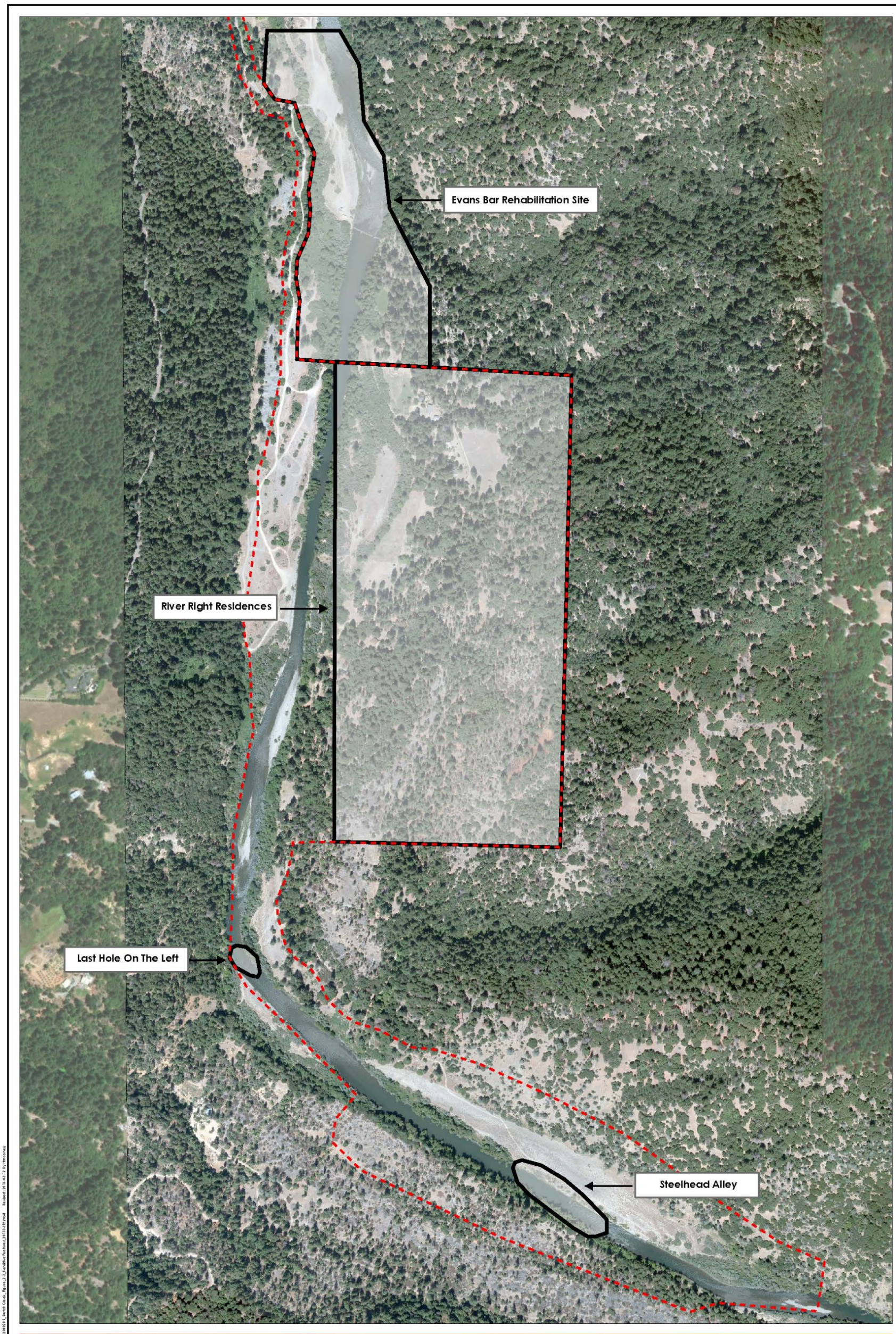

Figure D-1 Sensitive Areas

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Rehabilitation Activities

This section describes the discrete activity areas incorporated into Alternative 1. The activity areas include riverine (generally below the Ordinary High Water Mark, that is, areas along, but not in, the river channel), in-channel (wetted areas within the active low-flow river channel), upland (land lying above the 100-year flood level, that is, above the level where normal inundation occurs) and contractor use (construction support) areas. While these areas are intended to cover the full range of activities, the actual area that would be subject to one or more activities would typically be smaller.

Riverine areas are labeled with an R preceding the site number (e.g., R-1, R-2); in-channel work areas are labeled with an IC; upland areas are labeled with a U (e.g., U-2a); and construction staging/contractor use areas are labeled with a C. In support of the construction process, temporary access routes and stream crossings would be used. These activities are labeled with an A for long-term and temporary access routes and X for temporary channel crossings. SLJ and WP features are also included as discrete activity areas, although they may coincide with other R and IC activity areas. These labels are used throughout this document.

The proposed rehabilitation activities included in this alternative are listed in Table 2-2 in Chapter 2 of EA/IS. As the table shows, each activity area has been assigned a unique alphabetic label that corresponds to the type of activity area as well as the size and volume, as applicable. Figure 2-1 of the EA/IS illustrates the location of each activity area listed in Table 2-1 of the EA/IS.

The implementation of this alternative would require placement of alluvial materials at activity areas throughout the site. The size of alluvial materials necessary to construct the in-channel and floodplain features varies, depending on the function and location of the activity areas. Table D-2 describes the size classes of processed alluvial materials specified by the design team that would be excavated from riverine and in-channel activity areas and processed on site; in the event quantities of specific size classes are unavailable from within the site, material would be imported from local sources available to the TRRP.

Alternative 1 would use large wood and slash to enhance aspects of the design features. A combination of SLJ and WP features would be used to strengthen highly erosive points in select activity areas (e.g., R-2) until vegetation is established. In addition to erosion control, these features would be integrated into the design of R and IC activity areas to provide habitat cover and structure and would slow high-flow velocities to improve aquatic habitat over a range of flows. All wood structures and wood placement would be installed to mimic natural wood features that form on natural rivers. Wood pilings (if used) would be obscured behind horizontal logs or vegetated surfaces. The primary onsite sources of wood would include upland and contractor use areas (e.g., U-2a, U-2b, C-2, and C-10) and, to a lesser degree, riverine excavation areas (e.g., R-1 and R-2). The type and number of wood pieces anticipated to implement this alternative is described in Table 2-1 in Chapter 2 of the EA/IS. Where possible, whole trees, including the rootwad, would be removed and used in the construction of SLJ and WP features. In addition, trees removed as part of clearing activities may be felled, bucked, and yarded to locations to meet size specifications. Slash generated from tree removal activities would also be incorporated into the SLJ features and wood placement. Excess slash would be chipped or masticated and used as mulch for erosion control and revegetation efforts.

Table D-2. Material Types

Material	Description	D_{50} (inches)	D_{90} (inches)	D_{Max} (inches)	Percent Fines*
Clean gravel and cobble	Gravel and cobble between 0.5 and 6 inches intermediate diameter	2	5	6	0
Modified pit run	Excavated material processed to remove excess fines	2-3	5-6	10-12	<20
Cobble and small boulder	Cobble and small boulders between 5 and 12 inches intermediate diameter	7-9	10-12	14	0
Sorted cobble	Medium cobble between 4 and 8 inches intermediate diameter	5-7	7-8	10	0

*Fines are defined as material less than 0.5 inch in diameter.

Whole trees range in length from about 50 feet to about 100 feet[4]; typically, the conifers are longer than the hardwoods. Logs range from 10 feet to 35 feet in length. Where necessary, transport of wood from both onsite and off-site sources will be in a manner that would avoid impacts to known cultural resources (e.g., historic trail) using full suspension techniques at specific locations identified by TRRP cultural resources staff prior to construction.

Revegetation Activities

The TRRP's goal for revegetation of the Dutch Creek rehabilitation site is to promote the establishment and growth of a more diverse assemblage of riparian shrubs and deciduous hardwoods with varying ages so that the size, frequency, and distribution of native vegetation would increase in the future. By meeting this goal, the functions and values of native riparian and upland vegetation are expected to increase over time. In addition, the revegetation effort would focus on the expansion of large conifers and hardwoods that could be naturally recruited as woody material into the mainstem. The revegetation activities described in this section are based on the TRRP's project experience and subsequent yearly monitoring efforts since the first channel rehabilitation site (Hocker Flat) was constructed in 2006.

Revegetation at the Dutch Creek rehabilitation site would include preparing planting areas and planting a mixture of wetland, riparian, and upland plant species. A number of the plant species used for revegetation at these sites are used for various purposes by members of the Native American community. Revegetation efforts may also include the use of anadromous salmonid carcasses as a source of supplemental fertilizer in an effort to reintroduce marine nutrients into the riparian ecosystem. The plantings would include plants salvaged from the site; nursery container stock, bareroot plants; herbaceous plugs; and grass, forb, and oak (*Quercus spp.*) seeds. Plant species expected to be incorporated into the revegetation plan include California brome (*Bromus carinatus*), incense cedar (*Calocedrus decurrens*), sedge (*Carex spp.*), wildrye (*Elymus spp.)*, rush (*Juncus spp.*), ponderosa pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii*), mugwort (*Artemesia douglasii*), madrone (*Arbutus menziesii),* black cottonwood (*Populus trichocarpa),* oak, and willow (*Salix spp.).* Soil amendments, such as locally-obtained wood grindings and slash, would be incorporated into the soil

[4] Trees may be higher, but this length reflects some degree of breakage near the top of the tree prior to transport.

before planting, and all disturbed areas greater than 4 feet above the summer baseflow water surface elevation would be mulched with weed-free wheat straw at the rate of 2 tons/ac. Revegetation activities may start during the latter part of the construction efforts (e.g., planting and watering as appropriate) and would continue during the wet season (October through March) after final grading and site stabilization measures have been completed. Areas on the right bank are only accessible to equipment by crossing the Trinity River, so most planting there would be completed by the end of the instream limited operating period (anticipated to be September 15, 2019). Planting and seeding efforts may extend into the year following construction, depending on site and weather conditions.

The TRRP anticipates that most planting areas would not require watering post-project. However, some intermittent watering of revegetated areas during dry conditions may increase plant survival. Water for any irrigation would be pumped from the Trinity River consistent with existing riparian water rights available from willing landowners or from the river on public lands as authorized by the Forest Service and/or BLM. Equipment would be used to water plants as needed, stored on site for use during dry periods, or brought in as water demands require. Any irrigation measures would be temporary to improve establishment and survival of vegetation. The decision to implement irrigation measures would be based on site-specific monitoring information (e.g., soil moisture, plant stress) during or subsequent to initial revegetation efforts; however, due to the extreme inaccessibility of the site, post project irrigation would be minimized. Irrigation measures would likely occur during the first 3 years following initial revegetation efforts. Post-project monitoring may indicate the need for additional irrigation and other measures to ensure successful revegetation. These measures may include weeding, in-planting, and replanting as conditions require.

The revegetation prescription for the Dutch Creek rehabilitation site would treat approximately 9.3 acres in five elevation zones, and up to 40.7 acres would be seeded and mulched (undisturbed areas within contractor-use areas would not be seeded and mulched). Planting zones include emergent wetland (0.4 acre), herbaceous toe zone (0.8 acres), willow and cottonwood (6.34 acres), transition (0.75 acre), and upland (1.0 acre). Each zone would have different combinations of herbaceous, shrub, and tree species[5]. Plantings in wetland and toe zones would be herbaceous and would have approximately 3 feet between plant centers, with about 5,500 plants per acre. Plantings in willow, cottonwood, and transition zones would be sedges, shrubs, and trees and would have approximately 5 to 8 feet between plant centers, with about 872 plants per acre. Plantings in upland zones would be shrubs and trees and would have approximately 10 to 12 feet between plant centers, with about 326 plants per acre. Willow trenches would be selectively installed within the willow and cottonwood zones of R-1 and R-2 and willow cuttings would be planted at the rate of 10/linear foot. Arroyo willow (*Salix lasiolepis*), red willow (*S. laevigata*), and shiny willow (*S. lasiandra*) clumps that are salvaged from excavated areas will be placed in or near wood structures. The access routes would be planted with conifers and madrones as part of their decommissioning. Cottonwood poles would be planted in select areas as appropriate to increase species diversity. Conifers, madrones, and acorns would be planted in the spoils areas where the soil can be amended with organic material, and planting microsites would be prioritized by the amount of afternoon shade provided by the surrounding topography and vegetation. Organic material amendment consists of wood of various types (chipped, pieces, or logs) buried or ripped into surfaces and/or placed on top (e.g., mulch).

[5] All plant materials used in revegetation efforts would be acquired in a manner to ensure they are pathogen-free.

Access and Other Associated Activities

To support the rehabilitation activities, designated contractor use areas were identified by the design team to avoid sensitive resources. These areas would be used for stockpiling materials, staging equipment, contractor parking, and similar activities (these are labeled with "C" in Table 2-1 and Figure 2-1 in Chapter 2 of the EA/IS). Similarly, excavated material from each activity area would be stored in upland areas if it is not re-used onsite (these are labeled with "U" in Table 2-1 and Figure 2-1 of the EA/IS). Temporary access routes would be constructed to connect the activity areas to the main entrance route (these are labeled with "A" in Table 2-1 and Figure 2-1 of the EA/IS).

Primary access to the Dutch Creek site would be from the junction of Evan's Bar Road with A-1 through C-7 and would use crossing X-3 (low water ford) to gain access to activity areas on river left via A-2. Temporary access routes would be about 20 feet wide to allow use of off-highway trucks and other heavy equipment. Temporary access routes would be decommissioned after the site has been constructed and revegetation efforts have been successfully completed.

An additional crossing of the river upstream would be coincident with construction within an activity area in the general vicinity of IC-5. This crossing would be primarily used to provide access to activity areas on river left for equipment and worker access. It would also be used to convey rehabilitation materials (e.g., logs, slash) for placement of SLJ and WP features on both sides of the river. Crossing X-2 would be at a location identified in the field where Carr Creek goes under the surface during the summer.

There are two designated upland areas for construction spoils on river right. It is anticipated that U-2a (BLM land) would be the primary spoils area on river right; U-2b (NFS land) would be available as needed, depending on the quantity of material that would be spoiled. The actual footprint of these activity areas may be smaller than shown on Figure 2-1 of the EA/IS and would "field-fit," meaning that the footprint would be designed to minimize impacts to existing vegetation and habitat; the footprint would not be any larger than shown. Upon project completion, these areas will be seeded, mulched, and replanted with the appropriate native vegetation.

After construction of the project has been completed, a portion of Forest Service motorized trails 10W16 and 10W16A would be reestablished concurrent with the rehabilitation of activity areas A-1, C-7, C-8, and C-9.

Construction Methods and Schedule

Earthmoving equipment that may be used to complete the rehabilitation activities includes off-road articulated dump trucks, wheel loaders, tracked excavators, dozers, push-pull scrapers, water tenders, and graders. In addition, equipment capable of driving piles (e.g., large logs) with a hydraulic ram may be used to anchor or stabilize wood structures in various activity areas. For materials such as large wood that would be hauled from off-site, trucks capable of hauling up to 20 cubic yards at a time would obtain the materials from private forested lands throughout the Trinity River watershed.

Large boulders, cobbles, and gravel would primarily be obtained through processing of alluvial material in the project area (e.g., R-1, R-2, and U-2a) or would come from a local commercial source. Gravel would be transported from clean stockpiles stored at previous TRRP channel rehabilitation/gravel processing sites. Potential stockpiles include those on private lands at the Lower Junction City and Upper Junction City sites, as well as at other authorized sources on BLM lands.

The proposed rehabilitation activities are planned for construction in 2019 or thereafter. Some staging of materials, such as trees and gravel, may occur on private land within the project area before construction begins, and on BLM and NFS lands after completion of the NEPA process and acquisition of required permits. The flow-release schedule established for a particular water year may limit surface disturbance activities below the ordinary high-water mark during the late spring through early summer. Processing of alluvial material dredger tailings (i.e., R-1, R-2) is expected to take 4 to 6 weeks. Revegetation work (e.g., planting of willow pole cuttings and/or container plants and seeding with native grasses) would generally take place in the wet season (fall/winter) following construction or during the year after construction. If access across the river is needed for revegetation work, equipment would use the crossings only during the in-river work window from July 15 to September 15. Subsequent access to river right would be by boat. Post-project, site maintenance construction activities would be conducted as needed during the time period covered by the right-of-way; affected landowners would be notified in advance.

In-river construction work would be a priority. It would be preferable to also perform the work associated with processing alluvial material at the site to reduce noise and air quality impacts. To increase efficiency and reduce construction-related impacts, processing and stockpiling activities would ideally occur once rather than several times during the project. To the extent possible, activity areas U-2a and R-2 would be the priority areas for processing and stockpiling within the project area. All river-right earth work will be completed by September 15. Alternatively, construction would be sequenced as funding and environmental constraints allow, within the guidelines discussed previously in this section. Post-project in-river site maintenance work (e.g., re-opening blocked side channels, replenishing wood features) would generally take place during the in-river work window (July 15 through September 15) of whatever year maintenance was deemed appropriate. Site maintenance that does not require in-river work or river crossings would generally take place in the fall or in the wet season, outside of the nesting period for bird species present in the area.

Environmental Commitments

Reclamation, as the implementing agency for the proposed rehabilitation activities, has committed to implementing the mitigation measures identified in the Master EIR to avoid or minimize potential impacts associated with this alternative. Table 2-1 of the 2009 Master EIR provides a comprehensive description of these measures. Appendix E is a list of specific environmental commitments (NEPA)/mitigation measures (CEQA) that are incorporated into the description of this alternative (refer to the MMRP in the Master EIR, Table 2-1 for descriptions of these measures). These measures have been incorporated as design features as defined under NEPA and are considered environmental commitments included in the modified proposed action for purposes of the NEPA analysis. They also serve as CEQA mitigation measures that will be implemented in accordance with a project-specific mitigation monitoring and reporting program (MMRP, Appendix E). The environmental commitments are described in Appendix E and are labeled according to their resource topic, as shown in Table 3-8 for easy referencing throughout this document. Also, throughout this document, reference to these commitments is cross-referenced with the corresponding mitigation measure from the MMRP.

APPENDIX E

Environmental Commitments

APPENDIX E

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) Environmental Commitments

Table E-1. Environmental Commitments (EC) [1]

Label	Commitment
Mineral Resources	
EC-MR-1	Reclamation will provide notice of the project to landowners in and adjacent to the project area and to individuals with mining claims within the project sites. Notice will be given prior to project implementation and will include a schedule of river access closures. Reclamation will coordinate with private landowners and owners of active mining claims to develop site-specific measures that can be implemented to avoid or lessen project-related impacts to mineral resources associated with the Trinity River and its tributaries.
Fluvial Geomorphology and Soils	
EC-GS-1	Reclamation will implement the following measures during construction activities: Areas where ground disturbance will occur will be identified in advance of construction and limited to only those areas that have been approved by Reclamation, as outlined in this EA/IS. All vehicular construction traffic will be confined to the designated activity areas, access routes, and staging areas. Disturbance will be limited to the minimum necessary to complete all rehabilitation activities. Clearly delineate the work zone (BMP AqEco-2). All supervisory construction personnel will be informed of environmental concerns, permit conditions, and final project specifications.
EC-GS-2	Reclamation will prepare a Storm Water Pollution Prevention Plan (SWPPP) to prevent erosion and control sediment into adjacent water bodies. Measures for erosion control will be prioritized based on proximity to the Trinity River. Reclamation will provide the SWPPP for review by associated agencies (e.g., BLM, USFS, the Regional Water Board, NMFS, and CDFW) upon request. Reclamation's project manager will ensure the preparation and implementation of an erosion and sediment control plan prior to the start of construction. The following features will be used as a guide to develop this plan: Prepare for unexpected failures of erosion control measures. Maintain a supply of erosion control materials onsite to facilitate a quick response to unanticipated storm events or emergencies. Consider needs for solid waste disposal and worksite sanitation. (BMP AqEco-2). Restore disturbed areas to pre-construction contours to the fullest extent feasible.

[1] Practices specific to Minerals, Geomorphology and Soils, Water Quality, and Fisheries are consistent with or include measures from the April 2012 National Best Management Practices for Water Quality Management on National Forest System Lands. (USDA, Forest Service, Volume 1: National Core BMP Technical Guide, FS-990a.

Label	Commitment
	Salvage, store, and use the highest quality soil for revegetation. Discourage noxious weed competition and control noxious weeds. Clear or remove roots from steep slopes immediately prior to scheduled construction. Leave drainage gaps in topsoil and spoil piles to accommodate surface water runoff. To the fullest extent possible, cease excavation activities during significantly wet or windy weather. Use straw bales, wattles, and/or silt fencing as appropriate. Before seeding disturbed soils, work the topsoil to reduce compaction caused by construction vehicle traffic. Rip feathered edges (and floodplain surfaces where appropriate) to approximately 18 inches deep. The ripping of the river's edge will remove plant roots to allow mobilization of the bed but will also intercept sediment before it reaches the waterway. Spoil sites will be located such that they do not drain directly into a surface water feature, if possible. If a spoil site will drain into a surface water feature, catch basins will be constructed to intercept sediment before it reaches the water body. Spoil sites will be recontoured and revegetated to reduce the potential for erosion. Sediment control measures will be in place prior to the onset of the rainy season to ensure that surface water runoff is minimized. Erosion control in project areas will be monitored and maintained in good working condition until disturbed areas have been seeded and mulched or revegetated in another fashion. If work activities take place during the rainy season, erosion control structures will be in place and operational at the end of each construction day.
Water Quality	
EC-WQ-1	The project will comply with the water quality objective for turbidity levels in the Trinity River, as listed in the most recent version of the Basin Plan for the North Coast Region (current version dated May 19, 2011), except during construction and the first extended period of high flows, which will comply with the General Permits issued to the TRRP: Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity. The 2015 General Order provides an allowable zone of turbidity dilution within which turbidity levels may be increased to more than 20 percent above naturally occurring background levels. Project activities that occur in areas outside of the active river channel will not increase turbidity levels by more than 20 percent above naturally occurring background levels. During in-river construction activities and until the first extended period of post -construction high flow (i.e., flows of at least 6,000 cfs inundate the project areas and floodplain for a minimum of 7 days) a zone of turbidity dilution within which higher percentages will be tolerated is defined in the 2015 general discharge permits as the full width of the river channel within 500 linear feet downstream of any project activity that increases naturally occurring background levels, provided that all other required controls and appropriate BMPs for sediment and turbidity control are in place and downstream beneficial uses are also fully protected. When naturally occurring background levels are less than or equal to 20 NTUs, turbidity levels immediately downstream of the zone of turbidity dilution shall not exceed 20 NTUs[2]. If naturally occurring background levels are greater than 20 NTUs, turbidity levels immediately downstream of the 500 linear foot zone of dilution shall not be increased by more than 20 percent above the naturally occurring background level. To ensure that turbidity levels do not exceed the thresholds described above during in-river project construction activities, Reclamation will monitor turbidity levels upstream within 50 feet of project

[2] At the time ins-stream construction is authorized, the natural background of the Trinity River in the vicinity of the project area typically ranges between 0 and 5 NTU

Label	Commitment
	activities (i.e., natural background) and 500 feet downstream of the in-river construction activities that could increase turbidity. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels. During in-river project construction activities, the Applicant shall monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities (point of compliance) that could increase turbidity. The Applicant shall monitor for turbidity increases and shall collect field turbidity measurements in accordance with Mitigation Measure 4.5 1a and Mitigation Measure 4.51b in the MMRP. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels. If grab sample results at the point of compliance indicate that turbidity levels exceed 20 percent above naturally occurring background or 20 NTUs, whichever is greater, remedial actions will be implemented to reduce and maintain turbidity at or below this threshold level at the point of compliance. Potential remedial actions include halting or slowing construction activities and implementation of additional Best Management Practices (BMPs) until turbidity levels are at or below 20 percent above naturally occurring background or 20 NTUs, whichever is greater. A monitoring report containing all turbidity measurements shall be submitted in a tabular format to the Regional Water Board and the land management agencies (Forest Service, BLM) upon annual project completion. The monitoring report shall be written in a manner that clearly demonstrates compliance with all water quality monitoring requirements.
EC-WQ-2	Fill gravels used on the streambeds, stream banks, and river crossings or alluvial material used for coarse sediment additions will be composed of clean, spawning-sized gravels (3/8- to 5-inches diameter) from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Clean gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater. Abutment and embankment materials will be native alluvium available from the project area.
EC-WQ-3	Reclamation will prepare and implement a SWPPP that describes BMPs for the project, including silt fences, sediment filters, and routine monitoring to verify effectiveness. Proper implementation of erosion and sediment controls will be adequate to minimize sediment inputs into the Trinity River until vegetation regrowth occurs. All required controls and BMPs, including sediment and erosion control devices, will be inspected daily during the construction period to ensure that the devices are properly functioning. Excavated and stored materials will be kept in upland activity areas with erosion control properly installed and maintained. Excavated and stored materials will be staged in stable upland activity areas. All applicable erosion control standards will be required during stockpiling of materials.
EC-WQ-4	To minimize the potential for increases in turbidity and suspended sediments entering the Trinity River as a result of access routes (e.g., roads), Reclamation will implement the following design features, as appropriate: Keep bare soil to the minimum required by designs. Erosion control devices/measures will be applied to areas where vegetation has been removed as needed to reduce short-term erosion prior to the start of the rainy season. Keep runoff from bare soil areas well dispersed. Dispersing runoff keeps sediment onsite and prevents sediment delivery to streams. Direct any concentrated runoff from bare soil areas into natural buffers of vegetation or areas with more gentle slopes where sediment can settle out. Disconnect and disperse flow paths, including roadside ditches that might otherwise deliver fine sediment to stream channels or other water bodies. Decompact (i.e., deep ripping-up to 18”) floodplain areas so that surfaces are permeable, and no surface water runoff occurs

Label	Commitment
	To reduce sedimentation to the Trinity River, access routes will be stabilized or decommissioned upon completion of work in those areas. Decommissioning is defined as removing those elements of a road that reroute hillslope drainage and present slope stability hazards.
EC-WQ-5	Construction specifications will include the following features to reduce potential impacts associated with accidental spills of pollutants (fuel, oil, grease, etc.) on vegetation and aquatic habitat resources within the project boundary: Equipment and materials will be stored away from wetland and surface water features. No hazardous materials, including fuels, oils, and solvents, will be stored or transferred within 150 feet of the active Trinity River channel. Areas for fuel storage, refueling, and servicing of construction equipment must be located in an upland location at least 150 feet from the active river channel or within an adequate secondary fueling containment area. Use vegetable oil or other biodegradable hydraulic oil for heavy equipment hydraulics whenever practicable when operating in or near water. (BMP AqEco-2) Ensure all equipment operated in or adjacent to the waterbody is clean of aquatic invasive species as well as oil and grease and is well maintained. Construction equipment that will come in contact with the Trinity River will be inspected daily. Vehicles will receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. External oil, grease, and mud will be removed from equipment using steam cleaning. Wash sites must be located in upland locations so that dirty wash water does not flow into stream channels or wetlands. Untreated wash and rinse water will be adequately treated prior to discharge if that is the desired disposal option. Gasoline engines and pumps operated on the floodplain will be isolated from the ground by an impermeable barrier so that any leaking petroleum products are isolated from the ground. Spill containment booms will be maintained onsite at all times during construction operations and/or staging of equipment or fueling supplies. Fueling trucks will maintain a spill containment boom at all times. The contractor will develop and implement site-specific BMPs, a water pollution control plan, and spill prevention and containment plan in accordance with applicable federal and state requirements. The contractor will be responsible for immediate containment and removal of any toxins released.
Fishery Resources	
EC-FR-1	The proposed construction schedule avoids in-channel work during the period which could affect spawning spring- and fall-run Chinook salmon, coho salmon, and steelhead or their embryos once in the gravel. As directed by the 2000 Biological Opinion (National Marine Fisheries Service 2000). Reclamation will ensure that all in-channel construction activities are conducted during late-summer, low-flow conditions (e.g., July 15-September 15). Alluvial material used for coarse sediment additions will be composed of washed, spawning-sized gravels (3/8- to 5-inches diameter) from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter; will be free of contaminants, such as petroleum products; and will pass Caltrans cleanliness test #227 with a value of 85 or greater.
EC-FR-2	To avoid or minimize potential injury and mortality of fish during riverine activities (e.g., addition and grading of coarse sediment), equipment will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the work area. Reclamation will minimize potential injury and mortality of fish during the use of low-flow channel crossings. The number and frequency of vehicles crossing the river will be minimized. Equipment and vehicles will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the crossing area, or a person will wade ahead of equipment to scare fish away from the crossing area.

Label	Commitment
	If it is necessary to divert flow around the work site, either by pump or by gravity flow, the suction end of the intake pipe shall be fitted with fish screens meeting DFG and NMFS criteria to prevent entrainment or impingement of small fish. Prior to dewatering, determine the best means to bypass flow through the work area to minimize disturbance to the channel and avoid direct mortality of fish and other aquatic vertebrates. Coordinate project site dewatering with a fisheries biologist qualified to perform fish and amphibian relocation activities. Minimize the length of the dewatered stream channel and duration of dewatering. If the work area requires periodic pumping of seepage, place pumps in flat areas well away from the stream channel. Any turbid water pumped from the work site itself to maintain it in a dewatered state shall be disposed of in an upland location where it will not drain directly into any stream channel. To avoid or minimize potential injury and mortality of fish during excavation and placement of fill materials in the active low-flow channel, equipment will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the work area. Reclamation will ensure that before submerging an excavator bucket or laying gravel below the water surface, the excavator bucket will be operated to "tap" the surface of the water, or a person will wade ahead of fill placement equipment to scare fish away from the work area. To avoid impacts to mobile life stages of salmonids that may be present in the water column, the first layers of clean gravel that are being placed into the wetted channel will be added slowly and deliberately to allow fish to move from the work area. To avoid impacts to juvenile salmonids during high flow gravel injections, gravel will be injected only in select locations where juvenile salmonids would not be expected to be holding due to high water velocities.
EC-FR-3	Monitoring of the constructed inundation surfaces for salmon fry stranding will be performed by a qualified fishery biologist immediately after recession of flood flow events designated as a 1.5-year or less frequent event (i.e., Q >6,000 cfs) for a period of 3 years following construction. These flows, and associated fry stranding surveys, will typically occur between January and May. If substantial stranding is observed, Reclamation will take appropriate measures to return stranded fishes to river habitats and to subsequently modify the constructed surfaces prior to the next managed flow release to reduce the likelihood of future occurrences of fry stranding.
EC-FR-4	Reclamation will continue to implement the Riparian Revegetation and Monitoring Plan during project implementation. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net-loss of riparian habitat and jurisdictional wetlands within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the TRD. Reclamation will initiate a 10-year mitigation monitoring program after the first growing season following project implementation. After a period of 5 years, the need for additional riparian habitat and wetland enhancement will be evaluated in a written report. At that time, Reclamation, in consultation with the USACE, Regional Water Board, and CDFW, will determine whether there is a need to further enhance or create additional areas of riparian habitat or jurisdictional wetlands within the project boundary so that there will be no net loss of riparian habitat after a 10-year monitoring period. If the standard set in the revegetation plan is not met, infill with additional plantings. In addition, wetlands will be re-delineated 5 years post-project implementation to ensure no net loss of wetland habitat. Riparian habitat reporting 5 years after project implementation and wetland delineation 5 years after implementation will provide Reclamation with needed data in a timely fashion to take additional proactive measures towards meeting the goals of no net loss of riparian and jurisdictional wetland habitat within rehabilitation site boundaries after 10 years.
EC-FR-5	Low water crossings will only be constructed and used between July 15 and September 15. The number of vehicle and equipment crossings of the Trinity River will be minimized. Reclamation will construct the low-flow channel crossings to allow adequate depths and velocities for adult and juvenile salmonids to pass safely. Flows associated with storm events are not considered critical because the width and hydrologic conditions associated with low-flow channel crossings in the Trinity River are not considered to limit fish passage at elevated flows and would be comparable to hydrologic conditions in local riffle-and-run features. For Trinity River low-flow channel crossings at base flows, velocities will not exceed 2 feet per second to allow for juvenile fish passage and water

Label	Commitment
	depths will not be less than 12 inches in two-thirds of the river channel to provide adequate depth for adult salmon and steelhead passage. Reclamation will not impede the physical features or hydraulic process of the Trinity River in a fashion that would be inconsistent with the 2000 Biological Opinion (National Marine Fisheries Service 2000) or result in a temporary impairment to fish passage related to a bridge.
Vegetation, Wildlife, and Wetlands	
EC-VW-1	Prior to the start of construction activities, Reclamation will retain a qualified biologist to identify potential construction access routes to ensure that these features avoid and/or minimize to the fullest extent impacts to riparian habitats and jurisdictional waters. In addition, Reclamation will clearly identify, and flag in the field, biologically sensitive areas (e.g., jurisdictional waters and riparian habitat) to be protected, and will provide the contractor with specific instructions to avoid any construction activity within these features. Reclamation will inspect and maintain marked biologically sensitive areas on a regular basis throughout the construction phase.
EC-VW-2	A qualified botanist will conduct a minimum of two pre-construction surveys to determine if special-status plant species occur within the project site. Surveys shall be conducted during the blooming periods of the plants potentially occurring at the site to determine (1) if the species occur and (2) the quality, location, and extent of any populations. If a special-status plants species is found within 250 feet of any proposed disturbance, the following measures will be implemented. Prior to the start of disturbance, exclusionary fencing will be erected around the known occurrences. If necessary, a qualified botanist shall be present to assist with locating these special-status plant populations. The exclusionary fencing will be periodically inspected throughout each period of construction and be repaired as necessary. If a population cannot be fully avoided, Reclamation will retain a qualified botanist to (1) determine appropriate salvage and relocation measures and (2) implement appropriate measures in coordination with CDFW staff.
EC-VW-3	Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable nesting habitat for the little willow flycatcher is present. If suitable habitat is present, the following measures will be implemented. Grading and other construction activities will be scheduled to avoid the nesting season to the extent possible. The nesting season for this species in Trinity County extends from June 1 through July 31. If construction occurs outside of the breeding season, no further mitigation is necessary. If the breeding season cannot be completely avoided, the following measures will be implemented. A qualified biologist will conduct a minimum of one pre-construction survey for the little willow flycatcher within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The pre-construction survey(s) will be used to ensure that no nests of this species within or immediately adjacent to the rehabilitation site will be disturbed during project implementation. To the extent possible given timing for construction and with the contract award, pre-construction surveys will conform to methodologies identified in a Willow Fly Catcher Survey Protocol for California available online at <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=84019&inline> (Bombay et al., 2003). If an active nest is found, CDFW will be contacted prior to the start of construction to determine the appropriate mitigation measures. If vegetation is to be removed by the projects and all necessary approvals have been obtained, potential nesting substrate (e.g., shrubs and trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.
EC-VW-4	If any construction in the Trinity River channel will occur prior to August 1 of any construction season, a pre-construction survey for the foothill yellow-legged frog larvae and/or eggs will be conducted by a qualified biologist. This survey will be conducted within the construction boundary no more than 2

Label	Commitment
	weeks prior to the start of in-stream construction activities. If larvae or eggs are detected, the biologist will relocate them to a suitable location outside of the construction boundary. In the event that a foothill yellow-legged frog is observed within the construction boundary, the contractor will temporarily halt in-stream construction activities until qualified personnel have moved the frog(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFW prior to construction.
EC-VW-5	A minimum of one survey for western pond turtle nests will be conducted during the nesting season (generally late June-July) prior to construction. A qualified biologist will be retained by Reclamation to conduct the survey. If a western pond turtle nest is found, the biologist will flag the site and determine whether construction activities can avoid affecting the nest. If the nest cannot be avoided, a qualified biologist will trap and move western pond turtles out of the construction area to nearby suitable habitats. During construction, in the event that a western pond turtle is observed within the construction limits, the contractor will temporarily halt construction activities until qualified personnel have moved the turtle(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFW prior to construction.
EC-VW-6	Prior to the start of construction, a qualified biologist will conduct surveys of the rehabilitation sites to determine whether suitable nesting habitat for California yellow warblers, yellow-breasted chats, yellow rail and Vaux's swifts is present. If suitable habitat is present, the following measures will be implemented. Grading and other construction activities will be scheduled to avoid the nesting season for these species to the extent possible. The nesting season for these species in Trinity County extends from March 15 through July 31. If construction occurs outside the breeding season, no further mitigation is necessary. If construction during the breeding season cannot be completely avoided, the following measures will be implemented. A qualified biologist will conduct a minimum of one preconstruction survey for these species within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The preconstruction surveys will be used to ensure that no nests of these species within or immediately adjacent to the rehabilitation sites will be disturbed during project implementation. If an active nest is found, a qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest. If vegetation is to be removed by the project and all necessary approvals have been obtained, potential nesting habitat (e.g., shrubs and trees) that will be removed by the projects will be removed before the onset of the nesting season (typically March 1 for migratory song birds). This will help preclude nesting and substantially decrease the likelihood of direct impacts.
EC-VW-7	Due to the removal of the bald eagle from the endangered species list and the availability of the National Bald Eagle Management Guidelines provided by the U.S. Fish and Wildlife Service to protect the bald eagle, modified commitments are outlined below. These measures are now stricter than those outlined in the Master EIR and provide additional protections for the bald eagle to abide by directives of the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d). Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether potential bald eagle or northern goshawk habitat occurs. If potential habitat occurs, Reclamation will implement the following commitment.: Construction will be scheduled to avoid the bald eagle and northern goshawk nesting season to the extent feasible. The nesting season for most raptors in Trinity County extends from January 1 through July 31. Thus, if construction can be scheduled to occur between August 1 and January 1, the nesting season will be avoided and no impacts to nesting bald eagles or northern goshawks would occur. If it is infeasible to schedule construction during this time, Reclamation will implement the provisions outlined in the incidental take permit for bald eagles issued by the USFWS prior to initiation of construction.

Label	Commitment
EC-VW-8	Pre-construction surveys for roosting bats and ring-tailed cats will be conducted prior to the start of construction activities. The surveys will be conducted by a qualified biologist. No activities that will result in disturbance to active roosts of special status bats or dens of ring-tailed cats will proceed prior to completion of the surveys. If no active roosts or dens are found, no further action is needed. Because bats are known to abandon young when disturbed, if a maternity roost is located, a qualified bat biologist will determine the extent of a construction-free zone to be implemented around the roost. If a bat maternity roost or hibernaculum is present, or a ring-tailed cat den is present, the following commitment will be implemented. CDFW will also be notified of any active bat nurseries within the disturbance zones. If an active maternity roost or hibernaculum is found, the projects will be redesigned to avoid the loss of the tree or structure occupied by the roost, if feasible. If the projects cannot be redesigned to avoid removal of the structure, demolition of that structure will commence before bat maternity colonies form (i.e., prior to March 1) or after young are volant (flying) (i.e., after July 31). The disturbance-free buffer zones described above will be observed during the bat maternity roost season (March 1–July 31). If a non-breeding bat hibernaculum is found in a tree or structure to be razed, the individuals will be safely evicted under the direction of a qualified bat biologist, by opening the roosting area to allow air to flow through the cavity. Demolition will then follow no sooner than the following day (i.e., there will be no less than one night between initial disturbance for air flow and the demolition). This action will allow bats to leave during dark hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. Trees with roosts that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during darker hours. Ring-tailed cats are fully protected species under Fish and Game Code Section 4700. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research. If an active ring-tailed cat nest is found, the projects will be redesigned to avoid the loss of the tree occupied by the nest if feasible. If the projects cannot be redesigned to avoid removal of the occupied tree, the CDFW will be contacted for their input. If approved by CDFW, demolition of the tree will commence outside of the breeding season (February 1 to August 30). If a non-breeding den is found in a tree scheduled to be removed, prior to disturbance, the CDFW will be notified to review and approve proposed procedures to ensure that no take occurs as a result of the action. Trees with dens that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow ring-tailed cats to escape during the darker hours.
EC-VW-9	In order to avoid and/or minimize the potential introduction and/or spread of noxious weeds, the following measures will be implemented: When using imported erosion control materials (as opposed to rock and dirt berms), use only certified weed-free materials, mulch, and seed. Preclude the use of rice straw in riparian areas. Limit any import or export of fill to materials that are known to be weed free. Ensure all construction equipment is thoroughly washed prior to entering and leaving the worksite. Equipment will be inspected to ensure that it is free of plant parts as well as soils, mud, or other debris that may carry weed seeds. Use a mix of native grasses, forbs, and on NFS and private lands potentially non-persistent non-native species (i.e., recleaned wheat) for seeding disturbed areas that are subject to infestation by non-native and invasive plant species. [3]Where appropriate, a heavy application of mulch will be used to discourage introduction of these species. Use of planting plugs of native grass species may also be used to accelerate occupation of disturbed sites and increase the likelihood of reestablishing a self-sustaining population of native plant species. Within the first 3 to 5 years post-project, if it is determined that the project has caused non-native invasive vegetation to out-compete desired planted or native colonizing riparian vegetation, opportunities to control these non-native species will be considered. When implementing weed control techniques, the approach will consider using all available control methods known for a weed species if those control methods are in conformance with existing agency and landowner policies and consistent with NEPA/CEQA requirements. Within the first 3 to 5 years post-project, if it is determined that onsite

[3] Per BLM policy, non-persistent non-native species would not be used on lands managed by BLM.

Label	Commitment
	revegetation/post-project conditions do not meet landowner requirements, opportunities to revisit the site and remedy the concern will be considered. Avoid areas contaminated with known occurrences of *Didymosphenia geminata* (didymo). If no uncontaminated areas are available for water drafting, water drafting equipment will be cleaned by approved methods prior to drafting water from an uncontaminated location. Didymo-infested water shall be discharged away from a water source or from the same source where it was taken.
EC-VW-10	Reclamation will develop and implement a plan to minimize impacts to freshwater mussels {e.g., western pearlshell mussel) and lamprey ammocetes that occupy habitat within the project area. This plan will include measures to collect, transport and relocate mussel populations to appropriate alluvial habitat within the project area. Relocation of ammocetes would occur using techniques to extract them from substrate habitat and move into the water column; thereby being transported to alluvial habitat downstream.
Recreation	
EC-RE-1	Reclamation will provide precautionary signage to warn recreational users of the potential safety hazards associated with project construction activities. Notification signs shall be posted at public river access areas located within the project area and managed by BLM and USFS. Signs and/or buoys shall also be placed within and directly adjacent to the project boundaries along the Trinity River in accordance with the requirements specified in Title 14, Article 6 of the California Code of Regulations. Additionally, public notification of proposed project construction activities and associated safety hazards shall be circulated in the local Trinity Journal newspaper prior to the onset of project construction.
EC-RE-2	Reclamation will repair and/or replace any facilities associated with the project that are impacted by project activities. This feature includes installation of interpretive signage consistent with the requirements of the BLM. Preconstruction meetings between Reclamation and landowners/land managers will identify the amount of vegetative screening to be retained at each recreation site within the project area.
Cultural Resources	
EC-CU-1	Prior to initiation of construction or ground-disturbing activities, all construction workers will be alerted to the possibility of discovering cultural resources. This includes prehistoric and/or historic resources. Personnel will be instructed that upon discovery of buried cultural resources, work within 50 feet of the find will be halted and the designated archaeologists for Reclamation and the respective land management agency will be consulted. Once the find has been identified, Reclamation, in coordination with the respective land management agency, will be responsible for developing and authorizing a treatment plan for the cultural resource including an assessment of its historic properties and methods for avoiding any adverse effects, pursuant to the PA and in compliance with the NHPA.
EC-CU-2	If human remains are encountered during construction on non-federal lands, work in that area will be halted and the Trinity County Coroner's Office will be immediately contacted. If the remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) will be notified within 24 hours of determination, as required by PRC, Section 5097. The NAHC will notify designated Most Likely Descendants, who will provide recommendations for the treatment of the remains within 48 hours from the time that they gain access to the site. The NAHC will mediate any disputes regarding treatment of remains. If Native American human remains and associated items are discovered on federal lands, they will be treated according to provisions set forth in the Native American Graves Protection and Repatriation Act (25 USC 3001) as well as Reclamation's Directives and Standards LND 02-01. If the find is determined to be a historical resource or a unique archaeological resource, as defined by CEQA, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or other appropriate mitigation will be made available. Work may continue on other parts of the project while mitigation for historical or unique archaeological resources takes place.

Label	Commitment
Air Quality	
EC-AQ-1	Reclamation will implement a dust control program to limit fugitive dust and particulate matter emissions. The dust control program will include the following elements as appropriate: Inactive construction areas will be watered as needed to ensure dust control. Pursuant to the California Vehicle Code (Section 23114), all trucks hauling soil or other loose material to and from the construction site will be covered or will maintain adequate freeboard to ensure retention of materials within the truck's bed (e.g., ensure 1-2 feet vertical distance between top of load and the trailer). Excavation activities and other soil-disturbing activities will be conducted in phases to reduce the amount of bare soil exposed at any one time. Mulching with weed-free materials will be used to minimize soil erosion. Watering (using equipment and/or manually) will be conducted on all stockpiles, dirt/gravel roads, and exposed or disturbed soil surfaces, as necessary, to reduce airborne dust. All paved access roads, parking areas, and staging areas will be swept (with water sweepers), as required by Reclamation. Paved roads will be swept (with water sweepers) if visible soil material is carried onto adjacent private and public roads, as required by Reclamation. All ground-disturbing activities with the potential to generate dust will be suspended when winds exceed 20 mph, as directed by the NCUAQMD. Reclamation or its contractor will designate a person to monitor dust control and to order increased watering as necessary to prevent transport of dust offsite. This person will also respond to citizen complaints. Reclamation will comply with NCUAQMD Rule 104 (4.0) Particulate Matter. This compliance could occur by using portable internal combustion engines registered and certified under the state portable equipment regulation (Health & Safety Code 41750 through 41755).
EC-AQ-2	Reclamation has not burned piles on a TRRP channel rehabilitation project since the Canyon Creek Suite of sites were constructed in 2006. In the event burning of material is required, these practices would apply. Vegetative piles to be burned will consist only of dried vegetative materials. Burn piles will be no larger than 10 feet in diameter. Reclamation would ensure that field personnel will be onsite during all hours of burning, and materials necessary to extinguish fires will be available at all times. In general, all requirements of a NCUAQMD "Non-Standard" burn permit will be met for burning. Burn management planning will include but not be limited to the following: Ensure that burning occurs only on approved burn days as defined by the NCUAQMD (determined by calling 1-866-BURN-DAY). Burning will only occur during suitable conditions to ensure control of ignited fires. For instance, water to wet the litter and duff layer and penetrate the mineral soil layer to 1/4 inch or more will be present, wind speeds will be low (<10 mph), and temperature will be low (<80 ºF). Piles will be covered with a 5-foot x 5-foot sheet of 4-mil polyethylene plastic to promote drying of the slash. At least 3/4 of each pile surface will be covered and the plastic anchored to preserve a dry ignition point. Dry fuel conditions will minimize smoke emissions. Slash piles will not be constructed on logs, stumps, or talus slopes within 25 feet of wildlife trees with nest structures, in roadways, or in drainage ditches. Piles will not be placed within 10 feet of trees intended to be saved (reserved trees) or within 25 feet of a unit boundary. Reclamation will notify the public each day that burning is to occur. Signs or personnel will notify residents and traffic on nearby access routes.

Label	Commitment
EC-AQ-3	Construction activity occurring within 300 feet of elementary schools will be limited to the period when school is not in session. Construction activity occurring within 300 feet of residences will be limited to Monday through Saturday, from the hours of 9 a.m. to 5 p.m. Reclamation will notify residences within 300 feet of the site and project activity and elementary schools will be notified of construction activity located near the school prior to site construction activities.
EC-AQ-4	Reclamation will ensure that a notice is posted at/adjacent to the rehabilitation site, which contains a phone number for the public to contact for concerns related to air quality.
Noise	
EC-NO-1	Construction activities near residential areas will be scheduled between 7:00 a.m. and 7:00 p.m., Monday through Saturday. No construction activities will be scheduled for Sundays or other hours and days established by the local jurisdiction (i.e., Trinity County). The contractor may submit a request for variances in construction activity hours from Reclamation, as needed.
EC-NO-2	Reclamation will require that all construction equipment be equipped with manufacturer's specified noise muffling devices. Reclamation will require placement of all stationary noise-generating equipment as far away as feasibly possible from sensitive noise receptors or in an orientation minimizing noise impacts (e.g., behind existing barriers, storage piles, unused equipment).
Public Services	
EC-PS-1	Reclamation will require that staging and construction work, including temporary road or bridge closures occurs in a manner that allows for access by emergency service providers. Reclamation will provide 72-hour notice to the local emergency providers and affected users prior to the start of temporary closures.
EC-PS-2	Reclamation will coordinate road closures occurring during the school year (mid-August through mid-June) with the appropriate school districts to avoid disruption of school attendance and student access to bus service.
Transportation/Traffic Circulation	
EC-TC-1	Reclamation will post signs during gravel haul activities notifying travelers of trucks entering the roadway. Reclamation will ensure that gravel trucks maintain a speed limit of 15 mph on residential and private roads and operate only between the hours of 7 a.m. and 7 p.m., Monday through Saturday.
EC-TC-2	Reclamation will maintain access throughout the construction period for all private residences adjacent to the project boundary and access roads adjacent to the Trinity River. During the construction phase of the project, Reclamation will limit the amount of daily construction equipment traffic by staging construction equipment and vehicles within the project boundary throughout the work period. All large equipment "lowbed" movements will be performed as required by CHP/Caltrans, etc., using pilot vehicles in the front and rear. A "scout vehicle" can be sent forward in the narrow areas to avoid/advise oncoming public traffic.
EC-TC-3	Reclamation will perform a pre-construction survey of local federal and state roads to determine the existing roadway conditions of the construction access routes and will consult with the relevant agencies/private parties about road conditions prior to construction activity and post construction activity. An agreement will be entered into prior to construction that will detail the pre-construction conditions and post-construction requirements for potential roadway rehabilitation.
EC-TC-4	Reclamation will prepare and implement a traffic control plan that will include provision and maintenance of temporary access through the construction zone, reduction in speed limits though the

Label	Commitment
	construction zone, signage and appropriate traffic control devices, illumination during hours of darkness or limited visibility, use of safety clothing/vests to ensure visibility of construction workers by motorists, and fencing as appropriate to separate bicyclists, pedestrians, and equestrians from construction activities. During the times that truck traffic and movement of equipment may result in a traffic obstacle or safety hazard (as defined in the traffic control plan), construction flagging and/or pilot cars will be used to ensure safe traffic conditions on Sky Ranch Road and other public access routes. Reclamation will obtain encroachment permits from the appropriate entities to work within road easements. These permits will require traffic control and signage to meet California standards.

APPENDIX F

Mitigation Monitoring and Reporting Program and Project Design Elements

APPENDIX F

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) Mitigation Monitoring and Reporting Program and Project Design Elements

Project Proponent and Federal Lead Agency for NEPA
U.S. Department of the Interior
Bureau of Reclamation– Trinity River Restoration Program
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1313 Main Street
Weaverville, California 96093

California Lead Agency for CEQA
North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

Federal Co-Lead Agency for NEPA
U.S. Department of Interior – Bureau of Land Management
Redding Field Office
6640 Lockheed Drive
Redding, California 96002

Applicant's Consultant
Stantec Consulting Services Inc.
5000 Bechelli Lane, Suite 203
Redding, California 96002

APPENDIX F

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) Mitigation Monitoring and Reporting Program and Project Design Elements

INTRODUCTION

The first part of this document comprises the Mitigation Monitoring and Reporting Program (MMRP) for the Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) (the proposed project). The purpose of providing the MMRP as an appendix is to facilitate its use as a stand-alone CEQA compliant document, which clearly expresses to the reader the mitigation responsibilities of the Bureau of Reclamation (Reclamation), and Regional Water Quality Control Board – North Coast Region (Regional Water Board) in implementing the project. The mitigation measures listed herein, which are an updated version of those included in the Master Environmental Impact Report (EIR) (North Coast Regional Water Board and Reclamation 2009), are required by law or regulation and will be adopted by the Regional Water Board when it issues a Notice of Applicability for the project. The second part of this document consists of project design elements that shall be implemented as part of the proposed project. In general, mitigation measures identified in Chapter 3 of this Environmental Assessment/Initial Study (EA/IS) correspond to Chapter 4 mitigation measures in the 2009 Master EIR. The mitigation measures in this appendix are meant to mitigate for the same impacts as those identified in the Master EIR. Consequently, these mitigation measures are different only to the extent necessary to tailor the mitigation measures to the site-specific conditions.

Mitigation is defined by the California Environmental Quality Act (CEQA) – Section 15370 as a measure that:

- avoids the impact altogether by not taking a certain action or parts of an action;
- minimizes impacts by limiting the degree or magnitude of the action and its implementation;
- rectifies the impact by repairing, rehabilitating, or restoring the impacted environment;
- reduces or eliminates the impact over time by preservation and maintenance operations during the life of the project; and
- compensates for the impacts by replacing or providing substitute resources or environments.

The mitigation program identified in the MMRP to reduce potential project impacts consists of mitigation measures, project design elements, and construction criteria and methods. Mitigation measures provided in this MMRP have been identified in Chapter 3, Affected Environment and Environmental Consequences, of the EA/IS as feasible and effective in mitigating project-related environmental impacts. This MMRP includes discussion of the following: legal requirements, intent of the MMRP, development and approval process for the MMRP, the authorities and responsibilities associated with the

implementation of the MMRP, a description of the mitigation summary table, project design elements, construction criteria and methods, and resolution of noncompliance complaints.

LEGAL REQUIREMENTS

The legal basis for the development and implementation of the MMRP lies within CEQA (including the California Public Resources Code [PRC]). Sections 21002 and 21002.1 of the California PRC state:

- Public agencies are not to approve projects as proposed if there are feasible alternatives or feasible mitigation measures available that would substantially lessen the significant environmental effects of such projects.

- Each public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.

- Section 21081.6 of the California PRC further requires: The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation.

- The monitoring program must be adopted when a public agency makes its findings under CEQA so that the program can be made a condition of project approval in order to mitigate significant effects on the environment. The program must be designed to ensure compliance with mitigation measures during project implementation to mitigate or avoid significant environmental effects.

INTENT OF THE MITIGATION MONITORING AND REPORTING PROGRAM

The MMRP is intended to satisfy the requirements of CEQA as they relate to the project. It is anticipated to be used by Reclamation and Regional Water Board staff, participating agencies, project contractors, and mitigation monitoring personnel during implementation of the project.

The primary objective of the MMRP is to ensure the effective implementation and enforcement of adopted mitigation measures and permit conditions. The MMRP will provide for monitoring of construction activities as needed, onsite identification and resolution of environmental problems, and proper reporting to lead agency staff.

DEVELOPMENT AND APPROVAL PROCESS

The timing elements for implementing mitigation measures and the definition of the approval process have been provided in detail through this MMRP to assist staff from Reclamation and the Regional Water Board by providing the most usable monitoring document possible.

AUTHORITIES AND RESPONSIBILITIES

As the project proponent, Reclamation, functioning as the Trinity River Restoration Program (TRRP), will have the primary responsibility for the execution and proper implementation of the MRRP. The Regional Water Board may provide Reclamation with guidance, as warranted. Reclamation will be responsible for the following activities:

- Coordination of monitoring activities,

- Management of the preparation and filing of monitoring compliance reports, and
- Maintenance of records concerning the status of all approved mitigation measures.

SUMMARY OF MONITORING REQUIREMENTS

Table F-1, which follows, summarizes the mitigation measures and associated monitoring requirements for the proposed project. The mitigation measures are organized by environmental issue area (i.e., Soils, Water Quality, etc.). Table F-1 is composed of the following four columns:

- **Mitigation Measure:** Lists the mitigation measures identified for each significant impact discussed in the Draft EA/IS for the project. The mitigation numbering system used in the Draft Master EIR/Draft EIR is carried forward in this MMRP.

- **Timing/Implementation:** Indicates at what point in time or project phase the mitigation measure is implemented.

- **Responsible Parties (tasks):** Documents which agency or entity is responsible for implementing a mitigation measures and what, if any, coordination is required (e.g., approval from Caltrans). If more than one party has responsibility under a given mitigation measure, the tasks of each individual party is identified parenthetically (e.g., "implementation" or "monitoring").

- **Verification:** Provides spaces to be initialed and dated by the individual responsible for verifying compliance with each specific mitigation measure.

RESOLUTION OF NONCOMPLIANCE COMPLAINTS

Any person or agency may file a complaint that states noncompliance with the mitigation measures that were adopted as part of the approval process for the project. The complaint shall be directed to Reclamation at the TRRP office (P.O. Box 1300, 1313 South Main Street, Weaverville, California 96093) and to the Regional Water Board at 5550 Skylane Boulevard, Suite A, Santa Rosa, California, 95403, in written form, providing detailed information on the purported violation. Reclamation and the Regional Water Board shall investigate and determine the validity of the complaint. If noncompliance with a mitigation measure is verified, Reclamation shall take the necessary action(s) to remedy the violation. The complainant shall receive written confirmation indicating the results of the investigation or the final corrective action that was implemented in response to the specific noncompliance issue.

Table F-1. Summary of Mitigation Monitoring Requirements

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
3.3 GEOLOGY, FLUVIAL GEOMORPHOLOGY, AND SOILS			
Impact 3.3-2: Construction activities associated with the Proposed Project could result in increased erosion and short-term sedimentation of the Trinity River.			
4.3-2a Reclamation will implement the following measures during construction activities: • Areas where ground disturbance will occur will be identified in advance of construction and limited to only those areas that have been approved by Reclamation. • All vehicular construction traffic will be confined to the designated access routes and staging areas. • Disturbance will be limited to the minimum necessary to complete all rehabilitation activities. • All supervisory construction personnel will be informed of environmental concerns, permit conditions, and final project specifications.		Reclamation (implementation) Regional Water Board (Storm Water Pollution Prevention Plan [SWPPP] review and approval) Bureau of Land Management (BLM) (SWPPP review)	
4.3-2b Reclamation will prepare a SWPPP. Measures for erosion control will be prioritized based on proximity to the river. Reclamation will provide the SWPPP for review by associated agencies (e.g., BLM, the Regional Water Board, National Marine Fisheries Service [NMFS], and California Department of Fish and Wildlife [CDFW]) upon request. Reclamation's project manager will ensure the preparation and implementation of an erosion and sediment control plan prior to the start of construction. The following measures will be used as a guide to develop this plan: • Restore disturbed areas to pre-construction contours to the fullest extent feasible. • Salvage, store, and use the highest quality soil for revegetation. • Discourage noxious weed competition and control noxious weeds. • Clear or remove roots from steep slopes immediately prior to scheduled construction. • Leave drainage gaps in topsoil and spoil piles to accommodate surface water runoff. • To the fullest extent possible, cease excavation activities during significantly wet or windy weather. • Use bales, wattles, and/or silt fencing as appropriate. • Before seeding disturbed soils, work the topsoil to reduce compaction caused by construction vehicle traffic. • Rip feathered edges (and floodplain surfaces where appropriate) to approximately 18 inches deep. The furrowing of the river's edge will remove plant roots to allow mobilization of the bed, but will also intercept sediment before it reaches the waterway. • Spoil sites will be located such that they do not drain directly into a surface water feature, if possible. If a spoil site will drain into a surface water feature, catch basins will be constructed to intercept sediment before it reaches the feature. Spoil sites will be graded and vegetated to reduce the potential		Reclamation (implementation) Regional Water Board (SWPPP review and approval) BLM (SWPPP review)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
for erosion. • Sediment control measures will be in place prior to the onset of the rainy season to ensure that surface water runoff does not occur. Project areas will be monitored and maintained in good working condition until disturbed areas have been seeded and mulched or revegetated in another fashion. If work activities take place during the rainy season, erosion control structures will be in place and operational at the end of each construction day.			
4.5 WATER QUALITY			
Impact 3.5-1: Construction of the proposed project could result in short-term, temporary increases in turbidity and total suspended solids levels during construction.			
4.5-1a The water quality objective for turbidity levels in the Trinity River, as listed in the Basin Plan for the North Coast Region (North Coast Regional Water Quality Control Board 2011), is summarized below. • Turbidity levels will not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof. • Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity. • Project activities that occur in areas outside of the active river channel will not increase turbidity levels by more than 20 percent above naturally occurring background levels. During in-river construction activities and until the first extended period of post-construction high flow (i.e., flows of at least 6,000 cfs inundate the project areas and floodplain for a minimum of 7 days) a zone of turbidity dilution within which higher percentages will be tolerated will be defined in discharge permits as the full width of the river channel within 500 linear feet downstream of any project activity that increases naturally occurring background levels, provided that all other required controls and appropriate BMPs for sediment and turbidity control are in place and downstream beneficial uses are also fully protected. When naturally occurring background levels are less than or equal to 20 nephelometric turbidity units (NTUs), turbidity levels immediately downstream of the zone of turbidity dilution shall not exceed 20 NTUs. If naturally occurring background levels are greater than 20 NTUs, turbidity levels immediately downstream of the 500 linear foot zone of dilution shall not be increased by more than 20 percent above the naturally occurring background level.		Reclamation (implementation) Regional Water Board (review of monitoring data)	
4.5-1b To ensure that turbidity levels do not exceed the thresholds described above (4.4-1a) during in-river project construction activities, Reclamation shall monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities that could increase turbidity. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours		Reclamation (implementation) Regional Water Board (review of monitoring data)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels. • If grab sample results indicate that turbidity levels exceed 20 NTU at 500 feet downstream from construction activities, remedial actions will be implemented to reduce and maintain turbidity at or below 20 NTU immediately downstream of the 500 linear foot zone of dilution. Potential remedial actions include halting or slowing construction activities and implementation of additional BMPs until turbidity levels are at or below 20 NTU.			
4.5-1c Fill gravels used on the streambeds, stream banks, and river crossings will be composed of washed, spawning-sized gravels from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater.		Reclamation (implementation)	
4.5-1d Reclamation will prepare and implement a SWPPP that describes BMPs for the project, including silt fences, sediment filters, and routine monitoring to verify effectiveness. Proper implementation of erosion and sediment controls will be adequate to minimize sediment inputs into the Trinity River until vegetation regrowth occurs. All required controls and BMPs, including sediment and erosion control devices, will be inspected daily during the construction period to ensure that the devices are properly functioning. Excavated and stored materials will be kept in upland activity areas with erosion control properly installed and maintained. Excavated and stored materials will be staged in s upland activity areas. All applicable erosion control standards will be required during stockpiling of materials.		Reclamation (implementation) Regional Water Board (SWPPP review and approval) BLM (SWPPP review)	
4.5-1e To minimize the potential for increases in turbidity and suspended sediments entering the Trinity River as a result of access routes (e.g., roads), Reclamation will implement the following protocols: • Keep bare soil to the minimum required by designs. Erosion control devices/measures will be applied to areas where vegetation has been removed as needed to reduce short-term erosion prior to the start of the rainy season. • Keep runoff from bare soil areas well dispersed. Dispersing runoff keeps sediment onsite and prevents sediment delivery to streams. Direct any concentrated runoff from bare soil areas into natural buffers of vegetation or areas with more gentle slopes where sediment can settle out. • Disconnect and disperse flow paths, including roadside ditches, that might otherwise deliver fine sediment to stream channels or other water bodies. • Decompact or rip floodplain areas so that surfaces are permeable and no surface water runoff occurs.		Reclamation (implementation)	
Impact 3.5-2: Construction of the proposed project could result in short-term, temporary increases in turbidity and total suspended solids levels following construction.			
4.5-2a Turbidity increases associated with project activities will not exceed the water quality objectives for turbidity in the Trinity River Basin (North Coast Regional Water Quality Control Board 2011).		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.5-2b To ensure that turbidity levels do not exceed the threshold following construction, Reclamation will monitor turbidity and total suspended solids during and after representative rainfall events to determine the effect of the project on Trinity River water quality. At a minimum, field turbidity measurements will be collected whenever a visible increase in turbidity is observed. • If increases in turbidity and total suspended solids are observed as a result of erosion from constructed features, field turbidity measurements will be collected 50 feet upstream of a point adjacent to the end of the feature and 500 feet downstream of the feature. • If the grab sample indicates that turbidity levels exceed the established thresholds identified in the Basin Plan, the Regional Water Board will be notified. The need to implement erosion control measures for turbidity that is expected to result from overland river flows (versus surface run-off) will be evaluated with Regional Water Board staff to determine if remediation measures are needed.		Reclamation (implementation)	
4.5-2c To reduce the potential for the access routes to continually contribute soil materials to the Trinity River following project construction, thereby increasing turbidity and total suspended solids in the river, these routes will be stabilized or decommissioned upon completion of work in those areas consistent with the requirements outlined in at the end of this appendix (Design Elements and Construction Criteria). Decommissioning is defined as removing those elements of a road that reroute hillslope drainage and present slope stability hazards.		Reclamation (implementation)	
Impact 3.5-3: Construction of the proposed project could cause contamination of the Trinity River from hazardous materials spills.			
4.5-3a Reclamation will prepare and implement a spill prevention and containment plan in accordance with applicable federal and state requirements.		Reclamation (implementation)	
4.5-3b Reclamation will ensure that any construction equipment that will come in contact with the Trinity River be inspected daily for leaks prior to entering the flowing channel. External oil, grease, and mud will be removed from equipment using steam cleaning. Untreated wash and rinse water will be adequately treated prior to discharge if that is the desired disposal option.			
4.5-3c Reclamation will ensure that hazardous materials, including fuels, oils, and solvents, not be stored or transferred within 150 feet of the active Trinity River channel. Areas for fuel storage, refueling, and servicing will be located at least 150 feet from the active river channel or within an adequate secondary fueling containment area. Gas pumps and engines will be stored and maintained on impermeable barriers so that any leaking petroleum products are isolated from the ground. In addition, the construction contractor will be responsible for maintaining spill containment booms onsite at all times during construction operations and/or staging of equipment or fueling supplies. Fueling trucks will maintain a spill containment boom at all times.			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
Impact 3.5-5: Construction and maintenance of the proposed project could result in the degradation of Trinity River beneficial uses identified in the Basin Plan.			
Water Quality Mitigation Measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, 4.5-1e, 4.5-2a, 4.5-2b, 4.5-2c, 4.5-3a, 4.5-3b, and 4.5-3c described above shall be implemented to protect the beneficial uses of the Trinity River.		Reclamation (implementation) Regional Water Board (SWPPP review and approval) BLM (SWPPP review)	
3.6 FISHERY RESOURCES			
Impact 3.6-1: Implementation of the proposed project could result in effects on potential spawning and rearing habitat for anadromous fishes, including the federally and state-listed coho salmon.			
4.6-1a The proposed construction schedule avoids in-channel work during the period in which it could affect spawning spring- and fall-run Chinook salmon, coho salmon, and steelhead or their embryos once in the gravel. As directed by the 2000 Biological Opinion (National Marine Fisheries Service 2000), Reclamation will ensure that all in-channel construction activities are conducted during late-summer, low-flow conditions (e.g., July 15-September 15).		Reclamation (implementation)	
4.6-1b Alluvial material used for coarse sediment additions will be composed of washed, spawning-sized gravels (3/8- to 5-inches diameter) from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter; will be free of contaminants, such as petroleum products; and will pass Caltrans cleanliness test #227 with a value of 85 or greater.		Reclamation (implementation)	
Impact 3.6-2: Implementation of the proposed project could result in increased erosion and sedimentation levels that could adversely affect fishes, including the federally and state-listed coho salmon.			
4.6-2a The water quality objective for turbidity levels in the Trinity River, as listed in the Basin Plan for the North Coast Region (North Coast Regional Water Quality Control Board 2011), is summarized below. • Turbidity levels shall not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof. • Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity. • Project activities that occur in areas outside of the active river channel will not increase turbidity levels		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
by more than 20 percent above naturally occurring background levels. During in-river construction activities and until the first extended period of post-construction high flow (i.e., flows of at least 6,000 cfs inundate the project areas and floodplain for a minimum of 7 days) a zone of turbidity dilution within which higher percentages will be tolerated will be defined in discharge permits as the full width of the river channel within 500 linear feet downstream of any project activity that increases naturally occurring background levels, provided that all other required controls and appropriate BMPs for sediment and turbidity control are in place and downstream beneficial uses are also fully protected. When naturally occurring background levels are less than or equal to 20 NTUs, turbidity levels immediately downstream of the zone of turbidity dilution shall not exceed 20 NTUs. If naturally occurring background levels are greater than 20 NTUs, turbidity levels immediately downstream of the 500 linear foot zone of dilution shall not be increased by more than 20 percent above the naturally occurring background level.			
4.6-2b To ensure that turbidity levels do not exceed the thresholds described above (4.6-2a) during in-river project construction activities, Reclamation shall monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities that could increase turbidity. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels. If grab sample results indicate that turbidity levels exceed 20 NTU at 500 feet downstream from construction activities, remedial actions will be implemented to reduce and maintain turbidity at or below 20 NTU immediately downstream of the 500 linear foot zone of dilution. Potential remedial actions include halting or slowing construction activities and implementation of additional BMPs until turbidity levels are at or below 20 NTU.		Reclamation (implementation)	
4.6-2c Fill gravels used on the streambeds, stream banks, and river crossings will be composed of washed, spawning-sized gravels from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater.		Reclamation (implementation)	
4.6-2d Reclamation will prepare and implement a SWPPP that describes BMPs for the project, including silt fences, sediment filters, and routine monitoring to verify effectiveness. Proper implementation of erosion and sediment controls will be adequate to minimize sediment inputs into the Trinity River until vegetation regrowth occurs. All required controls and BMPs, including sediment and erosion control devices, will be inspected daily during the construction period to ensure that the devices are properly functioning. Excavated and stored materials will be kept in upland activity areas with erosion control properly installed and maintained. Excavated and stored materials will be staged in stable upland activity areas. All applicable erosion control standards will be required during stockpiling of materials.		Reclamation (implementation) Regional Water Board (SWPPP review and approval) BLM (SWPPP review)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.6-2e To minimize the potential for increases in turbidity and suspended sediments entering the Trinity River as a result of access routes (e.g., roads), Reclamation will implement the following protocols: • Keep bare soil to the minimum required by designs. Erosion control devices/measures will be applied to areas where vegetation has been removed to reduce short-term erosion prior to the start of the rainy season. • Keep runoff from bare soil areas well dispersed. Dispersing runoff keeps sediment onsite and prevents sediment delivery to streams. Direct any concentrated runoff from bare soil areas into natural buffers of vegetation or areas with more gentle slopes where sediment can settle out. • Disconnect and disperse flow paths, including roadside ditches, that might otherwise deliver fine sediment to stream channels. • Decompact or rip floodplain areas so that surfaces are permeable and no surface water runoff occurs.		Reclamation (implementation)	
Impact 3.6-3: Construction activities associated with the Proposed Project could result in the accidental spill of hazardous materials that could adversely affect fishes, including the federally and state-listed coho salmon.			
4.6-3a Construction specifications will include the following measures to reduce potential impacts associated with accidental spills of pollutants (fuel, oil, grease, etc.) on vegetation and aquatic habitat resources within the project boundary: • Equipment and materials will be stored away from wetland and surface water features. • Vehicles and equipment used during construction will receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling will be conducted in an area at least 150 feet away from waters of the Trinity River or within an appropriate secondary fueling containment area. Gasoline engines and pumps operated on the floodplain will be isolated from the ground by an impermeable barrier. • The contractor will develop and implement site-specific BMPs, a water pollution control plan, and emergency spill control plan. The contractor will be responsible for immediate containment and removal of any toxins released.		Reclamation (implementation)	
Impact 3.6-4: Construction activities associated with the Proposed Project could result in the mortality of rearing fishes, including the federally and state-listed coho salmon.			
4.6-4a To avoid impacts to spawning and incubating salmonids, instream work will only occur between July 15 and September 15.		Reclamation (implementation)	
4.6-4b To avoid or minimize potential injury and mortality of fish during riverine activities (e.g., addition and grading of coarse sediment), equipment will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the work area.		Reclamation (implementation)	
4.6-4c Reclamation will minimize potential injury and mortality of fish during the use of low-flow channel crossings. This will be accomplished by minimizing vehicle traffic and by operating equipment and		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
vehicles slowly and deliberately to alert and scare adult and juvenile salmonids away from the crossing area, or by having a person wade ahead of equipment to scare fish away from the crossing area.			
4.6-4d To avoid or minimize potential injury and mortality of fish during excavation and placement of fill materials in the active low-flow channel, equipment will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the work area. Reclamation will ensure that before submerging an excavator bucket or laying gravel below the water surface, the excavator bucket will be operated to "tap" the surface of the water, or a person will wade ahead of fill placement equipment to scare fish away from the work area. To avoid impacts to mobile life stages of salmonids that may be present in the water column, the first layers of clean gravel that are being placed into the wetted channel will be added slowly and deliberately to allow fish to move from the work area.		Reclamation (implementation)	
4.6-4f Monitoring of the constructed inundation surfaces for salmon fry stranding will be performed by a qualified fishery biologist immediately after recession of flood flow events designated as a 1.5- year or less frequent event (i.e., $Q \geq$6,000 cfs) for a period of 3 years following construction. These flows, and associated fry stranding surveys, will typically occur between January and May. If substantial stranding is observed, Reclamation will take appropriate measures to return stranded fishes to river habitats and to subsequently modify the constructed surfaces prior to the next managed flow release to reduce the likelihood of future occurrences of fry stranding.		Reclamation (implementation)	
Impact 3.6-5: Implementation of the Proposed Project would result in the permanent and temporary loss of shaded riverine aquatic habitat for anadromous salmonids.			
4.6-5a Prior to the start of construction activities, Reclamation will retain a qualified biologist to identify potential construction access routes necessary for the projects to ensure that these features avoid and/or minimize to the fullest extent impacts to riparian habitats and wetland waters. In addition, Reclamation will clearly identify, and flag in the field, biologically sensitive areas (e.g., jurisdictional waters and riparian habitat) to be protected, and will provide the contractor with specific instructions to avoid any construction activity within these features. Reclamation will inspect and maintain flagged areas on a regular basis throughout the construction phase.		Reclamation (implementation)	
4.6-5b Reclamation will continue to implement the Riparian Revegetation and Monitoring Plan during Proposed Project implementation. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net-loss of riparian habitat and jurisdictional wetlands within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the Trinity River Division (TRD).		Reclamation (implementation)	
4.6-5c Reclamation will initiate a 10-year mitigation monitoring program after the first growing season following project implementation. After a period of 5 years, the need for additional riparian habitat and wetland enhancement will be evaluated in a written report. At that time, Reclamation, in consultation with the U. S. Army Corps of Engineers (USACE), Regional Water Board, and CDFW, will determine whether there is a need to further enhance or create additional areas of riparian habitat or jurisdictional wetlands		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
within the project boundary so that there will be no net loss of riparian habitat after a 10-year monitoring period. In addition, wetlands will be redelineated 5 years post-project implementation to ensure no net loss of wetland habitat. Riparian habitat reporting 5 years after project implementation and wetland delineation 5 years after implementation will provide Reclamation with needed data in a timely fashion to take additional pro-active measures towards meeting the goals of no net loss of riparian and jurisdictional wetland habitat within rehabilitation site boundaries after 10 years.			
Impact 3.6-6: Implementation of the Proposed Project would result in fish passage being temporarily impaired during the in-stream construction phase.			
4.6-6a Low water crossings will only be constructed and used between July 15 and September 15. Fill gravels used on the low-water crossings, streambeds, and stream banks will be composed of washed, spawning-sized gravels from a local Trinity Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater. Abutment and embankment materials used for bridges will be native alluvium obtained from within the boundaries of the Remaining Phase 1 or Phase 2 sites.		Reclamation (implementation)	
4.6-6b Reclamation will construct the low-flow channel crossings to allow adequate depths and velocities for adult and juvenile salmonids to pass safely. Flows associated with storm events are not considered critical because the width and hydrologic conditions associated with low-flow channel crossings in the Trinity River are not considered to limit fish passage at elevated flows and would be comparable to hydrologic conditions in local riffle-and-run features. For Trinity River low-flow channel crossings at base flows, velocities will not exceed 2 feet per second to allow for juvenile fish passage and water depths will not be less than 12 inches in two-thirds of the river channel to provide adequate depth for adult salmon and steelhead passage.		Reclamation (implementation)	
4.6-6c The number of vehicle and equipment crossings of the Trinity River will be minimized.		Reclamation (implementation)	
4.6-6d Reclamation will not impede the physical features or hydraulic process of the Trinity River in a fashion that would be inconsistent with the 2000 Biological Opinion (National Marine Fisheries Service 2000), or result in a temporary impairment to fish passage related to a bridge.		Reclamation (implementation)	
3.7 VEGETATION, WILDLIFE, AND WETLANDS			
Impact 3.7-1: Construction activities associated with the Proposed Project could result in the loss of jurisdictional waters including wetlands.			
4.7-1a Prior to the start of construction activities, Reclamation will retain a qualified biologist to identify potential construction access routes to ensure that these features avoid and/or minimize to the fullest extent impacts to jurisdictional waters. In addition, Reclamation will clearly identify, and flag in the field, biologically sensitive areas (e.g., jurisdictional waters and riparian habitat) to be protected, and will provide the contractor with specific instructions to avoid any construction activity within these features.		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
Reclamation will inspect and maintain marked areas on a regular basis throughout the construction phase.			
4.7-1b Reclamation will continue to implement the Riparian Revegetation and Monitoring Plan during Proposed Project implementation. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net loss of riparian habitat and jurisdictional wetlands both within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the TRD.		Reclamation (implementation)	
4.7-1c Reclamation will initiate a 10-year mitigation monitoring program after the first growing season following project implementation. Monitoring and maintenance of planted vegetation will take place in the first several years after planting. After a period of 5 years, the need for additional riparian habitat and wetland enhancement will be evaluated in a written report. At that time, Reclamation, in consultation with the USACE, Regional Water Board, and CDFW, will determine whether there is a need to further enhance or create additional areas of riparian habitat or jurisdictional wetlands within the project boundary so that there will be no net loss of wetlands at the end of a 5 year period and no net loss of riparian habitat after a 10-year monitoring period. In addition, wetlands will be re-delineated 5 years after project implementation to ensure no net loss of wetland habitat. Riparian habitat reporting 5 years after planting and wetland delineation 5 years after project implementation will provide Reclamation with needed data in a timely fashion to take additional pro-active measures towards meeting the goals of no net loss of riparian habitat and jurisdictional wetlands within boundaries established for TRRP rehabilitation sites after 10 years.		Reclamation (implementation)	
Impact 3.7-4: Construction activities associated with the Proposed Project could result in impacts to the state-listed little willow flycatcher (*Empidonax traillii*).			
4.7-4a Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable nesting habitat for the little willow flycatcher is present. If suitable habitat is present, Mitigation Measure 4.7-4b will be implemented.		Reclamation (implementation)	
4.7-4b Grading and other construction activities will be scheduled to avoid the nesting season to the extent possible. The nesting season for this species in Trinity County extends from June 1 through July 31. If construction occurs outside of the breeding season, no further mitigation is necessary. If the breeding season cannot be completely avoided, Mitigation Measures 4.7-4c and 4.7-4d will be implemented.		Reclamation (implementation)	
4.7-4c A qualified biologist will conduct a minimum of one pre-construction survey for the little willow flycatcher within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The pre-construction survey(s) will be used to ensure that no nests of this species within or immediately adjacent to the rehabilitation site will be disturbed during project implementation. To the extent possible given timing for construction and with the contract award, pre-construction surveys will conform to methodologies identified in a Willow Fly Catcher Survey Protocol for California available online at		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
<https://www.wildlife.ca.gov/Conservation/Survey-Protocols>. If an active nest is found, CDFW will be contacted prior to the start of construction to determine the appropriate mitigation measures.			
4.7-4d If vegetation is to be removed by the projects and all necessary approvals have been obtained, potential nesting substrate (e.g., shrubs and trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.		Reclamation (implementation)	
Impact 3.7-5: Construction activities associated with the Proposed Project could result in impacts to the foothill yellow-legged frog (*Rana boylii*).			
4.7-5a If any construction in the Trinity River channel will occur prior to August 1 of any construction season, a pre-construction survey for the foothill yellow-legged frog larvae and/or eggs will be conducted by a qualified biologist. This survey will be conducted within the construction boundary no more than 2 weeks prior to the start of in-stream construction activities. If larvae or eggs are detected, the biologist will relocate them to a suitable location outside of the construction boundary.		Reclamation (implementation)	
4.7-5b In the event that a foothill yellow-legged frog is observed within the construction boundary, the contractor will temporarily halt in-stream construction activities until qualified personnel have moved the frog(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFW prior to construction.		Reclamation (implementation)	
4.7-5c Mitigation measures identified in Section 3.5 (Water Quality) of this EA/IS for addressing erosion and sedimentation and accidental spills will be fully implemented to mitigate for potential indirect impacts to dispersal habitat for the foothill yellow-legged frog due to sedimentation and accidental spills.		Reclamation (implementation)	
4.7-5d Mitigation measures associated with the disturbance to riparian habitat (Mitigation Measures 4.7-1a, 4.7-1b, and 4.7-1c) will be fully implemented.		Reclamation (implementation)	
Impact 3.7-6: Construction activities associated with the Proposed Project could result in impacts to the western pond turtle (*Actinemys marmorata pallida*).			
4.7-6a A minimum of one survey for western pond turtle nests will be conducted during the nesting season (generally late June-July) prior to construction. A qualified biologist will be retained by Reclamation to conduct the survey. If a western pond turtle nest is found, the biologist will flag the site and determine whether construction activities can avoid affecting the nest. If the nest cannot be avoided, the nest will be excavated by the biologist and reburied at a suitable location outside of the construction limits.		Reclamation (implementation)	
4.7-6b Prior to construction in open water habitat, a qualified biologist will trap and move western pond turtles out of the construction area to nearby suitable habitats.		Reclamation (implementation)	
4.7-6c During construction, in the event that a western pond turtle is observed within the construction limits, the contractor will temporarily halt construction activities until qualified personnel have moved the		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
turtle(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFW prior to construction.			
4.7-6d Mitigation measures presented in Section 4.5 (Water Quality) for addressing erosion and sedimentation and accidental spills will be fully implemented to mitigate for the potential indirect impacts to potential dispersal habitat due to sedimentation and accidental spills.		Reclamation (implementation)	
4.7-6e The mitigation measure associated with the disturbance to riparian habitat (Mitigation Measures 4.7-1a, 4.7-1b, and 4.7-1c) will be fully implemented.			
Impact 3.7-7: Construction activities associated with the Proposed Project could result in impacts to nesting Vaux's swift (C*haetura vauxi*), California yellow warbler (*Dendroica petechia*), and yellow-breasted chat (*Icteria virens*).			
4.7-7a Prior to the start of construction, a qualified biologist will conduct surveys of the rehabilitation sites to determine whether suitable nesting habitat for the species is present. If suitable habitat is present, Mitigation Measure 4.7-7b will be implemented.		Reclamation (implementation)	
4.7-7b Grading and other construction activities will be scheduled to avoid the nesting season for these species to the extent possible. The nesting season for these species in Trinity County extends from March 15 through July 31. If construction occurs outside the breeding season, no further mitigation is necessary. If construction during the breeding season cannot be completely avoided, Mitigation Measures 4.7-7c and 4.7-7d will be implemented.		Reclamation (implementation)	
4.7-7c A qualified biologist will conduct a minimum of one preconstruction survey for these species within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The preconstruction surveys will be used to ensure that no nests of these species within or immediately adjacent to the rehabilitation sites will be disturbed during project implementation. If an active nest is found, a qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest.		Reclamation (implementation)	
4.7-7d If vegetation is to be removed by the project and all necessary approvals have been obtained, potential nesting habitat (e.g., shrubs and trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.		Reclamation (implementation)	
Impact 3.7-8: Construction activities associated with the Proposed Project could result in impacts to bald eagle (*Haliaeetus leucocephalus*) and northern goshawk (*Accipiter gentilis*).			
Due to the removal of the bald eagle from the endangered species list and the availability of the National Bald Eagle Management Guidelines provided by the US Fish and Wildlife Service to protect the bald eagle, modified commitments are outlined below. These measures are now stricter than those outlined in		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
the Master EIR and provide additional protections for the bald eagle to abide by directives within the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d): Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether potential Bald Eagle or northern goshawk habitat occurs. If potential habitat occurs, Reclamation will implement the following commitment. Construction will be scheduled to avoid the bald eagle and northern goshawk nesting season to the extent feasible. The nesting season for most raptors in Trinity County extends from January 1 through July 31. Thus, if construction can be scheduled to occur between August 1 and January 1, the nesting season will be avoided and no impacts to nesting bald eagles or northern goshawks would occur. Due to the removal of the bald eagle from the endangered species list and the availability of the National Bald Eagle Management Guidelines provided by the US Fish and Wildlife Service to protect the bald eagle, modified commitments are outlined below. These measures are now stricter than those outlined in the Master EIR and provide additional protections for the bald eagle to abide by directives within the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d): Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether potential Bald Eagle or northern goshawk habitat occurs. If potential habitat occurs, Reclamation will implement the following commitment. Construction will be scheduled to avoid the bald eagle and northern goshawk nesting season to the extent feasible. The nesting season for most raptors in Trinity County extends from January 1 through July 31. Thus, if construction can be scheduled to occur between August 1 and January 1, the nesting season will be avoided and no impacts to nesting bald eagles or northern goshawks would occur.			
4.7-8a Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable habitat for the species is present. If suitable habitat is present, Mitigation Measure 4.7-8b will be implemented.		Reclamation (implementation)	
4.7-8b Construction will be scheduled to avoid the nesting season for bald eagles and northern goshawks to the extent feasible. The nesting season for most raptors in Trinity County extends from January 1 through July 31. Thus, if construction can be scheduled to occur between August 1 and February 14, the nesting season will be avoided and no impacts to nesting bald eagles and northern goshawks will be expected. If it is infeasible to schedule construction during this time, Reclamation will implement the provisions outlined in the incidental take permit for bald eagles issued by the USFWS prior to the initiation of construction.		Reclamation (implementation)	
4.7-8c Pre-construction surveys for new (unknown) locations of bald eagles and nesting northern goshawks will be conducted by a qualified biologist to ensure that no disturbance will occur during project implementation. These surveys will be conducted no more than 14 days prior to the initiation of construction activities. The biologist will conduct surveys immediately adjacent to the impact areas for bald eagles and northern goshawk nests. If eagles or an active nest are found within 500 feet of the construction areas to be disturbed by these activities, the biologist, in consultation with the CDFW and the		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
National Bald Eagle Management Guidelines, will determine the extent of a construction-free buffer zone to be established.			
4.7-8d If vegetation is to be removed as part of the project and all necessary approvals have been obtained, potential nesting habitat (i.e., trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts. Directives under the Bald and Golden Eagle Management Protection Act will be adhered to.		Reclamation (implementation)	
Impact 3.7-9: Construction activities associated with the Proposed Project could result in impacts to special status bats and the ring-tailed cat (*Bassariscus astutus*).			
4.7-9a Pre-construction surveys for roosting bats and ring-tailed cats will be conducted prior to the start of construction activities. The surveys will be conducted by a qualified biologist. No activities that will result in disturbance to active roosts of special status bats or dens of ring-tailed cats will proceed prior to completion of the surveys. If no active roosts or dens are found, no further action is needed. Because bats are known to abandon young when disturbed, if a maternity roost is located, a qualified bat biologist will determine the extent of a construction-free zone to be implemented around the roost. If a bat maternity roost or hibernaculum is present, or a ring-tailed cat den is present, Mitigation Measures 4.7-9b and/or 4.7-9c will be implemented. CDFW will also be notified of any active bat nurseries within the disturbance zones.		Reclamation (implementation)	
4.7-9b If an active maternity roost or hibernaculum is found, the projects will be redesigned to avoid the loss of the tree or structure occupied by the roost, if feasible. If the projects cannot be redesigned to avoid removal of the structure, demolition of that structure will commence before bat maternity colonies form (i.e., prior to March 1) or after young are volant (flying) (i.e., after July 31). The disturbance-free buffer zones described above will be observed during the bat maternity roost season (March 1–July 31). If a non-breeding bat hibernaculum is found in a tree or structure to be razed, the individuals will be safely evicted under the direction of a qualified bat biologist, by opening the roosting area to allow air to flow through the cavity. Demolition will then follow no sooner than the following day (i.e., there will be no less than one night between initial disturbance for air flow and the demolition). This action will allow bats to leave during dark hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. Trees with roosts that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during darker hours.		Reclamation (implementation)	
4.7-9c Ring-tailed cats are fully protected species under Fish and Game Code Section 4700. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research. If an active ring-tailed cat nest is found, the projects will be redesigned to avoid the loss of the tree occupied by the nest if feasible. If the projects cannot be redesigned to avoid removal of the occupied tree, the CDFW will be contacted for their input. If approved by CDFW, demolition of the tree will commence outside of the		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
breeding season (February 1 to August 30). If a non-breeding den is found in a tree scheduled to be removed, prior to disturbance, the CDFW will be notified to review and approve proposed procedures to ensure that no take occurs as a result of the action. Trees with dens that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow ring-tailed cats to escape during the darker hours.			
Impact 3.7-11: Construction activities associated with the proposed project could result in impacts to BLM and U. S. Forest Service (USFS) sensitive species.			
Mitigations measures identified previously would reduce impacts to BLM and USFS sensitive species to less than significant. Mitigation measures 4.7-4a, 4.7-4b, and 4.7-4c would reduce impacts to the little willow flycatcher to a less than significant level. Mitigation measures 4.7-5a, 4.7-5b, 4.7-5c, and 4.7-5d would reduce the impacts to the foothill yellow-legged frog to a less than significant level. Mitigation measures 4.7-6a, 4.7-6b, 4.7-6c, and 4.7-6d would reduce the impacts to the western pond turtle to a less than significant level. Mitigation measures 4.7-8a, 4.7-8b, and 4.7-8c would reduce the impacts to the northern goshawk to a less than significant level. Mitigation measures 4.7-9a and 4.7-9b would reduce impacts to special status bats and the ring-tailed cat to less than significant.		Reclamation (implementation)	
Impact 3.7-13: Implementation of the proposed project could result in the spread of non-native and invasive plant species.			
4.7-13a When using imported erosion control materials (as opposed to rock and dirt berms), use only certified weed-free materials, mulch, and seed. On NFS lands, avoid areas contaminated with known occurrences of *Didymosphenia geminata* (didymo). If no areas are available, water drafting equipment will be cleaned by approved methods prior to drafting water from an uncontaminated location. Didymo-infested water shall be discharged away from a water source or from the same source where it was taken.		Reclamation (implementation)	
4.7-13b Preclude the use of rice straw in riparian areas.		Reclamation (implementation)	
4.7-13c Limit any import or export of fill to materials to those that are known to be weed free.		Reclamation (implementation)	
4.7-13d Ensure all construction equipment is thoroughly washed prior to entering and leaving the worksite. Equipment will be inspected to ensure that it is free of plant parts as well as soils, mud, or other debris that may carry weed seeds.		Reclamation (implementation)	
4.7-13e Use a mix of native grasses, forbs, and non-persistent non-native species for seeding disturbed areas that are subject to infestation by non-native and invasive plant species. Where appropriate, a heavy application of mulch will be used to discourage introduction of these species. Use of planting plugs of native grass species may also be used to accelerate occupation of disturbed sites and increase the likelihood of reestablishing a self-sustaining population of native plant species.		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.7-13f Within the first 3 to 5 years post-project, if it is determined that the project has caused non-native invasive vegetation to out-compete desired planted or native colonizing riparian vegetation, opportunities to control these non-native species will be considered. When implementing weed control techniques, the approach will consider using all available control methods known for a weed species.		Reclamation (implementation)	
4.7-13g Within the first 3 to 5 years post-project, if it is determined that onsite revegetation/post-project conditions do not meet landowner requirements, opportunities to revisit the site and remedy the concern will be considered.		Reclamation (implementation)	
3.8 RECREATION			
Impact 3.8-1: Construction associated with the proposed project could disrupt recreation activities such as boating, fishing, and swimming in the Trinity River.			
4.8-1a Reclamation shall provide precautionary signage to warn recreational users of the potential safety hazards associated with project construction activities. Signs and/or buoys shall be placed within and directly adjacent to the project boundaries along the Trinity River in accordance with the requirements specified in Title 14, Article 6 of the California Code of Regulations. Notification signs shall be posted at public river access areas located within the project area and managed by BLM. Additionally, public notification of proposed project construction activities and associated safety hazards shall be circulated in the local *Trinity Journal* newspaper prior to the onset of project construction.		Reclamation (implementation)	
4.8-1b Reclamation will repair and/or replace any facilities associated with the Proposed Project that are impacted by project activities. This measure includes installation of interpretive signage consistent with the requirements of the BLM. Preconstruction meetings between Reclamation and landowners/land managers will identify the amount of vegetative screening to be retained at each recreation site within the project area.		Reclamation (implementation)	
Impact 3.8-2: Construction of the proposed project could result in an increased safety risk to recreational users or resource damage to lands within the project boundaries.			
Implementation of Mitigation Measures 4.8-1a and 4.8-1b described above would make this impact less than significant.		Reclamation (implementation)	
Impact 3.8-3: Construction activities associated with the proposed project could lower the Trinity River's aesthetic values for recreationists by increasing its turbidity.			
Mitigation measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e described above for impact 3.5-1 would reduce impacts to less than significant.		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
3.10 CULTURAL RESOURCES			
Impact 3.10-2: Implementation of the proposed project could potentially result in disturbance of undiscovered prehistoric or historic resources.			
4.10-2a Prior to initiation of construction or ground-disturbing activities, all construction workers will be alerted to the possibility of discovering cultural resources. This includes prehistoric and/or historic resources. Personnel will be instructed that upon discovery of buried cultural resources, work within 50 feet of the find will be halted and Reclamation's designated archaeologist will be consulted. Once the find has been identified, Reclamation will be responsible for developing a treatment plan for the cultural resource including an assessment of its historic properties and methods for avoiding any adverse effects, pursuant to the Programmatic Agreement and in compliance with the National Historic Preservation Act.		Reclamation (implementation)	
Impact 3.10-3: Implementation of the proposed project could potentially result in disturbance of undiscovered human remains.			
4.10-3a If human remains are encountered during construction on non-federal lands, work in that area will be halted and the Trinity County Coroner's Office will be immediately contacted. If the remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) will be notified within 24 hours of determination, as required by PRC, Section 5097. The NAHC will notify designated Most Likely Descendants, who will provide recommendations for the treatment of the remains within 48 hours from the time that they gain access to the site. The NAHC will mediate any disputes regarding treatment of remains. If Native American human remains and associated items are discovered on federal lands, they will be treated according to provisions set forth in the Native American Protection and Repatriation Act (25 USC 3001) as well as Reclamation's Directives and Standards LND 02-01. If the find is determined to be a historical resource or a unique archaeological resource, as defined by CEQA, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or other appropriate mitigation will be made available. Work may continue on other parts of the project while mitigation for historical or unique archaeological resources takes place.		Reclamation (implementation)	
3.11 AIR QUALITY			
Impact 3.11-1: Construction activities associated with the proposed project could result in an increase in fugitive dust and associated particulate matter (PM_{10} and $PM_{2.5}$) levels.			
4.11-1a Reclamation will implement a dust control program to limit fugitive dust and particulate matter emissions. The dust control program will include the following elements as appropriate: • Inactive construction areas will be watered as needed to ensure dust control. • Pursuant to the California Vehicle Code (Section 23114), all trucks hauling soil or other loose material to and from the construction site will be covered or will maintain adequate freeboard to ensure retention of materials within the truck's bed (e.g., ensure 1-2 feet vertical distance between top of load and the trailer). • Excavation activities and other soil-disturbing activities will be conducted in phases to reduce the amount of bare soil exposed at any one time. Mulching with weed-free materials will be used to		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
minimize soil erosion, as described in Section 3.3, Geology, Fluvial Geomorphology, and Soils, and Section 3.5, Water Quality. • Watering (using equipment and/or manually) will be conducted on all stockpiles, dirt/gravel roads, and exposed or disturbed soil surfaces, as necessary, to reduce airborne dust. • All paved access roads, parking areas, and staging areas will be swept (with water sweepers), as required by Reclamation. • Paved roads will be swept (with water sweepers) if visible soil material is carried onto adjacent private and public roads, as required by Reclamation. • All ground-disturbing activities with the potential to generate dust will be suspended when winds exceed 20 mph, as directed by the North Coast Air Quality Management District (NCUAQMD). • Reclamation or its contractor will designate a person to monitor dust control and to order increased watering as necessary to prevent transport of dust offsite. This person will also respond to citizen complaints.			
Impact 3.11-2: Construction activities associated with the proposed project could result in an increase in construction vehicle exhaust emissions.			
4.11-2a Reclamation will comply with NCUAQMD Rule 104 (4.0) Particulate Matter. This compliance could occur by using portable internal combustion engines registered and certified under the state portable equipment regulation (Health & Safety Code 41750 through 41755).		Reclamation (implementation)	
Impact 3.11-4: Construction activities would generate short-term and localized fugitive dust, gas, and diesel emissions, and smoke that could affect adjacent residences and schools.			
4.11-5a Construction activity occurring within 300 feet of elementary schools will be limited to the period when school is not in session.		Reclamation (implementation)	
4.11-5b Construction activity occurring within 300 feet of residences will be limited to Monday through Saturday, from the hours of 9 a.m. to 5 p.m.		Reclamation (implementation)	
4.11-5c Reclamation will notify residences within 300 feet of the site and project activity and elementary schools will be notified of construction activity located near the school prior to site construction activities.		Reclamation (implementation)	
4.11-5d Reclamation will ensure that a notice is posted at/adjacent to the rehabilitation site, which contains a phone number for the public to contact for concerns related to air quality.		Reclamation (implementation)	
3.12 VISUAL RESOURCES			
Impact 3.12-1: Implementation of the proposed project could result in the degradation and/or obstruction of a scenic view from key observation areas.			
Implementation of mitigation measures 4.7-1a, 4.7-1b, and 4.7-1c described above for Impact 3.7-1 and mitigation measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e described above for Impact 3.5-1 would reduce impacts to less than significant.		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
3.14 NOISE			
Impact 3.14-1: Construction activities associated with the proposed project would result in noise impacts to nearby sensitive receptors.			
4.14-1a Construction activities near residential areas will be scheduled between 7:00 a.m. and 7:00 p.m., Monday through Saturday. No construction activities will be scheduled for Sundays or other hours and days established by the local jurisdiction (i.e., Trinity County). The contractor may submit a request for variances in construction activity hours from Reclamation as needed.		Reclamation (implementation)	
4.14-1b Reclamation will require that all construction equipment be equipped with manufacturer's specified noise muffling devices.		Reclamation (implementation)	
4.14-1c Reclamation will require placement of all stationary noise-generating equipment as far away as feasibly possible from sensitive noise receptors or in an orientation minimizing noise impacts (e.g., behind existing barriers, storage piles, unused equipment).		Reclamation (implementation)	
3.15 PUBLIC SERVICES AND UTILITIES/ENERGY			
Impact 3.15-3: Implementation of the proposed project could result in disruption to emergency services, school bus routes, or student travel routes during construction activities.			
4.15-3a Reclamation will require that staging and construction work, including temporary road or bridge closures occurs in a manner that allows for access by emergency service providers.		Reclamation (implementation)	
4.15-3b Reclamation will provide 72-hour notice to the local emergency providers and affected users prior to the start of temporary closures.		Reclamation (implementation)	
4.15-3c Reclamation will coordinate road closures occurring during the school year (mid-August through mid-June) with the appropriate school districts to avoid disruption of school attendance and student access to bus service.		Reclamation (implementation)	
3.16 TRANSPORTATION/TRAFFIC CIRCULATION			
Impact 3.16-2: Construction activities would generate short-term increases in vehicle trips.			
4.16-2a Reclamation will post signs during gravel haul activities notifying travelers of trucks entering the roadway. Reclamation will ensure that gravel trucks maintain a speed limit of 15 mph on residential and private roads and operate only between the hours of 7 a.m. and 7 p.m., Monday through Saturday.		Reclamation (implementation)	
Impact 3.16-4: Construction activities would increase wear and tear on local roadways.			
4.16-4a Reclamation will perform a pre-construction survey of local federal and state roads to determine the existing roadway conditions of the construction access routes, and will consult with the relevant agencies/private parties about road conditions prior to construction activity and post construction activity.		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
An agreement will be entered into prior to construction that will detail the pre-construction conditions and post-construction requirements for potential roadway rehabilitation.			
Impact 3.16-5: Construction activities could pose a safety hazard to motorists, bicyclists, pedestrians, and equestrians.			
4.16-5a Reclamation will prepare and implement a traffic control plan that will include provision and maintenance of temporary access through the construction zone, reduction in speed limits though the construction zone, signage and appropriate traffic control devices, illumination during hours of darkness or limited visibility, use of safety clothing/vests to ensure visibility of construction workers by motorists, and fencing as appropriate to separate bicyclists, pedestrians, and equestrians from construction activities. Reclamation will obtain encroachment permits from the appropriate entities to work within road easements. These permits will require traffic control and signage to meet California standards.		Reclamation (implementation)	

PROJECT DESIGN ELEMENTS

Project design elements are specific design features proposed by the project applicant and incorporated into the project to prevent the occurrence of, or reduce the significance of potential environmental effects. Because project design elements have been incorporated into the project, they do not constitute mitigation measures as defined by CEQA. However, project design elements are identified to ensure that they are included in the MMRP to be developed and implemented as part of the Proposed Project. The design elements discussed below are common to the Proposed Project. These elements are excerpted from Chapter 2 of the Draft Master EIR.

DESCRIPTION OF COMMON ACTIVITIES AND CONSTRUCTION CRITERIA AND METHODS

Common Activities

Vegetation Removal

Vegetation removal would involve the following:

- Remove vegetation to provide access to activity areas using a combination of manual labor and heavy equipment (i.e., chainsaw, excavator, and vegetation masticator).

- Remove stumps, roots, and vegetative matter to allow river scour on excavated floodplain surfaces. Some large woody debris would be retained for use in the floodplain to enhance fish habitat.

- Dispose of removed vegetation by chipping, hauling offsite, burning, burying within spoil areas as authorized by agencies or land owners, or other appropriate methods. Where authorized, Reclamation buries organic material to increase water holding capacity of alluvial and colluvial materials. Reclamation would continue to work with the Forest Service, BLM, local agencies and landowners to encourage the efficient use of chipping as a priority method of disposing of vegetative waste.

- Protect vegetation designated for preservation within clearing limits. Vegetation outside the clearing limits would be preserved and protected.

- Mechanically remove submerged roots from river fringe areas with ripping bars or excavator buckets. Equipment chassis (i.e., tires, tracks) would remain outside of the wetted portion of the river channel when removing submerged roots.

Water Use

Water would be used at all sites, in accordance with the following:

- Riparian water rights held by public and private landowners on the Trinity River would be used to obtain Trinity River water to support restoration. Dust abatement water would be obtained from onsite seep wells or the Trinity River. When drafting from the Trinity River, pump intakes would be in conformance with criteria established by NMFS and CDFW to prevent impacts to aquatic organisms. Make-up water pumped from the river would pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 fps.

In the event irrigation is necessary for revegetation efforts, the primary water source would be the Trinity River. Any surface water sources used for irrigation would be developed in order to comply with the water rights of land management agencies and landowners. Pump intakes would be in conformance with criteria established by NMFS and CDFW to prevent impacts to aquatic organisms. Make-up water pumped from the river would pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 fps.

Monitoring

The Record of Decision (ROD) provided a restoration strategy for the TRRP but did not identify methods for assessing the effectiveness of the management actions in achieving TRRP goals or management targets. Instead, it directed the TRRP to organize assessments around the principles of Adaptive Environmental Assessment and Management (AEAM) program and to use this to rigorously assess the river's response to management actions. The Integrated Assessment Plan (IAP) provides the basis for applying the AEAM principles outlined in the ROD.

These principles would be applied to quantitatively determine the overall status and trend of river system attributes relative to TRRP objectives, using appropriate data to describe each attribute, with data collected based upon scientifically defensible monitoring designs. The causal relationship between rehabilitation of the fluvial nature of the river and increasing salmonid production would be the major focal point for monitoring and modeling. The focus of the IAP is to identify key assessments that:

- Evaluate long-term progress toward achieving program goals and objectives; and
- Provide short-term feedback to improve program management actions by testing key hypotheses and reducing management uncertainties.

The IAP provides a general framework for integrating and linking assessments across monitoring domains. Integration of assessments would be essential for evaluating the TRRP's overall restoration strategy, involving coordinated actions to support multiple ecosystem processes and components. This integration allows development of coordinated sampling designs and assessments that serve multiple or complementary objectives, and is intended to improve the understanding of qualitative and quantitative functional relationships associated with the mainstem Trinity River.

The IAP framework focuses on six key elements; each of these would be integrated into the MMRP to ensure that authorized activities are consistent with the AEAM. Key elements of the IAP include:

1. Create and maintain spatially complex channel morphology.

2. Increase/improve habitats for freshwater life stages of anadromous fish to the extent necessary to meet or exceed production goals.

3. Restore and maintain natural production of anadromous fish populations.

4. Restore and sustain the natural production of anadromous fish populations downstream of Lewiston Dam to pre-dam levels to facilitate dependent tribal, commercial, and sport fisheries' full participation in the benefits of restoration via enhanced harvest opportunities.

5. Establish and maintain riparian vegetation that supports fish and wildlife.

6. Rehabilitate and protect wildlife habitats and maintain or enhance wildlife populations following implementation.

Additional information on the IAP is available on the TRRP website: *http://www.trrp.net/science/IAP.htm*

Design Elements

Attachment 1 following the appendices in Volume IV of the 2009 Master EIR is a glossary of design and construction terms for use by the design team.

Hydraulics

The Proposed Project would occur in areas that the Federal Emergency Management Agency (FEMA) has designated as Special Hazard Zones AE and X, as described in Section 3.2 of this document. In the Zone AE areas, Reclamation has established a design criterion stating that not only would the County's floodplain ordinance be followed, but implementation of the Proposed Project would not increase the flood risk for the community. This criterion resulted in a stipulation that coarse sediment and excavated material would be strategically placed to ensure that 100-year flood elevations would not increase over current conditions. As previously described, the site boundaries generally conform to the river corridor, bounded by prominent geographic features such as roads and fences.

The design of the activity areas was based on an understanding of the relationships between the flow regime and the hydrologic/hydraulic characteristics of the action. A fundamental constraint was to *do nothing to increase the flood risk in the general vicinity, and to not raise the water surface elevation above the current FEMA estimated 100-year base flood elevation.* Evaluation of the Proposed Project requires comparing estimated seasonal base flows and estimated return-period flows. USACE's HEC-RAS hydraulic model would be used by the design team during final design activities to predict changes in flood elevations at various points along the project reach. Table F-2 lists the components of the flow regime, the seasonal or other periodic return intervals, and the flow rates that would be used during final design to ensure that the action meets the flood constraints described above.

Table F-2. Estimated Mainstem Trinity River Flow Conditions Used for Design

Flow Description	Flow Event	Flow Rate (cfs)
Summer base flow[a] (July 22 to October 15 of each year)	Q_s	450
1.5-year return interval design flow	$Q_{1.5}$	6,000
Estimated FEMA 100-year flow below Rush Creek	Q_{100}	19,300
Estimated FEMA 100-year flow below Grass Valley Creek	Q_{100}	23,600

a Base flow defined as cfs from TRD release and accretion flow
Q = flow rate; Q1.5 = 1.5 year return interval design flow; Q100 = 100-year flood flow; Qs = summer base flow

A HEC-RAS model for the Trinity River from Lewiston Dam to the North Fork Trinity River was developed by California Department of Water Resources (DWR) and provided to the TRRP as part of the administrative record. This model was calibrated to match measured water surface elevations (WSEs) in the Trinity River within and adjacent to the site boundaries for the design flow. Since WSEs have not been measured (validated) for the 100-year flow, the predicted WSEs are based on the output of the model using carefully selected Manning's "n" values that reflect the overbank conditions at each site. The

model incorporates empirical data from surveyed cross-sections, including bathymetric and overbank/floodplain topography in the general vicinity of the rehabilitation sites. To obtain WSEs for design flows, the model was calibrated using surveyed WSEs and known flows (from gage data). The model was determined to be accurate for the level of evaluation and design required.

There are several significant flow conditions that are important to the design of the Proposed Project. Two of the most important flow conditions are summertime low flows of about 450 cfs, which is the release from Lewiston Dam, and the 1.5-year-event (ordinary high water) flow of 6,000 cfs, as measured below Rush Creek. The design team regards the design flows shown in Table F-1 as the "best available information" per FEMA requirements. The FEMA Q_{100} "near Douglas City" (38,500 cfs) was established in the 1976 USACE report (USACE 1976) used by FEMA to develop the current FIRMs for the Trinity River. The 6,000 cfs 1.5-year event is based on the ROD flow release. This flow information provides the basis for the designs incorporated into the Proposed Project.

The HEC-RAS hydraulic model was developed and calibrated for the existing conditions to calculate the WSE at various flow releases. The calibration was based on water-surface profiles surveyed at low flow and water profiles and points surveyed at different flows, ranging from 4,500 cfs to 10,000 cfs releases from Lewiston Dam. After the model was properly calibrated, various WSEs were determined for the activity areas and used to develop the design topography. The illustrations at the end of this chapter portray the design topography concepts. The final designs would ensure that constructed surfaces are self-draining in order to minimize potential fish stranding.

Roadway Approaches

As an alternative to disposing of excavated materials onsite, materials may be hauled to commercially approved off-site locations. This option would reduce the impact of spoiling excavated materials in upland habitats. Hauling a portion of excavated materials generated under the Proposed Project could require substantial truck traffic to off-site locations. The traffic would be staged over the project duration, generally between August 1 and November 15. Traffic control measures would be applied in accordance with BLM, Trinity County, and Caltrans requirements.

Recreation Facilities

As appropriate, federal, state, county or private recreation facilities (e.g., parking areas, access trails, picnic areas) affected by project activities would be returned to the same level of service as those offered prior to project implementation. Reclamation, in consultation with the managers and owners of these facilities could enhance one or more of these facilities consistent with project objectives and in compliance with federal, state and county planning requirements. While the Forest Service and BLM have not identified any recreational enhancements, these agencies may require barricades along existing access routes to confine recreational traffic to the existing routes on federal lands.

Drainage

As appropriate, culverts or other drainage structures would be constructed at temporary stream crossings or cross-drainage channels to allow for unimpeded surface drainage.

Rights-of-Way/Easements

Prior to construction, formal realty agreements would be made between Reclamation; land managers for BLM, DWR, and CDFW; and private landowners whose property would be affected. These agreements would clarify the terms and conditions under which Reclamation would work on private property. In addition, these agreements would compensate landowners, based on fair market value of identified construction easements, and would hold property owners harmless during construction activities.

Utilities

There are a number of utility features located within and/or adjacent to the site boundaries. Water intakes, power and telephone poles, and water supply lines parallel or cross the Trinity River in a number of locations. These utilities are considered in the project design to ensure that service would not be disrupted.

Construction Criteria and Methods

Construction Process Overview

- Vegetation removal would occur as necessary and in compliance with all regulatory requirements. An expected August 1 start date for clearing and grubbing of vegetation would allow completion of nesting by avian species. Alternatively, vegetation may be removed prior to the start of the nesting season, which is early March for this area.

- Where available, existing roads (activity L) would be used to access the activity areas. New access roads and haul routes (activity M) would be constructed when necessary and restored to a stable condition in accordance with landowner/land manager requirements at the completion of the project.[1]

- Excavation would begin on the floodplain to bring it down to grade.

- When specified, finer grained materials (e.g., sand) excavated from riverine activity areas may be stockpiled for use at upland or other riverine activity areas.

- Any riverine treatment areas (e.g., constructed inundation surfaces) that have been compacted from construction activities would be ripped to a depth of approximately 18 inches; no ripping would occur under wet soil conditions. The furrows developed by this ripping would ensure that most storm water runoff is retained and filtered onsite so that there is little or no construction-related turbidity. This action would effectively control the release of storm water runoff and turbidity from the site and eliminate the need for use of post-construction sediment-control measures (e.g., silt fences, berms).

- The timing for work adjacent to the river may be affected by river flows. If for some reason the flow is low when construction starts, but it is anticipated that flows would increase before the floodplain can be excavated, excavation would occur at the lower elevations (adjacent to river) first and at the higher floodplain elevations last.

[1] Activity types L and M were included in the 2009 Master EIR, but do not apply to this project

- In-channel activities would generally take place during low flows (July 15 to September 15 as allowed by the coho salmon in-river work window in NMFS' 2000 Trinity River biological opinion) to create immediate point bars and allow mobilization of in-channel materials at high flows.

- Alcoves and side channels would be constructed from the existing grade down slope. Measures would be taken (e.g., sediment plug, sandbags) to isolate the work area from flowing water. If necessary, pumps would be used to dewater the excavation to inhibit any sediment from entering the river. Typically, reconnecting these features to the river relies on high-flow events. If necessary, the TRRP would remove materials used to isolate these side channels after they have been constructed.

- Final grading would occur as necessary for all activity areas.

- Demobilization of construction equipment and site clean-up would be accomplished consistent with Reclamation requirements.

- Revegetation would take place during wet conditions (fall/winter) and would generally occur in riparian areas to maximize use by fish and wildlife species. Projects would be designed and implemented to achieve no net loss in riparian vegetation (within the project site boundaries) from planting and natural revegetation consistent with the Draft Riparian Revegetation Plan.

In-River Construction

- Where necessary, heavy equipment would be used to grub tree and shrub roots from the edge of the river. Vegetation would often be maintained along the river's active channel to maintain the currently available low-water fish habitat. During root removal, equipment chassis would generally not enter the low-water river channel.

- In-river excavation would generally begin at the far edge of the activity area and work back toward the riverbank so that heavy equipment is on dry land or in shallow water.

- In-river materials or coffer dams may be used to temporarily redirect flow around work areas and to create platforms from which to work. In addition to providing the means for volitional fish passage (upstream and downstream), at least one navigable (by raft/boat) passage through the activity area would remain open at all times.

Traffic Control/Detour

Short-term traffic control is expected and would be in conformance with the following requirements established by the appropriate jurisdictional authority for mobilization and demobilization of heavy equipment or wide-load vehicles:

- Reclamation would coordinate with jurisdictional agencies to identify specific requirements that shall be included for use of existing roadways and haul routes. Requirements may include seasonal or other limitations or restrictions, payment of excess size and weight fees, and posting of bonds conditioned upon repair of damage.

- Temporary construction access may be required; access routes shall be of a width and load-bearing capacity to provide unimpeded traffic for construction purposes.

Staging Areas

Staging areas and storage facilities for the Proposed Project are shown on Figure 3. These areas would be used throughout the duration of the project activities. Some short-term staging and equipment storage and parking would be needed in the activity areas as the project is implemented.

Air Pollution and Dust Control

Efforts would be made to minimize air pollution and reduce greenhouse gas emissions related to construction operations. Reclamation specifications require that the contractor comply with all applicable air pollution control rules, regulations, ordinances, and statutes. In addition, project contractors would be given educational material about fuel efficiency and the benefits of using vehicles powered by alternative energy sources to enhance awareness of global warming issues. Contractors would also be required to provide recycling bins for onsite waste materials.

Contract documents would also specify that the contractor would be responsible for limiting dust by watering construction site areas used by trucks and vehicles. If water is taken from the river, pump intakes would be in conformance with criteria established by NMFS and CDFW to prevent impacts to aquatic organisms. Make-up water pumped from the river would pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 fps.

Fire Protection and Prevention

Due to the high fire hazard and history of equipment-caused fires in Trinity County, construction contractors would be required to follow applicable regulations of Public Resource Code 4428-4442 during dry periods to minimize the potential for the initiation and spread of fires from the work site.

Water Pollution Prevention

Reclamation would implement water pollution control measures that conform to applicable and appropriate permits. Reclamation would require the contractor to use extreme care to prevent construction dirt, debris, storm water run-off, and miscellaneous byproducts from entering the stream. Some key water pollution control measures that would be implemented by Reclamation are listed below:

- Every reasonable precaution would be exercised and BMPs would be implemented to protect the Trinity River from being polluted by fuels, oils, petroleum byproducts, and other harmful materials and shall conduct and schedule operations to avoid or minimize muddying and silting of the river. Care shall be exercised to preserve roadside vegetation beyond the limits of construction.

- Construction equipment would be cleaned of dirt and grease prior to any in-channel activities. All construction equipment would be inspected daily and maintained to ensure that fuel or lubricants do not contaminate the Trinity River. Spill containment kits would be onsite at all times and, where feasible, berms or other containment methods would be kept in place around the work areas when performing in-channel work.

APPENDIX G

Aquatic Conservation Strategy Consistency Evaluation

APPENDIX G

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) Aquatic Conservation Strategy Consistency Evaluation

INTRODUCTION

The Bureau of Reclamation (Reclamation), under the auspices of the Trinity River Restoration Program (TRRP), is the proponent for implementing a series of channel rehabilitation and sediment management activities throughout the 40-mile reach of the Trinity River below Lewiston Dam. This evaluation is for the Dutch Creek site at (River Mile 85.1–86.6), as described in Chapter 2 of this EA/IS.

This document evaluates and determines the consistency of the TRRP activities with the Aquatic Conservation Strategy (ACS) in the 1994 Record of Decision (1994 ROD) for the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Related Species within the Range of the Northern Spotted Owl. The ACS was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. The ROD amended the Redding Resource Management Plan (RMP) prepared by the Bureau of Land Management (BLM) in 1994 and is incorporated into the 1995 Shasta-Trinity National Forest Land and Resource Management Plan (STRNF LRMP).

The intent of this evaluation is to ensure that decision makers have the information necessary to determine whether the TRRP activities at the Dutch Creek site are consistent with the ACS objectives. This evaluation incorporates information provided in the Mainstem Trinity River Watershed Analysis (U.S. Bureau of Land Management 1993), incorporates by reference the 2009 Master Environmental Impact Report prepared by Reclamation in cooperation with BLM, and other information in the administrative record to assist the decision maker. In order to make the finding that a project or management activity "meets" or "does not prevent attainment" of the ACS objectives, the decision maker must ensure that management actions that do not maintain the existing condition or lead to improved conditions in the long term would not be implemented.

The ACS states that species-specific strategies aimed at defining explicit standards for habitat elements would be insufficient for protecting even the targeted species. The intent of the ACS is to maintain and restore ecosystem health at watershed and landscape scales to protect habitat for fish and other riparian-dependent species and resources and to restore currently degraded habitats. This approach seeks to prevent further habitat degradation and restore habitat over broad landscapes as opposed to implementing individual projects or focusing on small watersheds. Because the ACS is based on natural disturbance processes, the 1994 ROD recognized that it is a long-term strategy that may take decades, and possibly more than a century, to accomplish all of its objectives.

The ACS contains four components: riparian reserves, key watersheds, watershed analysis, and watershed restoration. Each component is integral to improving the health of the aquatic ecosystems encompassed by the 1994 ROD. A detailed discussion of these components is provided in the ROD.

Attachment A of the 1994 ROD includes Standards and Guidelines (S&Gs) that were incorporated as management direction into the BLM Redding RMP and STNF LRMP to ensure compliance with the ROD. This hierarchy of land allocations is described below.

At some locations on NFS and BLM managed lands, land allocations overlap. Standards and Guidelines for Congressionally Reserved Areas must be met first. Second, Riparian Reserve S&Gs apply and are added to S&Gs of other designated areas (e.g., Late Successional Reserves (LSR), matrix). For example, where Riparian Reserves occur within LSRs, both sets of S&Gs apply. In all land allocations, S&Gs in current plans apply where they are more restrictive or provide greater benefits to late-successional forest related species. For this project, two land allocations are applicable to BLM and NFS lands. These are:

- **Riparian Reserves** – Trinity River and Carr Creek and related areas associated with their respective floodplains; and

- **Matrix** – The matrix consists of those federal lands not subject to another land allocation.

The activities proposed by Reclamation under the auspices of the TRRP are confined to a narrow corridor that parallels the Trinity River from Lewiston Dam downstream to Helena, California. This section of the Trinity River is both federally and state designated as a wild and scenic river. Riparian reserve and matrix designations are also used to classify lands within this corridor. This evaluation focuses on Riparian Reserves as defined in the Redding RMP and STNF LRMP.

The following sections of this evaluation address the consistency of the TRRP's Alternative 1 at the Dutch Creek site as a single project with the four components of the ACS and the nine ACS objectives described in Attachment B to the 1994 ROD.

COMPONENTS OF THE AQUATIC CONSERVATION STRATEGY

Riparian Reserves

The project area contains Riparian Reserves, as defined in the BLM's Redding RMP and STNF LRMP. Watershed analyses have been completed by BLM and the Forest Service for federal lands within the Trinity River corridor; these analyses did not modify the designated widths of the Riparian Reserves established in the 1994 ROD established by the S&Gs. The width of the riparian reserves essentially correlates with the floodplain of the Trinity River, as well as a buffer around riparian features identified during the wetland delineation process within the project area defined for the Dutch Creek site. Table G-1 at the end of this appendix shows the S&Gs that were integrated into the project.

Key Watersheds

There are no key watersheds within or downstream of the 40-mile reach of the Trinity River downstream of Lewiston Dam, although the Forest Service does manage key watersheds in the upper Trinity River watershed, primarily associated with the Salmon-Trinity Alps Wilderness Area. This component of the ACS is therefore not applicable to the activities proposed by the TRRP in the Dutch Creek EA/IS.

Watershed Analysis

The BLM conducted watershed analyses for the lands within the Trinity River corridor. These analyses did not identify specific recommendations regarding the riparian reserve widths; therefore, the S&Gs established under the ACS are applicable to this project. Any activities proposed within these riparian reserves will conform to the site-specific conditions established in the S&Gs to ensure consistency with the ACS.

Watershed Restoration

By its nature, the project is a comprehensive ecosystem restoration project intended to restore the physical processes and biological resources of the mainstem Trinity River. While some short-term impacts may occur to riparian-dependent species, the scale of the activities proposed by the TRRP, including this project, ensures that restoration of ecological processes and functions will be consistent with the ACS.

Aquatic Conservation Strategy Objectives

The following section evaluates the consistency of Alternative 1 with the nine ACS objectives listed in Attachment B of the ROD.

The lands managed by the Forest Service and BLM within the range of the northern spotted owl will be managed to:

1. *Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.*

The project by its nature is intended to restore the landscape processes, specifically the alluvial and riparian functions, that have been impaired by construction of the Trinity River Division of the Central Valley Project. The activities that are proposed on federal lands subject to the ACS are an integral part of the larger project and are intended to assist BLM and Forest Service in attaining this ACS objective.

2. *Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.*

The project area defined in Figure 2-1 of the EA/IS for the Dutch Creek site ensures that project activities are implemented in a manner that complements the functional values offered by the Trinity River between Lewiston and Helena. The TRRP, in cooperation with BLM and the Forest Service has been involved in the identification and prioritization of channel rehabilitation sites for a number of years. This project has been designed to acknowledge the interrelationship between aquatic and riparian habitats that occur throughout this reach. Specifically, this project includes a number of activities to enhance the connectivity of aquatic and riparian habitat in the general vicinity of the project area consistent with the overall objectives of the TRRP for the 40-mile reach of the Trinity River downstream of Lewiston Dam. Modifications of floodplains, removal of grade control structures, construction of functional side-channel and off-channel habitat, and augmentation of spawning gravel are examples of restoring connectivity for a variety of aquatic and riparian-dependent species. The intent of this project is to assist the BLM and the Forest Service in attaining this ACS objective.

3. *Maintain and restore the physical integrity of the aquatic system, including shorelines, banks and bottom configurations.*

A fundamental component of the project is the activities intended to restore the bed, banks, and floodplain of the Trinity River. The modification of grade control, expansion of functional floodplain habitat, construction of side channels, efforts to enhance the coarse sediment supply, and placement of large wood and boulders that provide refugia habitat are examples of the activities intended to restore the physical integrity of the aquatic system. Collectively, these efforts are designed to restore the alluvial habitat and associated riparian character of the Trinity River, which was impaired by reductions in flow and sediment upstream. The intent of this project is to assist the BLM and the Forest Service in attaining this ACS objective.

4. *Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.*

By its nature, the project will require removal of vegetation and extensive grading activities, including construction within the active channel of the Trinity River. In 2015, the North Coast Regional Water Quality Control Board (Regional Water Board) reissued three General Permits to the TRRP that provide authorization for channel rehabilitation, fine sediment management, and coarse sediment management activities under Section 401 of the Clean Water Act (CWA). As co-lead agency, BLM and the Forest Service (as a cooperating agency) have also worked closely with the TRRP to ensure that Best Management Practices are incorporated into the project description as environmental commitments to minimize effects on water quality. Compliance with conditions established by the U.S. Army Corps of Engineers (USACE) consistent with the requirements of Nationwide Permit 27 will ensure compliance with Section 404 of the CWA. As proposed, this project would be consistent with the requirements of the Regional Water Board, the BLM's Redding RMP and the STNF LRMP; it would therefore not prevent attainment of this ACS objective.

5. *Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.*

A fundamental element of the TRRP is restoration of the sediment regime in a manner that enhances the alluvial character of the 40-mile reach of the Trinity River downstream of Lewiston Dam. The Dutch Creek project would ensure that the coarse sediment fraction of the sediment regime will be replenished on an ongoing basis, consistent with the timing, volume, and rates appropriate for the scaled-down channel. The inclusion of large wood and boulder clusters also increases the functional benefits of gravel augmentation. While there may be a change in the timing or volume of sediment input, overall the project is intended to assist BLM and the Forest Service in attainment of this ACS objective.

6. *Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.*

Alternative 1 will not influence any in-stream flows. No modifications to the flow regime of the Trinity River or its tributaries are proposed; therefore, this ACS objective would be met.

7. *Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.*

The activities to modify the bed, banks, and floodplains of the Trinity River within the project boundary are designed to maintain and/or restore the hydrologic connection between the river and adjacent wetland/riparian habitat. By reducing the floodplain elevations, the current flow regime could provide additional opportunities to establish functional, connected wetland habitat adjacent to the Trinity River. This project would be consistent with this ACS objective.

8. *Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.*

A fundamental objective of the TRRP is to restore the species composition and structural diversity of native plant communities that occur along the mainstem Trinity River. The modifications proposed to the active channel, floodplain, and upland activity areas within the boundaries of the Dutch Creek site will provide conditions that are receptive to the reintroduction of a diverse assemblage of native riparian vegetation and reduce the potential for non-native, invasive, and noxious plant species. Woody material of various size classes removed as part of the rehabilitation activities will be incorporated into the project as appropriate. Placement of large wood within and/or adjacent to constructed alluvial features will enhance channel complexity and edge habitat. Onsite mulching of vegetative debris will provide effective ground cover and increase successful revegetation efforts. Overall, this natural recruitment of riparian communities, supplemented by riparian planting efforts, will ensure that this project meets this ACS objective.

9. *Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.*

A fundamental objective of the TRRP is to restore the aquatic, riparian, and upland habitat along the 40-mile reach of the mainstem Trinity River. The project activities emphasize creation and/or rehabilitation of aquatic and riparian habitat within the boundaries of the Dutch Creek site. Collectively, these activities are intended to generate geomorphic responses downstream that will further the overall habitat enhancement objectives by reestablishing the alluvial processes that were impaired by the construction and operation of the Trinity River Division. The activities that are proposed on federal lands subject to the ACS are an integral part of the overall objective of the TRRP and are intended to assist BLM in attaining this ACS objective.

Conclusion

Based on this evaluation, BLM and the Forest Service finds that the project described in the NEPA decision document has been designed and would be constructed in a manner that does not prevent future attainment of the ACS objectives. The management actions incorporated into Alternative 1 will maintain the existing condition or lead to improved conditions in the long term, consistent with the intent of the ACS.

Table G-1. Riparian Reserves Applicable Standards and Guidelines

Resource	S&G #	Standard and Guideline
All Land Allocations		
Survey and Manage	2	Survey prior to ground disturbing activities. (Surveys not required as discussed in Appendix H.)
Riparian Reserves		
Timber Management	TM 1-c	Apply silvicultural practices for Riparian Reserves to control stocking, reestablish and manage stands, and acquired desired vegetation characteristics needed to attain ACS objectives.
Roads Management	RF-1	Federal, state, and county agencies should cooperate to achieve consistency in road design, operation, and maintenance necessary to attain Aquatic Conservation Strategy objectives.
	RF-2	For each existing or planned road, meet Aquatic Conservation Strategy objectives by:
	RF-2a	Minimizing road and landing locations in Riparian Reserves.
	RF-2b	Completing watershed analyses (including appropriate geotechnical analyses) prior to construction of new roads or landings in Riparian Reserves.
	RF-2c	Preparing road design criteria, elements, and standards that govern construction and reconstruction.
	RF-2d	Preparing operation and maintenance criteria that govern road operation, maintenance, and management.
	RF-2e	Minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow.
	RF-2f	Restricting sidecasting as necessary to prevent the introduction of sediment to streams.
	RF-3	Determine the influence of each road on the Aquatic Conservation Strategy objectives through watershed analysis. Meet Aquatic Conservation Strategy objectives by:
	RF-3a	Reconstructing roads and associated drainage features that pose a substantial risk.
	RF-3b	Prioritizing reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affected.
	RF-3c	Closing and stabilizing or obliterating and stabilizing roads based on the ongoing and potential effects to Aquatic Conservation Strategy objectives and considering short-term and long-term transportation needs.

Resource	S&G #	Standard and Guideline
	RF-4	New culverts, bridges and other stream crossings shall be constructed, and existing culverts, bridges and other stream crossings determined to pose a substantial risk to riparian conditions will be improved, to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resources affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.
	RF-5	Minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is unfeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes.
	RF-7	Develop and implement a Road Management Plan or a Transportation Management Plan that will meet the Aquatic Conservation Strategy objectives. As a minimum, this plan shall include provisions for the following activities:
	RF-7a	Inspections and maintenance during storm events.
	RF-7b	Inspections and maintenance after storm events.
	RF-7c	Road operation and maintenance, giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources.
	RF-7d	Traffic regulation during wet periods to prevent damage to riparian resources.
	RF-7e	Establish the purpose of each road by developing the Road Management Objective.
Recreation Management	RM-1	New recreational facilities within Riparian Reserves, including trails and dispersed sites, should be designed to not prevent meeting Aquatic Conservation Strategy objectives. Construction of these facilities should not prevent future attainment of these objectives. For existing recreation facilities within Riparian Reserves, evaluate and mitigate impact to ensure that these do not prevent, and to the extent practicable contribute to, attainment of Aquatic Conservation Strategy objectives.
	LH-3	Locate new support facilities outside Riparian Reserves. For existing support facilities inside Riparian Reserves that are essential to proper management, provide recommendations to FERC that ensure Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, provide recommendations to FERC that such support facilities should be relocated. Existing support facilities that must be located in the Riparian Reserves will be located, operated, and maintained with an emphasis to eliminate adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives.
	LH-4	For activities other than surface water developments, issue leases, permits, rights-of-way, and easements to avoid adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives. Adjust existing leases, permits, rights-of-way, and easements to eliminate adverse effects that retard or prevent the attainment of Aquatic Conservation Strategy objectives. If adjustments are not effective, eliminate the activity. Priority for modifying existing leases, permits, rights-of-way and easements will be based on the actual or potential impact and the ecological value of the riparian resources affected.

Resource	S&G #	Standard and Guideline
General Riparian Area Management	RA-2	Fell trees in Riparian Reserves when they pose a safety risk. Keep felled trees onsite when needed to meet coarse woody debris objectives.
	RA-3	Herbicides, insecticides, and other toxicants, and other chemicals shall be applied only in a manner that avoids impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives.

REFERENCES

Shasta-Trinity National Forest. 2005. Upper Trinity River Watershed Analysis. USDA Forest Service, Shasta-Trinity National Forest.

U.S. Bureau of Land Management. 1995. Mainstem Trinity River Watershed Analysis.

U.S. Bureau of Land Management. 1993. Redding Resource Management Plan and Record of Decision.

APPENDIX H

Compliance with Standards and Guidelines for Survey and Manage Species

APPENDIX H

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) Compliance with Standards and Guidelines for Survey and Manage Species

The Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) project is consistent with court orders relating to the Survey and Manage mitigation measure of the Northwest Forest Plan, as incorporated into BLM's 1993 Redding Resource Management Plan and the 1995 Shasta-Trinity National Forest LRMP.

On December 17, 2009, the U.S. District Court for the Western District of Washington issued an order in *Conservation Northwest, et al. v. Rey*, No. 08-1067 (W.D. Wash.) (Coughenour, J.), granting Plaintiffs' motion for partial summary judgment and finding a variety of NEPA violations in the BLM and USFS 2007 ROD eliminating the Survey and Manage mitigation measure. Judge Coughenour deferred issuing a remedy in his December 17, 2009, order until further proceedings and did not enjoin the BLM from proceeding with projects. Plaintiffs and Defendants entered into settlement negotiations that resulted in the 2011 Survey and Manage Settlement Agreement, adopted by the District Court on July 6, 2011.

The Ninth Circuit Court of Appeals issued an opinion on April 25, 2013, that reversed the District Court for the Western District of Washington's approval of the 2011 Survey and Manage Settlement Agreement. The case is now remanded back to the District Court for further proceedings. This means that the December 17, 2009, District Court order which found NEPA inadequacies in the 2007 analysis and records of decision removing Survey and Manage is still valid.

Previously, in 2006, the District Court (Judge Pechman) had invalidated the agencies' 2004 RODs eliminating Survey and Manage due to NEPA violations. Following the District Court's 2006 ruling, parties to the litigation had entered into a stipulation exempting certain categories of activities from the Survey and Manage standard (hereinafter "Pechman exemptions").

Judge Pechman's Order from October 11, 2006 directs: "Defendants shall not authorize, allow, or permit to continue any logging or other ground-disturbing activities on projects to which the 2004 ROD applied unless such activities are in compliance with the 2001 ROD (as the 2001 ROD was amended or modified as of March 21, 2004), except that this order will not apply to:

A. Thinning projects in stands younger than 80 years old;

B. Replacing culverts on roads that are in use and part of the road system, and removing culverts if the road is temporary or to be decommissioned;

C. Riparian and stream improvement projects where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the stream improvement work is the placement large wood, channel and floodplain reconstruction, or removal of channel diversions; and

D. The portions of project involving hazardous fuel treatments where prescribed fire is applied.

Any portion of a hazardous fuel treatment project involving commercial logging will remain subject to the survey and management requirements except for thinning of stands younger than 80 years old under subparagraph a. of this paragraph."

Following the District Court's December 17, 2009 ruling, the Pechman exemptions still remained in place. The BLM and Forest Service have reviewed the EA/IS for the Dutch Creek site in consideration of both the December 17, 2009 partial summary judgment and Judge Pechman's October 11, 2006 order. Because this site is the focus of a riparian and stream improvement project where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the stream improvement work is the placement large wood, channel and floodplain reconstruction, or removal of channel diversions, the BLM and the Forest Service have made the determination that this project meets Exemption C of the Pechman Exemptions (October 11, 2006 Order), and therefore may still proceed even if the District Court sets aside or otherwise enjoins use of the 2007 Survey and Manage ROD since the Pechman exemptions would remain valid in such case.

APPENDIX I

Shasta-Trinity National Forest Sensitive Species List

APPENDIX I

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) Shasta-Trinity National Forest and Bureau of Land Management Sensitive Species Lists

Table I-1. Shasta-Trinity National Forest and Bureau of Land Management (BLM) Sensitive Species List (6/30/2013; Updated 9/9/2013)

Scientific Name	Common Name	Assessment
BIRDS		
Accipiter gentilis	Northern goshawk (BLM)	Habitat for this species does not occur within the project area.
Coturnicops noveboracensis	Yellow rail	Habitat for this species occurs within the project area; environmental commitment EC-VW-3 would ensure that this species would be protected.
Empidonax traillii	Willow flycatcher	Habitat for this species occurs within the project area; environmental commitment EC-VW-6 would ensure that this species would be protected.
Haliaeetus leucocephalus	Bald eagle (BLM)	Habitat for this species occurs within 1/4 mile of the project area; environmental commitment EC-VW-7 would ensure that this species would be protected.
MAMMALS		
Antrozous pallidus	Pallid bat (BLM)	Habitat for this species could occur within the project area; environmental commitment EC-VW-8 would ensure that this species would be protected.
Corynorhinus townsendii	Townsend's big-eared bat (BLM)	Habitat for this species could occur within the project area; environmental commitment EC-VW-8 would ensure that this species would be protected.
Gulo gulo luscus	North American wolverine	Habitat for this species does not occur within the project area.
Martes caurina	Pacific marten (BLM)	Habitat for this species does not occur within the project area.
Pekania pennanti	Pacific fisher (BLM)	Transitory habitat for this species could occur within the project area.
Myotis thysanodes	Fringed myotis (BLM)	Habitat for this species could occur within the project area; environmental commitment EC-VW-8 would ensure that this species would be protected.

Scientific Name	Common Name	Assessment
AMPHIBIANS		
Hydromantes shastae	Shasta salamander	Habitat for this species does not occur within the project area.
Rana aurora aurora	Northern red-legged frog	Habitat for this species does not occur within the project area
Rana boylii	Foothill yellow-legged frog	Habitat for this species could occur within the project area; environmental commitment EC-VW-4 would ensure that this species would be protected.
Rana cascadae	Cascade frog	Habitat for this species does not occur within the project area.
Rhyacotriton variegatus	Southern torrent salamander	Habitat for this species does not occur within the project area.
REPTILES		
Emys marmorata	Western pond turtle	Habitat for this species could occur within the project area; environmental commitment EC-VW-5 would ensure that this species would be protected
INVERTEBRATES, TERRESTRIAL		
Bombus occidentalis	Western bumble bee	Habitat for this species does not occur within the project area.
Monadenia troglodytes troglodytes	Shasta sideband snail	Habitat for this species does not occur within the project area.
Monadenia troglodytes wintu	Wintu sideband snail	Habitat for this species does not occur within the project area.
Trilobopsis roperi	Shasta chaparral snail	Habitat for this species does not occur within the project area.
Trilobopsis tehamana	Tehama chaparral snail	Habitat for this species does not occur within the project area.
Vespericola pressleyi	Big Bar hesperian snail (BLM)	Habitat for this species does not occur within the project area.
Vespericola shasta	Shasta hesperian snail	Habitat for this species does not occur within the project area.
INVERTEBRATES, AQUATIC - MOLLUSKS		
Anodonta californiensis	California floater (freshwater mussel)	Surveys indicate that this species does not occur within the project area.
Fluminicola seminalis	Nugget pebblesnail	Habitat for this species does not occur within the project area.
Juga nigrina	Black juga (snail)	Habitat for this species does not occur within the project area.
Juga (*Calibasis*) *occata*	Scalloped juga (snail)	Habitat for this species does not occur within the project area.
Lanx patelloides	Kneecap lanx (limpet)	Habitat for this species does not occur within the project area.

Scientific Name	Common Name	Assessment
Pisidium (*Cyclocalyx*) *ultramontanum*	Montane peaclam	Habitat for this species does not occur within the project area.
FISHES		
Entosphenus tridentatus	Pacific lamprey	Habitat for this species occurs within the project area; the primary objective of the project is to enhance habitat for anadromous species, including Pacific lamprey.
Mylopharodon conocephalus	Hardhead	Habitat for this species does not occur within the project area.
Oncorhynchus mykiss	Steelhead - Klamath Mountains Province ESU	Habitat for this species occurs within the project area; the primary objective of the project is to enhance habitat for anadromous species, including steelhead.
Oncorhynchus mykiss pop 7	McCloud River redband trout	Habitat for this species does not occur within the project area.
Oncorhynchus tshawytscha	Upper Klamath-Trinity chinook ESU	Habitat for this species occurs within the project area; the primary objective of the project is to enhance habitat for anadromous species, including chinook salmon.

Note: Common names may not always meet official standards used by various scientific organizations but have been edited for document consistency. Only the first letter of the common name has been capitalized unless referring to a personal or geographic name.

DPS = Distinct Population Segment
ESU = Evolutionarily Significant Unit
SONCC = Southern Oregon/ Northern California Coast
BLM = Bureau of Land Management – Sensitive Species, Redding Field Office

Table I-2. Sensitive Plant Species

Common Name *Scientific Name*	Status[1]	General Habitat Description and Blooming Period	Habitat Suitability Assessment
Vascular plants/lichen/bryophytes			
McDonald's rockcress Arabis mcdonaldiana	FE/CE/1B.1	Lower montane coniferous forest, Upper montane coniferous forest. Elevation: 440-5905 feet. Bloom: May-Jul.	Not identified in floristic surveys
Konocti manzanita Arctostaphylos manzanita ssp. elegans	None/None/1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest. Elevation: 1295-5300 feet. Bloom: (Jan)Mar-May(Jul).	Not identified in floristic surveys
Shasta County arnica Arnica venosa	USFS_S/None/4.2	Cismontane woodland, Lower montane coniferous forest. Elevation: 1095-4890 feet. Bloom: May-Jul(Sep).	Not identified in floristic surveys
Indian Valley brodiaea Brodiaea rosea	None/CE/1B.1	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Valley and foothill grassland. Elevation: 1095-4755 feet. Bloom: May-Jun.	Not identified in floristic surveys

Common Name ***Scientific Name***	**Status[1]**	**General Habitat Description and Blooming Period**	**Habitat Suitability Assessment**
Bug-on-a-stick *Buxbaumia viridis*	USFS_S	Large diameter coarse woody debris in advanced decay stage and inserted directly in perennially wet seeps or streams; riparian habitat in conifer forest. Any elevation below subalpine.	Occurrence nearby
flagella-like atractylocarpus *Campylopodiella stenocarpa*	None/None/2B.2	Cismontane woodland. Elevation: 325-1640 feet.	Occurrence nearby
bristle-stalked sedge *Carex leptalea*	None/None/2B.2	Bogs and fens, Meadows and seeps (mesic), Marshes and swamps. Elevation: 0-2295 feet. Bloom: Mar-Jul.	Not identified in floristic surveys
holly-leaved ceanothus *Ceanothus purpureus*	None/None/1B.2	Chaparral, Cismontane woodland. Elevation: 390-2100 feet. Bloom: Feb-Jun.	Not identified in floristic surveys
northern clarkia *Clarkia borealis* ssp. *Borealis*	USFS_S/None/1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest. Elevation: 1310-5135 feet. Bloom: Jun-Sep.	Not identified in floristic surveys
clustered lady's-slipper *Cypripedium fasciculatum*	BLMS_USFS_S/ None/4.2	Lower montane coniferous forest, North Coast coniferous forest. Elevation: 325-7990 feet. Bloom: Mar-Aug.	Not identified in floristic surveys
mountain lady's-slipper *Cypripedium montanum*	BLMS_USFS_S/ None/4.2	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest. Elevation: 605-7300 feet. Bloom: Mar-Aug.	Not identified in floristic surveys
Oregon fireweed *Epilobium oreganum*	USFS_S/None/1B.2	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest. Elevation: 1640-7350 feet. Bloom: Jun-Sep.	Not identified in floristic surveys
Tracy's eriastrum *Eriastrum tracyi*	USFS_S/CR/3.2	Chaparral, Cismontane woodland, Valley and foothill grassland. Elevation: 1030-5840 feet. Bloom: May-Jul.	Not identified in floristic surveys
pink-margined monkeyflower *Erythranthe trinitiensis*	None/None/1B.3	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest. Elevation: 1310-7495 feet. Bloom: Jun-Jul(Aug).	Not identified in floristic surveys
California globe mallow *Iliamna latibracteata*	None/None/1B.2	Chaparral (montane), Lower montane coniferous forest, North Coast coniferous forest (mesic), Riparian scrub (streambanks). Elevation: 195-6560 feet. Bloom: Jun-Aug.	Not identified in floristic surveys
Dudley's rush *Juncus dudleyi*	None/None/2B.3	Lower montane coniferous forest (mesic). Elevation: 1490-6560 feet. Bloom: Jul-Aug.	Occurrence nearby
Heckner's lewisia *Lewisia cotyledon* var. *heckneri*	None/None/1B.2	Lower montane coniferous forest (rocky).Elevation: 735-6890 feet. Bloom: May-Jul.	Occurrence nearby

Common Name ***Scientific Name***	**Status[1]**	**General Habitat Description and Blooming Period**	**Habitat Suitability Assessment**
Copper moss *Mielichhoferia elongata*	USFS_S	Seasonally moist seeps in rock outcrops containing copper or heavy metals. Roadcuts. Below 3600 feet.	Not identified in floristic surveys
Wolf's evening-primrose *Oenothera wolfii*	None/None/1B.1	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest. Elevation: 5-2625 feet. Bloom: May-Oct.	Not identified in floristic surveys
white-flowered rein orchid *Piperia candida*	None/None/1B.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest. Elevation: 95-4300 feet. Bloom: (Mar)May-Sep.	Not identified in floristic surveys
white beaked-rush *Rhynchospora alba*	None/None/2B.2	Bogs and fens, Meadows and seeps, Marshes and swamps (freshwater). Elevation: 195-6695 feet. Bloom: Jun-Aug.	Not identified in floristic surveys
brownish beaked-rush *Rhynchospora capitellata*	None/None/2B.2	Lower montane coniferous forest, Meadows and seeps, Marshes and swamps, Upper montane coniferous forest. Elevation: 145-6560 feet. Bloom: Jul-Aug.	Not identified in floristic surveys
Canyon Creek stonecrop *Sedum obtusatum* ssp. *paradisum*	USFS_S/None/1B.3	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, Subalpine coniferous forest. Elevation: 980-6235 feet. Bloom: May-Jun.	Occurrence nearby
coast checkerbloom *Sidalcea oregana* ssp. *eximia*	None/None/1B.2	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest. Elevation: 15-4395 feet. Bloom: Jun-Aug.	Not identified in floristic surveys
Klamath Mtns catchfly *Silene salmonacea*	USFS_S/None/1B.2	Serpentine or iron-rich soils in natural or early-seral gaps in mid to late-seral mixed conifer or mixed conifer-oak forest, including road cuts. 2500-3800 feet. Klamath Ranges in n. Trinity County. Bloom: June	Not identified in floristic surveys
Trinity River jewelflower *Streptanthus oblanceolatus*	USFS_S/None/1B.2	Cismontane woodland. Elevation: 65-1380 feet. Bloom: Apr-Jun.	Not identified in floristic surveys
beaked tracyina *Tracyina rostrata*	None/None/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland. Elevation: 295-2590 feet. Bloom: May-Jun.	Not identified in floristic surveys
Fungi			
red-pored bolete *Boletus pulcherrimus*	USFS_S	Perennially moist, mature or late-seral fir forest that includes tanoak. Elevations that support general habitat.	Potential
branched collybia *Dendrocollybia racemosa*	USFS_S	Nutrient rich leaf mulch or decaying fungi in moist, mid-mature to late-seral conifer forest; Elevations that support general habitat.	Potential

Common Name ***Scientific Name***	**Status[1]**	**General Habitat Description and Blooming Period**	**Habitat Suitability Assessment**
olive phaeocollybia *Phaeocollybia olivacea*	USFS_S	Moist, mixed conifer forest containing oak or tanoak. Elevations that support general habitat.	Potential

Note: This table includes special status CNPS records (by habitat and elevation), USFS Sensitive species with potential to occur, and CNDDB query results if the species has habitat.

[1]Status Codes: FE = Federally listed as endangered; CE = California listed as endangered; CR = California Rare; USFS_S = U.S. Forest Service Sensitive; BLMS = Bureau of Land Management Sensitive

CRPR Codes and Extensions:

1B = Plants rare, threatened, or endangered in California and elsewhere
2B = Plants rare, threatened, or endangered in California but more common elsewhere
3 = Plants about which more information is needed
4 = Plants of limited distribution
xx.1 Seriously threatened in California
xx.2 Moderately threatened in California
xx.3 Not very threatened in California

APPENDIX J

Wild and Scenic River, Section 7 Analysis and Determination

APPENDIX J

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) Wild and Scenic River, Section 7 Analysis

INTRODUCTION

Section 7(a) of the Wild and Scenic Rivers Act (WSRA) requires the river-administering agency to evaluate the effects of a federally assisted water resources project proposed within a Wild and Scenic River (WSR) corridor on the river's free-flowing condition, water quality, and outstandingly remarkable values (ORVs). The following analysis is a summary of the impacts of the Dutch Creek Channel Rehabilitation Project ("Project") on the Trinity River about 5 miles south of Junction City, California,-- a project designed to benefit anadromous fish. The U.S. Forest Service (Forest Service) and the Bureau of Land Management (BLM) have the responsibility to determine whether the proposed Project would have a direct and adverse effect on the river's free-flowing condition, water quality, and ORVs.

The Project is being implemented by the U.S. Department of the Interior, Bureau of Reclamation, Trinity River Restoration Program (TRRP).

The Trinity River was designated as a National WSR in 1981 under the Federal WSRA. In addition to the mainstem Trinity River from the confluence with the Klamath River to 100 yards below Lewiston Dam, three other sections of the river were designated: the North Fork from the Trinity River confluence to the southern boundary of the Trinity Alps Wilderness Area, the South Fork from the Trinity River confluence to the California State Highway 36 bridge crossing, and the New River from the Trinity River confluence to the Trinity Alps Wilderness Area.

These sections of the Trinity River were designated to preserve the river's free-flowing condition, water quality, and the ORVs identified on the date of designation. The ORVs include the anadromous and resident fisheries, outstanding geologic resource values, scenic values, recreational values, cultural and historic values. The ORV that is specific to the section of the Trinity River that encompasses the Project is its anadromous fishery. Under an interagency agreement between the National Park Service, BLM, and the Forest Service, the BLM generally has the responsibility for conducting WSRA Section 7(a) determinations for the mainstem Trinity River from Lewiston Dam to the confluence with the North Fork Trinity River. For actions that occur on national forest system (NFS) lands, a separate determination must also be made by the Forest Service. After the designation, BLM, in consultation with the Forest Service, classified the mainstem Trinity River as a Recreational River from 100 yards below Lewiston Dam downstream to Cedar Flat (between Big Bar and Burnt Ranch, California).

DEFINITION OF THE ACTIVITY

Project Proponent

U.S. Bureau of Reclamation, TRRP

Purpose and Need for the Project

The overarching purpose of the TRRP is to restore fish populations to pre-dam levels and restore dependent fisheries, including those held in trust by the federal government for the Hoopa Valley Tribe and the Yurok Tribe. The fundamental purpose of the Project is to enhance the fishery and the functioning condition of the Trinity River in the general vicinity of the Project site by implementing the rehabilitation activities described under Alternative 1, and illustrated on Figure 2 in Chapter 2, of the Dutch Creek Channel Rehabilitation Project EA/IS. Specifically, this alternative would re-create complex salmon and steelhead habitat; enhance natural river processes for the benefit of aquatic, riparian and terrestrial species; and provide conditions suitable for reestablishing native riparian and upland vegetation. This Project was one of the original 44 areas listed in the 2000 DOI ROD to restore the fish resources of the Trinity River. It is intended to enhance

channel complexity and juvenile salmonid refugia habitat (e.g., shallow slow areas in proximity to cover) that have emerged as important rehabilitation components based on the TRRP's ongoing monitoring efforts.

Alternative 1 was developed through a cooperative effort by TRRP organizations (e.g., Forest Service, Yurok and Hoopa Valley tribes, as well as the BLM). It is intended to improve the conveyance of flows by reestablishing the alluvial attributes of the Trinity River, namely floodplains and side channels, while decreasing the potential for channel constriction by modifying floodplain widths and elevations.

Geographic Location of the Project

The Project site is located about 5 miles south (upstream) of Junction City, California. It is in Township 33 North, Range 10 West, Sections 29 and 32, Mount Diablo Base and Meridian. The river elevation at the site is approximately 1,520 feet above mean sea level. Figure 1-1 in the EA/IS illustrates the Project area in the context of Trinity County and the State of California. The Project area encompasses both federal and private lands. As shown on Figure 2-1 of the EA/IS, about 32 acres (21 percent) are managed by BLM and approximately 48 acres (30 percent) are managed by the Forest Service. Portions of nine private parcels encompass approximately 75 acres (49 percent) in the northern portion of the Project area on river right. Some of the private parcels consist of large-lot rural residential uses surrounded by open space on adjacent private parcels as well as BLM and NFS lands.

Duration of the Activities

In general, in-river construction and activities other than revegetation would occur on river right between July 15 and September 15, 2020. On the left bank, work (e.g., staging site preparation) may occur beginning in winter 2019 and continuing through 2020. Revegetation activities would occur primarily in the wet months following construction. Excavation, processing of excavated material, and placement of excess material in upland areas would occur during the in-river construction window under base flow conditions. Floodplain excavation would occur in summer. The Project is proposed for implementation in summer 2020, but revegetation efforts would not occur until after construction is completed, likely beginning in fall 2020 and continuing through spring 2021. After site construction, maintenance activities including efforts to maintain/enhance vegetation or riverine habitat diversity may be conducted. as needed, within authorized public land use areas in accordance with the general environmental commitments listed in Appendix E of the EA/IS. For example, structured log jams may be replaced or enhanced within the areas designated for SLJs in the EA.

Magnitude and Extent of the Activities

The magnitude and extent of the activities associated with the Project are summarized below. The Description of Alternatives and Appendix D of the EA/IS provide an in-depth description of the design objectives and each activity area. With the exception of recontouring and vegetation removal, each activity type and area has been assigned a unique alphabetic and numeric identification and descriptive label that corresponds to the type and location of activity area illustrated on Figure 2-1 of the EA/IS.

Recontouring and Vegetation Removal

Under the recontouring and vegetation removal activities, the ground surface would be modified to reduce riparian encroachment and the risk of stranding juvenile salmonids. To varying degrees, vegetation would be cleared and removed at all activity areas that would be subject to rehabilitation activities, with the exception of crossings. Where recontouring (e.g., floodplain lowering) would occur, the activity areas would be subject to vegetation removal. Where possible, riparian vegetation (e.g., willow poles) would be salvaged for use in onsite revegetation efforts. Unlike the other activities, these activities are not shown on Figure 2-1 of the EA/IS because they overlap with most of the other activity areas.

Grading would be required to construct or enhance topographic features that could develop into functional riparian habitat; excavation and the placement of fill would be balanced. Activities would be accomplished using a variety of methods, including using hand tools and heavy equipment such as excavators, bulldozers, dump trucks, and, potentially, scrapers. Where feasible, existing riparian vegetation would be maintained to facilitate future recruitment. In addition to the activity areas that would be cleared prior to grading, site-

specific removal of trees (e.g., conifers and hardwoods) would be required to enhance the safety of the work site, reduce fuel loading, and improve local conditions for individual tree growth and wildlife; the trees that are removed would be used in onsite wood placement. As illustrated on Figure 2-1 of the EA/IS, upland and contractor use areas (e.g., U-2a, C-2) include discrete locations where retention of existing vegetation would occur to screen upland and staging activities in order to lessen the degree of visual impacts. Removal of vegetation on NFS lands would occur as authorized by the Forest Service.

Riverine Construction (R) – Lowered Floodplain

At two locations (R-1, R-2), inundated surfaces (i.e., floodplains) would be constructed to inundate and function at flows ranging from 350 to more than 6,000 cubic feet per second (cfs). Construction of these surfaces would also enhance the type and degree of connection to the mainstem at various flows as portions of the existing mainstem channel would maintain water and aquatic habitat during all flows. These activities are intended to expand the surface area of the channel that could be inundated by reoccurring flows below the ordinary high-water mark (i.e., 6,000 cfs). Vegetation would be cleared as necessary, and earth would be excavated to meet design elevations for periodic inundation. Either of these areas (R-1 or R-2) or adjoining contractor use areas may also be used for processing alluvial material that will be used in construction (e.g., cobbles for ballast and fish rock) of in-channel and riverine activity areas. See Table 2-1 in the EA/IS for more details on these features.

Newly inundated surfaces would provide important rearing and slow-water habitat for juvenile salmonids and other native anadromous fish and wildlife. They would also increase the likelihood of channel migration that would result in enhanced sinuosity, thereby providing the habitat variability that was historically present and is required to support rapid growth of native fishes.

These treatment areas would rely on a combination of natural recruitment of native riparian vegetation and riparian planting to establish a more diverse assemblage of native vegetation. Revegetation efforts would be consistent with requirements and commitments outlined in the TRRP's Draft Riparian Mitigation and Monitoring Plan. This plan requires supplemental efforts (e.g., in-planting, weed control, irrigation) as necessary to establish riparian vegetation to meet the standard of no net loss in riparian vegetation from pre-Project levels.

In-Channel Construction (IC)

In-channel construction (IC) of a meander channel complex (bars, pools, riffles, and side channel) would result in a new bend in the river under base flow conditions (e.g., 450 cfs). The meander channel complex would consist of 10 discrete activity areas that would increase channel length, complexity, and sinuosity and reduce channel gradient. Collectively, the construction of these activity areas would provide a diversity of water depths and velocities across a wider range of flows than the existing mainstem channel configuration.

The construction of various types and sizes of grade control structures, including construction or excavation of alluvial features and use of large wood as part of Structured Log Jams (SLJs), would increase channel complexity through promotion of channel migration, increased sinuosity, and reduced fine sediment storage.

During construction of this meander complex, earthen berms and turbidity curtains would isolate constructed features to ensure that water quality standards are met. The berms would be removed at the end of construction if the water within these contained areas is of appropriate quality for discharge to the river or they may be left in place for removal by subsequent high flows. Alternatively, water in the constructed features may be pumped to uplands or slowly metered into the mainstem river after construction. These techniques would ultimately reduce the amount of turbid water that would reach the Trinity River and would ensure that water quality permit requirements are met, and the Project is consistent with Aquatic Conservation Strategy objectives established by the Northwest Forest Plan.[1]

[1] USDA, USDI. 1994c. Standards and guidelines for management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl: Attachment A to the Record of

Upland (U)
Excavated materials (e.g., dredge tailings, alluvium) that would not be used for instream construction would be placed in upland environments as fill on terraces formerly subjected to a variety of placer mining activities. Two activity areas would be used on river right; U-2a is on BLM land and U-2b is on NFS lands. There are no upland fill areas on river left. River-right activity areas have been located to ensure that their placement would not increase the elevation of the 100-year flood, consistent with requirements of Trinity County's Floodplain Ordinance. If material from other activity areas is needed for instream construction, it may be excavated from authorized activity areas, processed within these activity areas, and placed in accordance with the design specifications described in detail in Appendix D of the EA/IS.

BASELINE CONDITIONS

Free Flowing Condition
A variety of natural and management disturbance mechanisms have occurred at the site over the past 175 years. The channelization of the Trinity River associated with historic dredge activities was exacerbated by modifications to the flow regime of the Trinity River downstream of Lewiston Dam beginning in 1964, when the Trinity River Division (TRD) of the Central Valley Project (CVP) became fully operational. In 1981 when the Trinity River was designated as a Wild and Scenic River, the riparian berms had been developing for more than 15 years and were channelizing the river in several locations. Scientists have recognized that the alluvial nature of the river had been modified extensively due to changes in the flow regime and sediment flux.

Although changes in the flow regime since 2006 have provided some opportunity to modify the form and function of the river, the Record of Decision (ROD) for the Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Environmental Impact Report (Department of Interior, 2000) required establishment of the TRRP and stipulated that mechanical channel rehabilitation, including management of sediment input (reduction in fine sediments (sand) and augmentation of coarse sediment (gravel)), would be required to reconfigure sections of the river and provide opportunities for alluvial processes to become reestablished, albeit at a smaller scale than had occurred prior to the construction and operation of TRD facilities (e.g., Lewiston Dam) in 1964.

Water Quality
Water quality downstream of Lewiston Dam is notably high quality and Trinity River water is sometimes used to dilute waters of the Klamath during low water conditions in late summer. Water releases from the TRD influence flow volumes and velocities, water quality, and channel geometry downstream of Lewiston Dam. These influences are particularly important to water quality parameters such as temperature, turbidity, and suspended sediments. Water Quality in the Trinity Basin supports municipal and domestic water supply and beneficial uses primarily associated with sustaining high-quality fish habitat (cold-water spawning and rearing habitat) and recreational pursuits (swimming and boating). These benefits are protected by both numeric and narrative water quality objectives defined in the Water Quality Control Plan for the North Coast Region (Basin Plan 2011)

In 1992, the Environmental Protection Agency (EPA) added the Trinity River to its list of impaired rivers under the provisions of Section 303(d) of the Clean Water Act (CWA) in response to a determination by the State of California that the water quality standards for the river were not being met due to excessive sediment. In 2001, the EPA established a Total Maximum Daily Load (TMDL) for sediment in the river. The Regional Water Board has continued to identify the Trinity River as impaired in subsequent listing cycles. The primary adverse impacts associated with excessive sediment in the Trinity River pertain to degradation of habitat for anadromous salmonids. The restriction of streamflow downstream of the TRD has greatly contributed to the impairment of the Trinity River below Lewiston Dam (EPA 2001). Since 2006,

Decision for Amendments to Forest Service and Bureau of Land Management planning documents within range of the northern spotted owl. p. B-11.

TRRP recommended spring flow releases for fisheries have begun to scour sediment downstream of the TRD and have reduced excess sediment measured in the substrate in areas near Lewiston Dam.

Due to the location of the site, the effects of the TRD are less than those documented in TRRP monitoring efforts upstream of Douglas City at about RM 92.6. Data from on-going sediment transport monitoring suggest that below Douglas City, additional streamflow and sediment contributions from Indian, Weaver, and Reading creeks significantly reduce the coarse sediment and streamflow deficits. Below Douglas City, dam releases and natural runoff events are generally capable of transporting sediment influxes.

Water temperature is one of the most important variables affecting salmonids and other aquatic organisms (Carter 2005). It influences feeding rates and growth, metabolism, development, timing of migration, spawning and rearing, and the availability of food. Since the construction of the TRD, discharge from Lewiston Dam has played an important role in regulating water temperatures in the Trinity River downstream. Depending on the type of water year and time of year, this effect diminishes to varying degrees with distance from Lewiston Dam.

A key objective of the TRRP's flow management is to improve the thermal regimes for all anadromous salmonid life stages that use the Trinity River. The TRRP has been using flow management practices to meet specific temperature management targets, and temperature monitoring data have been collected as part of the Adaptive Environmental Assessment and Management process since 2002. The project area is located between two water temperature monitoring sites, Douglas City and Junction City above Canyon Creek.

Water temperatures in the Trinity River through the project area are primarily influenced by flows, topography, and aspect. Flows in this reach typically exceed the temperature targets for short periods of time in the fall (Magneson and Chamberlain 2015). Presently, river temperature requirements maintain the health of adult spawners. During spring rearing periods, when juvenile salmon and steelhead grow prior to their seaward migration, temperature is often cooler than optimal growth conditions. The extensive mining activities and lack of fertile soil on the right side of the river limit the establishment of riparian forests. On the left bank of the river, mature upland forest occurs in isolated stands downslope from steep bedrock slopes. Project activities will plant the flood-plain and amend river-right soils to enhance localized conditions for riparian vegetation so that needed diverse water temperatures may be more available in the reach.

The Trinity River is typically very clear. Oil, gas, and chemical pollutants are generally not measurable in the Trinity River and its flow is often withdrawn to provide drinking water. Natural background turbidity levels range from 0 to 1 NTU during low-flow conditions (300 to 450 cfs). On May 20, 2015, the Regional Water Board issued a General Water Quality Certification (Order R1-2015-0028) to the TRRP under the auspices of Reclamation. This order implements portions of the Trinity River TMDL and provides an allowable zone of turbidity dilution (protective of sensitive aquatic life), within which turbidity levels shall not exceed 20 NTUs or 20 percent above naturally occurring background levels, whichever is greater. During in-river construction activities, the TRRP will monitor turbidity levels within 50 feet upstream of project activities (i.e., to serve as the natural background level) and 500 feet downstream of the in-river construction activities (point of compliance) that could increase turbidity. If naturally occurring background levels are greater than 20 NTUs, turbidity levels at the point of compliance shall not exceed 20 percent above the naturally occurring background level.

Outstandingly Remarkable Values (Anadromous Fish Populations and Habitat)

The outstandingly remarkable value identified for this segment of the Trinity Wild and Scenic River is the anadromous fishery. Specifically, the Trinity River supports the Southern Oregon/North California Coast (SONCC) Coho salmon evolutionarily significant unit (ESU), which was federally listed as threatened under the Endangered Species Act (ESA) in 1997. The Trinity River also supports Klamath Mountain Province steelhead trout, Upper Klamath/Trinity River (UKTR) fall-run Chinook salmon, a remnant population of UKTR spring-run Chinook salmon, and Pacific lamprey.

All anadromous salmonid species begin their life in fresh water, migrate to the ocean to rear and mature, and return to spawn in fresh water. Although the three Trinity River native species have generally similar life histories, they differ in the time of year they migrate and spawn, as well as when egg incubation typically occurs.

Adequate flows, water temperatures, water depths, and velocities; appropriate spawning and rearing substrates (e.g., riverbed gravels); and availability of instream cover and food are critical for the production of all anadromous salmonids. Spring-run Chinook salmon and summer-run steelhead also need long-term adult holding habitat for which pool size and depth, temperature, cover, and proximity to spawning gravel are important requirements. Newly emerged fry and juveniles of all species require rearing habitat with low velocities, open cobble substrate, and cool water temperatures. The emigration of smolts to the ocean and the immigration of spawning adults require adequately timed flows with the appropriate temperature, depth, and velocity.

The life histories and fresh water habitat requirements of these species and their distinct spawning populations are described in Appendix G of the Master EIR (2009 Regional Water Board and Reclamation; http://www.trrp.net/library/document/?id=476).

The TRRP has prioritized enhancing Trinity River juvenile salmonid rearing conditions through our management actions. Juvenile habitat availability and quality were determined to be the limiting factors for salmonid production during early Trinity River habitat evaluations (USFWS and HVT 1999). Current native river salmonid populations are dramatically reduced from historic abundance and the TRRP is charged with restoring populations to pre-dam levels. Fall-run Chinook salmon are the primary target for tribal harvest, commonly taken by sport fishermen, and arguably the species that would benefit most from implementation of TRRP management actions. Consequently, chinook salmon numbers are targeted for juvenile population assessments.

Since full implementation of the TRRP began in 2005 there has been a positive trend in the number of outmigrating naturally produced juvenile chinook salmon (11 September 2019 Trinity Management Council (TMC; The TRRP's governing body, presentation in Weitchpec, CA). Increases in Trinity River spring water release volumes, coupled with enhancement of channel habitat (like proposed in this project), are believed to have increased rearing habitat that has supported this trend. In general, outmigrating naturally produced juvenile chinook numbers have increased from approximately 1 million in the early 1990s to just under 4 million per year currently measured at the Willow Creek rotary screw traps (11 September 2019 TMC presentation in Weitchpec, CA).

Baseline numbers of adult salmon returning to the river are more problematic to interpret than juvenile data as many factors outside of river restoration may impact fisheries escapement to the river. Though habitat restoration in the river may be improving conditions, fishery harvest (ocean and in-river) and poor ocean conditions (e.g., high temperatures or low food abundance) may drastically reduce the number of adults that return to natural spawning grounds and the Trinity hatchery. In general, salmon and steelhead population estimates are cyclical over time, however, general trends may be evident. Since TRRP efforts began, the proportion of spring and fall-run spawners returning to natural spawning areas has generally increased but overall numbers have diminished since peak escapement in 1987. Coho salmon numbers have also decreased since the mid-1980s and the proportion of hatchery spawners has increased. Steelhead escapement, however, has increased since the mid-1980s and this is considered the current strongest population of salmonids on the Trinity River. Current Trinity River basin adult escapement goals set by the TRRP for natural-origin adults are 6,000 spring Chinook, 62,000 fall Chinook, 1,400 Coho and 40,000 steelhead.

The flowing paragraphs summarize current adult run sizes as reported in the *Trinity River Basin Salmon and Steelhead Monitoring Project: Chinook and Coho Salmon and Fall-run Steelhead run-size estimates using mark-Recapture methods 2017-2018 Season* (CDFW 2018; http://www.trrp.net/library/document/?id=2409).

Spring-run Chinook salmon 2018 status summary:
Spawning escapement above the Junction City Weir (JCW) was an estimated 4,320 fish, including the 1,380 spring-run Chinook that entered TRH and 2,940 estimated natural area spawners. The escapement of 1,454 natural-origin adult spring-run Chinook was 24.2% of the TRRP goal of 6,000. The 2017 run-size estimate is approximately 27.5% of the 38-year average of 16,088. Estimated spring Chinook run-size has ranged from 2,381 fish in 1991 to 62,692 fish in 1988.

Fall-run Chinook salmon 2018 status summary:
An estimated 15,450 fall-run Chinook migrated upstream of the Willow Creek Weir (WCW) in 2017. The run-size of 5,837 jacks (precocious fish) and 9,613 adult fall Chinook adults was comprised of an estimated 4,961 natural origin adults, 3,096 natural-origin jacks, 4,652 hatchery-origin adults and 2,741 hatchery-origin jacks. There was no harvest reported (there was no legal harvest of fall Chinook in 2017) so the total escapement is the same as the estimated run-size. Escapement of 4,475 natural-origin adult fall Chinook is 8.0% of the 62,000 fish TRRP goal

Coho salmon 2018 status summary:
An estimated run-size of 655 Coho comprised of 244 jacks and 411 adults, migrated into the Trinity River basin upstream of the Willow Creek Weir (WCW) in 2017. A count of 420 entered the Trinity River Hatchery (TRH) and 235 were natural area spawners. The 2017 Coho escapement was comprised of an estimated 57 adult and 9 jack natural-origin Coho, in addition to 354 hatchery-origin adults and 236 hatchery origin jacks. Escapement of 57 natural-origin Coho adults was 4.1% the TRRP goal of 1,400 fish. Estimated Coho run-size, upstream of WCW, has ranged from 655 fish in 2017 to 59,079 fish in 1987. This year's run-size of 655 is ranked 41st of the 41 years on record and is 4.1% of the 15,978 fish average:

Fall steelhead 2018 status summary:
An estimated 6,846 adult fall steelhead migrated upstream of WCW in 2017. Of those, 253 were estimated to have been harvested by anglers. Of the estimated 6,593 fish that escaped the fishery, 2,049 (53 natural-origin and 1,996 hatchery-origin) entered TRH, and 4,544 (2,295 natural-origin, and 2,249 hatchery-origin) escaped to natural spawning areas. In the 34 years for which CDFW has data (since 1980), run-size estimates have ranged from 2,972 in 1998 to 53,885 in 2007. Mean estimated run-size for fall adult steelhead in the Trinity River above WCW across the period of record is 14,470 fish. This year's run was 47.3% of the average. The natural-origin spawner escapement above WCW of 2,348 is 5.9% of the TRRP goal of 40,000 natural-origin steelhead.

WSR ACT SECTION 7(A) EVALUATION STANDARD AND EVALUATION CRITERIA

Evaluation Standard

The Project will be evaluated to determine if the proposed activities will result in any "direct and adverse" effects to the rivers values (free flow, water quality, and ORVs). Under Forest Service Manual (FSM) 2354.74a, the Regional Forester has the responsibility to make determinations for water resources projects on designated WSRs where other federal assistance is involved. This responsibility may not be delegated. The Redding Field Manager will approve the determination for the BLM.

Evaluation Criteria

The following specific criteria were used to evaluate for direct and adverse effects to the free flow, water quality and outstandingly remarkable values.

Free Flow

- Alteration of within-channel conditions
    - Active channel location
    - Channel geometry
    - Channel slope
    - Channel form
- Alteration of riparian and/or floodplain conditions including:

    - Vegetation Composition, Age Structure, Quantity, or Vigor
    - Relevant soil properties such as compaction or percent bare ground
    - Relevant floodplain properties such as width roughness, bank stability or susceptibility to erosion.
- Alteration of upland conditions including:
    - Vegetation Composition, Age Structure, Quantity, or Vigor
    - Relevant soil properties such as compaction or percent bare ground
    - Relevant floodplain properties such as width roughness, bank stability or susceptibility to erosion.
    - Relevant hydrologic properties such as drainage patterns, or the character of the surface and subsurface flows.
- Alteration of hydrological processes including:
    - The ability of the channel to change course, reoccupy former segments, or inundate its floodplain.
    - Streambank erosion potential, sediment routing and depositions, or debris loading.
    - The amount or timing of flow in the channel
    - Existing flow patterns
    - Surface and subsurface flow characteristics.
    - Flood storage (detention storage).
    - Aggradation or degradation of the channel.
- Magnitude and extent of off-site changes including:
    - Changes that influence other parts of the river system including:
        - Range of circumstance under which off-site changes might occur
        - Likelihood that predicted changes will be realized
        - Processes involved, such as water and sediment, and the movement of nutrients.

Water Quality

- Temperature
- Turbidity
- Pollutants (i.e. oil and grease)
- Sediment

Outstandingly Remarkable Values

The evaluation criteria for the anadromous fisheries ORV are:

- Water temperature
- Water quality (physical, biological, chemical)
- Aquatic habitat
    - Geomorphic condition
    - Substrate quality
    - Nutrient cycling
    - Condition of aquatic invertebrate, amphibian and mollusk habitat
    - Species composition and diversity
- Fish species population conditions, specifically:
    - Anadromous salmonid fish species
    - Resident fish species
    - Species traditionally used by, and culturally important to, Native Americans
    -

This Section 7(a) evaluation addresses the potential of the Project to have a direct and adverse impact on the anadromous fishery ORV and other values identified by the WSRA. Chapters 2, 3, and 4 of the environmental assessment/initial study (EA/IS) prepared for the Project provide additional information and analysis on the WSR, water quality, fisheries, wildlife, flora and fauna, recreational, and aesthetic values.

ANALYSIS OF EFFECTS TO FREE FLOW

HOW THE ACTIVITY WILL DIRECTLY ALTER WITHIN-CHANNEL CONDITIONS

Position of the Activity Relative to the Streambed and Streambanks

Consistent with the purpose and need described in section 1b above, the TRRP is mandated to reestablish the form and function of the Trinity River in a manner that reestablishes the fishery to pre-dam conditions. As discussed in sections 2.1.2 and 2.1.3, the Project will occur within and adjacent to the bed and banks of the Trinity River in order to improve the functions and values of the river with respect to the fisheries ORV, while ensuring protection of water quality. The Project activities described in the previous section would change the form and function of the river within and, to varying degrees, downstream of the Project area by expanding floodplain habitat, increasing channel complexity, and reestablishing self-sustaining riparian vegetation.

Any Likely Resulting Changes In:

Active Channel Location
The active channel of the Trinity River within the Project area is subject to extreme changes in flow throughout the water year, in part due to the TRRP flow release schedule that is implemented on an annual basis based on water year type. Base flows may be as low as 300 cfs in the fall and often exceed 6,000 cfs in the winter and spring; during wet years, TRRP releases may be as high as 11,000 cfs through this section of the Trinity River. Reducing the elevation of the active floodplain and incorporating alluvial features (e.g., riffles, point bars) within the active channel will provide opportunities for both short- and long-term changes in channel morphology (width, depth, and gradient), therefore increasing the amount and quality of habitat for all life stages of anadromous salmonids. The physical modifications of the Project would improve the free-flowing conditions at this site by allowing the river to more frequently inundate and move with its natural floodplain.

Channel Geometry
As described in the previous section, the fundamental objective of the Project is to implement activities intended to change the channel geometry in the short term and provide for opportunities for continued adjustment to the channel over time in response to ongoing changes in sediment and flow regimes associated with both natural and anthropogenic processes), therefore increasing the amount and quality of habitat for all life stages of anadromous salmonids.

Channel Slope
As described in Sections 2.1.2 and 2.1.3, the construction of a meander complex will result in a change in channel slope at a number of locations within the Project area in order to increase functional habitat for anadromous salmonids, the single ORV on the Trinity River. In some instances, the channel slope will increase to ensure that deposition of sediment does not impact pool habitat. In other cases, decreases in channel slope will enable the river to reestablish alluvial features (e.g., riffles, point bars) necessary for spawning and rearing habitat.

Channel Form
The various riverine and in-channel activities, including the incorporation of structured log jams, are expected to increase the hydraulic complexity of the flow pattern and sediment flux over a wide array of flows (350 cfs to 11,000 cfs). This habitat complexity is expected to maintain itself via enhanced flow processes and habitat that the Project creates. Inundated floodplains and functional side channels will add to this complexity as well as provide opportunities to reestablish functional riparian vegetation.

Navigation of the River
The Trinity River provides year-round recreational opportunities, including boating, kayaking, canoeing, rafting, inner tubing, fishing, swimming, camping, gold panning, wildlife viewing, picnicking, hiking, and

sightseeing. Fishing for Chinook salmon, steelhead, and rainbow and brown trout is a major recreational activity on the Trinity River throughout the year but is more prevalent between April and December. BLM issues up to 100 permits for commercial fishing guides along this reach of river. The Forest Service also issues 13 rafting permits for the river, although most rafting occurs downstream of the Project area. Visitor use in the Project area is generally light throughout the year, with bank fishermen, drift boats, and rafts occasionally transiting the area.

Temporary construction activities associated with the Project could pose a physical hazard to recreational users of the river and cause short-term resource damage to lands used for recreational activities in and adjacent to the Project area. Potential physical hazards to recreationists include the presence of temporary river crossings, operation of construction equipment and vehicles in and adjacent to the river, changes in the river's subsurface flow patterns as a result of the in-channel addition or removal of gravel, the addition of wood into the channel, and an increased potential for a hazardous materials spill (e.g., diesel and hydraulic fluid) from construction equipment and vehicles operating in and adjacent to the river. During Project implementation, public access in the construction area would be limited; access to residences in activity area C-10 (see Figure 2-1 of the EA/IS) would be provided in close coordination with TRRP staff and TRRP's construction contractor. Public access points above (Lorenz Gulch) and below (Evans Bar) the Project area would be available to recreationists throughout the construction period.

An environmental commitment listed in Table 2-5 of the EA/IS (EC-RE-1 [4.8-1a]) and described in Appendix D requires Reclamation to post precautionary signage and other public notification warning of in-river construction in order to reduce the hazards to recreational users associated with in-river construction activities. This approach has worked well for previous TRRP projects and has been particularly effective in reducing short-term impacts on in-water recreational activities such as boating and fishing over the past 10 years. In the long-term, natural vegetation and a more sinuous naturally functioning river will benefit river recreation.

HOW THE ACTIVITY WILL DIRECTLY ALTER RIPARIAN AND/OR FLOODPLAIN CONDITIONS

The Position of the Activity Relative to the Riparian Area and Floodplain

As described in section 2, the primary purpose of the Project is to make physical changes to the landscape within the Project area that will essentially "take the handcuffs off the river" and allow for dynamic changes to continue over the long-term under the flow and sediment regimes that persist after construction of the TRD.

Any Likely Resulting Changes In:

Vegetation Composition, Age Structure, Quantity, or Vigor

Figure 3-1 in the EA/IS shows the habitat types (based on dominant vegetation type) that in the Project area. Currently, the riparian vegetation that occurs along the banks of the Trinity River lacks complexity with respect to composition, age structure, and quality. The sand berm that has developed since the TRD was constructed is occupied by homogeneous stands of willow in narrow stringers with little riparian vegetation along the margins of the floodplain. In addition, the entire corridor was subjected to a variety of placer mining activities, including both hydraulic and dredge operations within the Project area. As a result, the floodplains have increased in elevation over time due to excessive deposition of mine tailings with virtually no soil available to support riparian or upland vegetation other than extensive populations of invasive weeds (e.g., star thistle and blackberry).

The Project would result in lowering floodplain elevations to enable alluvial processes to reestablish under lower flows and provide opportunities to reestablish a complex assemblage of native riparian and upland vegetation, including trees, shrubs, and grasses at elevations that enable rooting within the hyporheic zone of alluvial features.

The revegetation efforts described in Chapter 2 and Appendix D of the EA/IS have been developed in conjunction with Forest Service botanists and fish biologists to ensure that a complex riparian community becomes reestablished within 5-10 years after construction is completed. In addition, the clearing and grading of both floodplain and upland areas are expected to reduce the populations of invasive plants and increase the probability for recruitment of native plant species along with extensive planting efforts.

Relevant Soil Properties Such as Compaction or Percent Bare Ground
With the exceptions of several of the access routes and staging areas, most of the Project area has been disturbed by historic mining activities and to a lesser degree by periodic flood flows. Prior to the construction of the TRD, flood flows in this section of the river replenished the alluvial material that allows for soil development over time. The large-scale historic mining activities through the Project area essentially left isolated locations where a soil profile remains intact, and large portions of the Project area have no soil or vegetation remaining. The nature of the alluvial and upland landscapes that would be subject to Project activities is not conducive to the compaction typically associated with heavy equipment. The amount of revegetation proposed is expected to decrease the amount of bare ground over the long term as riparian and upland vegetation becomes reestablished on the newly constructed surfaces.

Relevant Floodplain Properties Such as Width, Roughness, Bank Stability, or Susceptibility to Erosion
As described previously, changes in floodplain properties to enhance habitat for anadromous salmonids (the single ORV) is one of the key objectives of the Project. The overall goal of the TRRP is to provide opportunities for the river to continue to change and adjust to modified flow and sediment regimes required under the 2000 ROD.

HOW THE ACTIVITY WILL DIRECTLY ALTER UPLAND CONDITIONS

The Position of the Activity Relative to the Uplands
As described in section 3.5.1 of the EA/IS and shown on Figure 2-1, virtually the entire upland portion of the Project area has been subjected to some level of disturbance associated with historic mining activities and, subsequently, with rural residences established on private parcels. The Project would use upland areas for placement of excess excavation, access, and staging activities. At certain locations upslope from the right bank, upland vegetation would be removed to provide adequate and safe working conditions for these types of activities.

Any Likely Resulting Changes In:

Vegetation Composition, Age Structure, Quantity, or Vigor
Figure 3-3 of the EA/IS shows the type of habitat that occurs within the upland activity areas. As described above, the composition, age structure, and quantity of vegetation within these areas reflects more than 150 years of periodic disturbance associated with historic mining activities (both hard rock and placer) and subsequent occupation and use of both private and NFS lands for a variety of recreational purposes and residential structures. On NFS lands, clearing and grading associated with access and upland activity areas would result in some reduction in mature vegetation, but reclamation of large mine tailing deposits would include revegetation with native trees (conifers and hardwoods), shrubs, and grasses.

Relevant Soil Properties Such as Compaction or Percent Bare Ground
With the exception of several of the access routes and staging areas, most of the Project area has been disturbed by historic mining activities and, to a lesser degree, by periodic flood flows. Prior to the construction of the TRD, flood flows in this section of the river replenished the alluvial material that allows for soil development over time. The large-scale historic mining activities throughout the Project area essentially left isolated locations where a soil profile remains intact, and large portions of the Project area have no soil or vegetation remaining. The nature of the alluvial and upland landscapes that would be subject to Project activities is not conducive to the compaction typically associated with heavy equipment. The amount of revegetation proposed is expected to decrease the amount of bare ground over the long term as riparian and upland vegetation become reestablished on the newly constructed surfaces.

Relevant Floodplain Properties Such as Width, Roughness, Bank Stability, or Susceptibility to Erosion
As described previously, changes in the floodplain properties to enhance habitat for anadromous salmonids (the single ORV) is one of the key objectives of the Project. The overall goal of the TRRP is to provide opportunities for the river to continue to change and adjust to modified flow and sediment regimes as required under the 2000 ROD.

Relevant Hydrologic Properties Such as Drainage Patterns or the Character of Surface and Subsurface Flows
In addition to the Trinity River, one intermittent creek flows through the Project area (Carr Creek). Project activities were designed to avoid this area. The grading plan developed for the upland disposal areas includes topographic features intended to disperse, rather than concentrate overland flow. The geologic investigations conducted by the TRRP design team did not identify any sources of surface or groundwater flow within any of the activity areas illustrated on Figure 2-1 of the EA/IS.

Potential Changes in Upland Conditions That Would Influence Archaeological, Cultural, or Other Identified Significant Resource Values

As described in Section 3.5 of the EA/IS, pre-historic and historic cultural resources occur within and adjacent to the activity areas associated with the Project. Close coordination between Reclamation, Forest Service, and BLM cultural resource managers resulted in a Project that complies with section 106 of the National Historic Preservation Act and received concurrence from the California State Historic Preservation Officer.

HOW CHANGES IN ON-SITE CONDITIONS CAN OR WILL ALTER EXISTING HYDROLOGIC PROCESSES

Any Likely Resulting Changes In:

Ability of the Channel to Change Course, Reoccupy Former Segments, or Inundate Its Floodplain
The Project is expected to increase the ability of the river to meander and evolve into a more complex and dynamic channel structure. The expansion of functional floodplain accessible at a much wider range of flows, coupled with development of a low-flow side channel, will promote reestablishment of morphological response to ongoing changes in the flow and sediment regimes that are key elements of the TRRP.

Streambank Erosion Potential, Sediment Routing and Deposition, or Debris Loading
A key objective of the TRRP is reestablishing the alluvial processes that occurred prior to the construction of the TRD, but at a reduced level of scale and intensity. Changes in bank erosion, sediment flux, and debris loading are viewed as positive outcomes by the TRRP and its partners.

The Amount or Timing of Flow in the Channel
The flow regime of this section of the Trinity River is highly influenced by the TRD and releases from Lewiston Dam. Section 3.10 of the EA/IS provides an in-depth discussion of this topic.

Existing Flow Patterns
The Trinity River is highly regulated through the Project area, particularly under base flow conditions. The Project would not change the flow patterns in the river within or adjacent to the Project area other than providing opportunities for floodplain inundation, changes in the direction and velocity of flow associated with the new meander complex, and direction of some flow into a new side channel.

Where structured log jams and other large wood structures are placed in mid-channel locations, the flow is expected to increase in velocity on both sides and decrease in velocity immediately upstream and downstream. An undetermined percentage of the flow may be directed toward both adjacent banks because of new mid-channel features. However, due to expansion of the floodplain on river right and shallow bedrock on river left, these banks will be resilient to erosion as revegetation occurs over time.

Surface and Subsurface Flow Characteristics
Please refer to existing flow patterns described above.

Flood Storage (Detention Storage)
The existing topographic setting of the Project area is not conducive to flood storage. The reduction in the floodplain elevations would result in an increase in the hyporheic connection between the river and shallow groundwater. Planting at the depth where rooted plants can access this hyporheic flow during the growing season would increase the potential for successful revegetation of riparian areas with post-construction irrigation.

Aggradation or Degradation of the Channel
The fundamental purpose of the Project is to reestablish morphological processes that would enhance opportunities for aggradation and degradation of alluvial features in a manner that resembles processes typically associated with an unregulated river, but at a smaller scale. River and in-channel activities are intended to jumpstart this process and provide the river with the means to continue these processes over time under the TRRP-managed flow regime.

ESTIMATION OF THE MAGNITUDE AND SPATIAL EXTENT OF POTENTIAL OFF-SITE CHANGES

Changes That Influence Other Parts of the River System
The Project is likely to affect downstream areas of the river in several ways. The short-term episodic increases in turbidity related to in-river construction and access activities would be noticeable for periods of time ranging from several hours to several days, even though the turbidity levels would not exceed the permit thresholds. High flows following construction are expected to remobilize alluvial material to depositional features downstream, essentially replenishing spawning gravels at other locations. Over time, the various large wood structures will degrade and offer a source of large wood to other areas downstream. The modification of hydraulic conditions within the Project area could have some effect on the channel directly downstream for a period while the channel adjusts to the new configuration. However, these changes are not expected to be great enough to influence the river downstream of the Project reach.

The Range of Circumstances under Which Off-Site Changes Might Occur
Increases in turbidity may be visible for several miles for short periods of time before dilution and mixing occur downstream of Canyon Creek, a perennial stream that enters the river about 5 miles below the Project area. The downstream mobilization of large wood could occur periodically over the course of several years; the distance downstream would vary considerably depending on the duration and magnitude of flood events.

The Likelihood That Predicted Changes Will Be Realized
It is highly likely that the predicted changes for this Project will be realized. Recent TRRP projects intended to restore alluvial processes and benefit anadromous fish habitat in the mainstem Trinity River have resulted in the same changes predicted for this Project.

Specify Processes Involved, Such as Water and Sediment, and the Movement of Nutrients
The construction of a meander complex and expansion of floodplain and side channel habitat, coupled with placement of large wood throughout the Project area, will have short-term effects on how water, sediment (including organic sediment), and nutrient cycling processes are expected to have a beneficial effect on the ORV for the Trinity River in both the short term and long term.

ANALYSIS OF EFFECTS TO WATER QUALITY

Relevant Water Quality Parameters
The primary water quality parameter that would be affected by the Project is sediment; temperature is not a limiting factor to the ORV in the mainstem Trinity River due to the influence of the TRD and the managed flow regime downstream of Lewiston Dam. In 1992, the Environmental Protection Agency (EPA) added the Trinity River to its list of impaired rivers under Section 303 (d) of the Clean Water Act due to excessive

sediment. In 2001, the EPA established a Total Maximum Daily Load (TMDL) for sediment in the river, primarily associated with the degradation of habitat for anadromous salmonids associated with excessive sedimentation. Additional information on this topic is available for review in section 3.11 of the EA/IS.

The Trinity River is typically very clear, with natural background turbidity levels in the range of 0 to 1 NTU during low-flow conditions (300 to 450 cfs). Due to the very low background concentrations during the summer, turbidity levels immediately downstream of the most carefully planned and implemented in-channel restoration activities will likely be increased by more than 20 percent above background levels, and short-term plumes extending downstream of restoration activities will be visible. However, turbidity levels will not exceed 20 NTUs at 500 ft downstream of the project (as permitted by the Water Quality Control Board), thereby keeping turbidity well below levels detrimental to aquatic life and levels experienced during natural winter storm runoff.

Over the years, the TRRP has increasingly conducted in-channel work to create immediate aquatic habitat and to conditions where river flows will enhance functioning river attributes (e.g., backwaters and alternating point bars). Effective construction turbidity control measures will be incorporated to minimize turbidity impacts during construction. These include:

- **Structural Containment** – Use structures such as earth barriers, K-rail containment dams, and silt curtains to isolate turbid water from the active channel. These structures typically remain in place until the riverine features are fully excavated and graded.
- **Processing** – Gravel and cobbles excavated from alluvial deposits (e.g., floodplain, dredge tailings) are processed and in some cases washed to help maintain low turbidity levels associated with placement of gravel and cobbles in or adjacent to the channel.
- **Pace of Construction** – Controlling the pace of in-channel excavation and placement of alluvial material ensures that sediment input into the water column is consistent with permit requirements. This method requires direct field observations and real-time turbidity construction monitoring.
- **Flushing** – Within structurally contained areas, turbid water is flushed by allowing flow into the work area and regulating the outflow as a function of measured turbidity levels. Small weirs are used to adjust inflow and outflow rates to ensure permit requirements are met.
- **Channel Bottom Cleaning** – This method entails removal of silt- and clay-sized sediment from the channel bottom, typically by pumping or hand excavation. Turbid effluent water is pumped upslope to containment ponds or areas that are subsequently incorporated into site rehabilitation efforts.

ANALYSIS OF EFFECTS TO OUTSTANDINGLY REMARKABLE VALUES

Water Temperature

Water temperature is one of the most important variables affecting salmonids and other aquatic organisms (Carter 2005). It influences feeding rates and growth, metabolism, development, timing of migration, spawning and rearing, and the availability of food. Since the construction of the TRD, discharge from Lewiston Dam has played an important role in regulating water temperatures in the Trinity River downstream. Depending on the type of water year and time of year, this effect diminishes to varying degrees with distance from Lewiston Dam. The project will not affect cold water adult fish refuge areas but will provide areas with shallow slow water. These locations will aid juvenile salmonids that will benefit from warmer temperatures and higher growth rates.

Water temperatures in the Trinity River through the project area are primarily influenced by flows, topography, and aspect. Flows in this reach typically exceed the temperature targets for short periods of time in the fall (Magneson and Chamberlain 2015). With the exception of staging and access areas downstream of Carr Creek, this reach is oriented in an east-west direction with very little shade provided by topography or riparian vegetation. The extensive mining activities and lack of fertile soil on the right side of the river limit the establishment of riparian forests. On the left bank of the river, mature upland forest occurs in isolated stands downslope from steep bedrock slopes. Overall, the Project is expected to provide a neutral to beneficial effect on temperatures within and downstream of the Project Area both short-term and long-term.

Water Quality (physical, biological, chemical)

The activities incorporated into this alternative have been developed to meet the objectives described in section 1.3 of this EA/IS and are intended to reestablish functional fluvial and alluvial processes in and to some extent downstream of the project area. In the following discussion, the environmental consequences of this alternative on water quality and the associated beneficial uses of the Trinity River focus on three water quality parameters: sediment, temperature, and turbidity.

Due to the extremely low background turbidity levels during low-flow conditions, reduction of these turbidity levels to within 20 percent above background is generally not feasible, even with the environmental commitments listed in Table 2-2. However, short-term increases in turbidity levels that occur during permitted restoration activities are generally not considered to be biologically detrimental to aquatic organisms because the duration of these increased levels is short (several hours) and fish are able to move away from the activity area. Monitoring turbidity increases during implementation of previous TRRP projects has shown that periods of increased turbidity are brief (generally less than 24 hours) at monitoring points located 500 feet downstream and that beneficial uses continued to be protected. In addition, the quantity of fine sediment introduced to the river during activities at low flows is typically small and is restricted with respect to timing and location; furthermore, not all activity areas are experiencing disturbance at the same time.

The consequences of this alternative on water quality associated with in-channel activities and lowering of floodplains would change the location and nature of sediment in and adjacent to the low- flow channel. The placement of spawning-sized gravel at the X-3 crossing necessary to access the activity areas on river left would add approximately 150 cubic yards of material to the river; the gravel used for these crossings would be sized to ensure that it would mobilize during high flows in the first year following construction and provide some augmentation of spawning habitat downstream. As described in Chapter 2 and Appendix D, environmental commitments and design measures would be incorporated into the construction contract to minimize the potential for hazardous materials (e.g., hydraulic fluid) to leak into the river at locations where equipment is working in the water. These commitments and measures would be adequate to protect the beneficial uses of the Trinity River.

The activities incorporated into this alternative are intended to reconnect the existing floodplains with the channel, which would result in shallow depths and slow velocities across a wider range of stream flows than those currently being provided. Other activities incorporated into this alternative would increase the complexity of the channel to increase habitat for all life stages. Due to the location and aspect of the river in the project area, water temperature in the river below Lewiston Dam is heavily influenced by flow releases from the dam as well as input from tributaries downstream. The east-west orientation of this reach also influences the degree to which afternoon shading affects water temperature.

This alternative would include clearing and grading a number of activity areas, some of which have some amount of riparian vegetation. Functionally, the existing riparian vegetation has little influence on water temperature through this reach, but it does provide shaded riparian area habitat for aquatic

organisms at isolated locations along the channel margin. While there would be some localized effect on water temperature because of clearing and grading activities, the expansion of the main channel (IC-3) and lowering of the floodplains (R-1 and R-2) are expected to establish more riparian vegetation. Revegetation efforts associated with these activities would increase functional riparian vegetation, which in turn would increase shade and improve habitat for juvenile salmonids along the margins of these features under a wide range of flow conditions, including those that may occur during late-summer releases when air temperatures are high.

The activities described in Chapter 2 for this alternative would temporarily increase turbidity and total suspended solids in the Trinity River. The incorporation of the environmental commitments listed in Table 2-2 (EC WQ-1 [4.5-1a, b], EC WQ-2 [4.5-1c], EC WQ-3 [4.5-1d], EC WQ-4 [4.5-1e, 4.5-2a-2c] and EC WQ-5 [4.5-3a -3c]) in conjunction with the design elements and construction criteria described in Appendix D (e.g., in-river construction, water pollution prevention, and construction schedules) are intended to limit turbidity and suspended sediments in the Trinity River. Additionally, river's edge and in-channel construction activities would be staged to minimize potential turbidity effects. During in-channel construction activities, increases in turbidity levels could occur because of the excavation of alluvial material. Connection of isolated and newly constructed side channels (e.g., during the first flush of flowing water) would result in short-term increases in turbidity levels as this material is removed from and/or redistributed downstream. Fine sediments may be suspended in the river for several hours following construction activities; however, the project would be compliant with the conditions of the Program's General Water Quality Certification and is not expected to have a negative impact on beneficial uses.

The extent of downstream sedimentation would be a function of the size and mobility of the substrate. For example, fine-grained sediments such as silts and clays can be carried several thousand feet downstream of construction zones, while larger-sized sediments such as coarse sands and gravels tend to drop out of the water column within several feet of the construction zone. Collectively, the activities included in this alternative could result in short-term increases in turbidity and suspended solids concentrations in the water column that could potentially violate the Basin Plan objectives for turbidity in the Trinity River.

One discrete temporary crossing of the river at this site (X-3) would provide access for in-channel and riverine work areas. This low-flow channel crossing would be constructed of appropriately sized alluvial materials. In conjunction with construction of R and IC activity areas, additional crossings would be used at several locations using similar types of temporary fords. Placement of alluvial fill materials could temporarily increase turbidity and suspended materials during and immediately following crossing construction. Removal and distribution of alluvial materials upon deconstruction of the low-flow channel crossings could also increase turbidity and suspended materials during and immediately following excavation.

Aquatic and Riparian Habitat

Activities related to implementation of this Project include the following environmental commitments, as outlined in Table 2-2, to reduce impacts to fishery resources: EC FR-1 [4.6-1a, 1b], EC FR-2 [4.6-4a-4e], EC FR-3 [4.6-4f], EC FR-4 [4.6-5b], and EC FR-5 [4.6a-6d]. The Project would result in the localized loss of vegetation and general disturbance to the bed and banks of the Trinity River. Removal of vegetation and soil could accelerate erosion processes in the project area and increase the potential for sediment delivery to the Trinity River. As discussed in section 3.11, Water Quality, the Project would result in some project-related effects on erosional processes and changes in the sediment regime within the project area and to a limited extent downstream. The excavation and placement of alluvial materials within the channel and associated floodplain of the Trinity River would result in changes to the amount and character of sediment that may be mobilized post-construction.

In certain IC, SLJ, and R activity areas, processed alluvium (gravel and cobble) would be placed within and adjacent to the low-flow channel in a manner intended to increase spawning and rearing habitat for Coho salmon and other salmonids. However, the environmental commitments listed in the above paragraph have been incorporated into the Project to minimize the release of fine sediment into the water column during or following construction and to reduce the impacts to existing spawning and rearing habitat for short periods of time, primarily in conjunction with elevated turbidity levels. The placement and use of several low-water fords in the Trinity River would require increasing the amount of coarse sediment at several shallow riffles during in-river construction windows, possibly for several months. The presence and use of the fords across the Trinity River would occur at locations occasionally used by salmonids as spawning and rearing habitat. Proportionally, these fords would occupy a small percentage of the available habitat in the project reach during construction.

The Project's rehabilitation activities are intended to enhance the wetland, riverine, and upland for wildlife and fish. The Project would convert almost 5 acres of non-riparian areas (e.g., terrace deposits) to floodplain and riparian habitat within a 3- to 5-year post-project time frame. Temporary disturbance of these habitats in the project area during project implementation would occur in conjunction with vegetation removal, grading, and other construction activities. At some activity areas (e.g., R-1), populations of invasive plants will be removed to expand floodplain habitat for salmonids and other aquatic organisms. Throughout the project area, activity areas were refined to avoid wooded areas where possible; however, several activity areas (e.g., C-2, C-10, U-2a and 2b) require the use of upland areas and would include the removal of conifers and other hardwood tree species. Tree removal (e.g., hazardous trees) outside these activity areas would be limited and would be subject to site-specific review and authorization by BLM and the Forest Service prior to removal in order to enhance habitat complexity, provide safe working conditions, and facilitate access. The Project is intended to reduce the existing populations of noxious weeds and invasive plant species through grading, clearing, and revegetation activities as well as periodic flooding of newly constructed floodplains. During the rehabilitation activities, control measures for invasive plants (e.g., Himalayan blackberry, didymo), including using weed-free erosion control materials and washing equipment, would be implemented in accordance with environmental commitment EC-VW-9 [4.3-2b and 13d] (see Table 2-2) to prevent the spread of noxious weeds in the project area. Areas contaminated with known occurrences of (*Didymosphenia geminata* - didymo) would be avoided. If no uncontaminated areas are available for water drafting, water drafting equipment will be cleaned by approved methods prior to drafting water from an uncontaminated location. Didymo-infested water shall be discharged away from a water source or from the same source where it was taken.

Some trees and downed logs would be reused on site to establish wood jams and structures along the river. Riparian and wetland habitats would be protected outside the activity areas and would be clearly marked for avoidance in accordance with EC-VW-1[4.7-1a]. Special-status plants have not been found in the project area and, therefore, would not be affected by the rehabilitation activities.

Implementation of the Project would result in direct impacts (i.e., impacts associated with work in the proposed activity areas) on approximately 2.73 acres of montane riparian habitat, 0.26 acre of valley foothill riparian habitat, and 1.26 acres of riverine habitat, for a total of 4.25 acres. The construction and use of temporary access and temporary activity areas (i.e., access roads, contractor use areas, and river crossings) would also result in 5.03 acres of temporary impacts, which include 4.22 acres of montane riparian habitat, 0.31 acre of valley foothill riparian habitat, and 0.50 acre of riverine habitat. Of this habitat, over 6 acres would be revegetated with riparian species. Because of the nature of the project, the

impacts to riparian habitat from construction associated with access and staging areas would be temporary, and the riparian habitat is expected to recover over time. Figure 3-3 in the EA/IS illustrates the size and location of riparian habitat that would be affected.

Construction activities associated with the Project would result in temporary impacts to waters under the jurisdiction of the Corps (jurisdictional waters), which include the Trinity River and the wetlands and streams in the project area. Figure 3-4 in the EA/IS illustrates the size and location of waters of the United States that would be affected by the Project. Construction activities associated with the temporary access routes and use of activity areas (e.g., roads, staging) as part of the Project would temporarily affect up to 3.97 acres of riparian wetlands, 0.04 acre of seasonal wetlands, 2.15 acres of perennial stream, 0.01 acre of intermittent stream, and less than 0.01 acre of ephemeral stream. Approximately 2.66 acres of riparian wetlands and 3.86 acres of perennial stream would be permanently affected as a result of the rehabilitation activities. However, because of the nature of the project, it is anticipated that there will be a net increase in jurisdictional waters within 5 to 10 years after implementation of the Project.

As described in Section 2.1.10, both planting and natural recruitment of native species are planned for the revegetation of the riparian and upland areas under the Project. These revegetation efforts would follow TRRP's 2016 Draft Riparian Mitigation and Monitoring Plan and would incorporate the requirements of the Forest Service, BLM, and other cooperating, responsible, and trustee agencies and landowners. Revegetation will result in the reestablishment of approximately 9.3 acres of habitat in five elevation zones, which include emergent wetland (0.4 acre), herbaceous toe zone (0.8 acre), willow and cottonwood (6.3 acres), transition (0.8 acre), and upland (1.0 acre). Up to 40.7 acres of areas disturbed by project activities would also be seeded and mulched[22]. Specifically, for riparian habitat, seven activity areas (i.e., R-1, R-2, and IC-4 through IC-7)) will be revegetated with native riparian species. Approximately 6.44 acres of riparian habitat in the R activity areas and 4.4 acres in the IC activity areas (total of 10.8 acres) would be established as a result of the Project. In addition, riparian revegetation of access and staging areas would add 6.63 acres of functional riparian habitat. A total of 20.71 acres of riparian habitat would therefore be functional in 5 to 10 years after completion of the project. Based on the impact tables on Figure 3-4 in the EA/IS, the Project would meet the TRRP's objective of no net loss of riparian habitat in the long term.

Exposed soils in the upland and staging areas are susceptible to mobilization from rainfall during early-season runoff events. In-river excavation is planned as part of Alternative 1; therefore, it is expected that excavation and operation of heavy equipment would re-suspend silt and sand, resulting in localized and temporary increases of suspended sediment and turbidity. Operation of heavy equipment in the active channel during these activities would likely re-suspend streambed sediments. Any juvenile salmonid salmon rearing in the area during in-channel construction could be temporarily displaced or their social behavior could be temporarily disrupted by turbidity created during this activity.

Erosion and deposition of fine sediments associated with implementation of this alternative action are expected to be localized and temporary. Some fine-textured sediment may settle near or on spawning habitat located downstream of riverine activity areas, but this sediment is not expected to impair redd excavation or spawning activities. Excavation, grading, and coarse sediment addition within the channel would occur only during low-flow conditions between July 15 and September 15 prior to the spawning period. In-river work, including construction of temporary crossings, may temporarily displace adult salmonids using holding habitat within the project area to other holding habitat either upstream or downstream of the project reach due to transient turbidity and short-duration sediment plumes created by construction activity. Juvenile salmonids using this reach during this timeframe could also be temporarily displaced or their social behavior could be temporarily disrupted due to increases in turbidity or suspended sediment. Behavioral disruption, even temporarily, could result in some increased vulnerability to competitive interactions or predation for salmonids. These temporary impacts were anticipated and

addressed in the 2000 Biological Opinion (BO) and associated incidental take statement for the ROD as well as the amended BO for in-river work.

Adult Pacific lampreys migrate upstream from spring through early summer to spawn. Larval lampreys inhabit the river year-round. Siltation of nests that may be built in suitable habitats (i.e., low-slope riffles) could occur. Filter feeding by larval lampreys could be disrupted by an increase in suspended sediments caused by construction-related erosion, although this impact would be very localized and temporary. In addition to ammocetes occupying alluvial substrate, freshwater mussel populations occur at locations through the project area. Mussel beds observed within the boundaries of in-channel activity areas will be flagged for avoidance and, to the extent feasible, individuals will be relocated to nearby appropriate habitat that would not be disturbed (see EC-VW-10). Some mussels and lampreys may inadvertently be physically displaced during construction; this affect would be minimal to either species due to the large populations known to occur at other locations that would be protected within the project area as well as upstream and downstream.

The environmental commitments incorporated into this alternative would be implemented in conjunction with the construction activities described in Chapter 2. In addition to the typical practice of refueling construction equipment at upland activity areas (e.g., U-1a and 1b, U-2a and 2b), this alternative also includes activities that would result in mechanized equipment (e.g., trucks, excavators) crossing and/or operating in the active channel for short periods. As a result, minor fuel and oil spills could occur and there would be a risk of larger releases. Without rapid containment and clean up, these materials could be toxic, depending on the location of the spill in proximity to water bodies in the project area. Oils, fuels, and other contaminants could have short-term effects on the various life stages of salmonids and other anadromous fish that are using habitat in close proximity to construction activities; however, this effect is not anticipated to negatively affect individual organisms or populations.

Coho salmon and other special-status aquatic species also occur in the Trinity River, and suitable salmonid rearing habitat is used in the project area year-round. Adult Coho and other salmonids migrate through the project area and use suitable spawning habitat throughout the 40-mile reach of the Trinity River below Lewiston Dam. Direct injury to, or mortality of, Coho salmon and other salmonids could occur during in-river construction and construction of the low-flow channel crossings. These in-water work activities would be conducted only during late-summer low-flow conditions (e.g., July 15 to September 15), thus minimizing the potential for direct mortality to rearing Coho and other salmonids because this period corresponds to a time of the year when the fewest number of juvenile salmonids are known to occur in the project reach.

NMFS expects that all displaced juvenile fish, including Coho salmon, would find suitable habitat in river reaches upstream or downstream of the project reach because juvenile rearing habitat in the mainstem Trinity River is likely under-saturated during summer and fall months (National Marine Fisheries Service 2006). The construction period identified above would completely avoid the spawning period for Coho salmon; therefore, direct impacts to adult Coho salmon or their eggs/alevins (yolk-sac fry) would not occur.

A small, temporary, but uncertain level of stranding of Coho salmon fry could occur on the newly constructed inundation surfaces during rapidly receding flood-flow periods in the winter and early spring when fry are emerging. Although stranding of fry under such receding flood conditions occurs naturally, the constructed features could increase the potential for stranding. As fluvial channel migration occurs through these surfaces, the potential for fry stranding is expected to equilibrate to that of a natural stranding risk.

Table J-1 shows the amount of WUA fry and presmolt salmonid habitat that would be provided after implementation of the Project as flows increase through the project reach.

Table J-1. WUA for Fry and Presmolt Habitat – Dutch Creek Site

Flow (CFS)	300	450	700	1,100	2,000	4,500
Fry WUA (acres)	2.52	2.25	2.37	2.08	1.71	2.36
Presmolt WUA (acres)	2.87	2.67	2.82	2.57	2.16	2.68

As indicated in Table J-2, the Project would result in an increase in rearing habitat in the project reach over a range of flows. These increases in habitat for extremely young fish can be critical for their survival. This alternative also includes design elements to protect adult spawning and holding habitat, particularly at the sensitive features shown on Figure D-1 (Appendix D) in the EA/IS. It is not expected to have a long-term effect on the amount or utility of holding habitat for adult salmonids. These beneficial effects will also apply to varying degrees to other aquatic organisms that use habitat in this reach.

Table J-2. Increase in WUA Habitat with Project – Dutch Creek Site

Flow (CFS)	300	450	700	1,100	2,000	4,500
Fry WUA (acres)	0.27	0.28	0.65	0.64	0.58	1.04
Presmolt WUA (acres)	0.30	0.35	0.68	0.69	0.69	1.27

Geomorphic Condition (Sediment Transport and Substrate Quality)
The 1.5-mile-long reach of the river in the project area is characterized by a relatively wide alluvial valley bottom, relatively low water-surface slopes, low sinuosity, and simple channel geometry. The channel is almost exclusively single-thread, with some evidence of riffles, bars, or similar topographic elements. Sinuosity is low, with channel curvature being almost entirely driven by valley confinement. Sections of the channel not influenced by valley walls are nearly straight. Pebble counts conducted in the project area revealed mean values of 75 millimeters (mm) and 140 mm and 84th percentile values of 190 mm and 280 mm, respectively.

The relatively low slope and simple channel geometry that dominate the area are linked to historical mining activities. Dutch Creek Flat at the upper end of the project area was stripped of all alluvial sediment in about the year 1900; the sediment deposits and geomorphic landscapes currently present in the project area are, therefore, recent.

Several miles downstream of the Dutch Creek site, Oregon Gulch discharged millions of cubic yards of mining debris from hydraulic mining at the LaGrange Mine on Oregon Mountain over a 60-year period ending in the 1930s. Massive aggradation during the period dominated by hydraulic mining was followed by large-scale dredge mining of the alluvial valley floor that continued into the 1950s. The channel and associated alluvial features of the Trinity River were dredged extensively, and the dredge tailing deposits are evident on the right side of the river throughout the project area. Essentially the floodplain soils in the area were removed by historic mining. Floodplain soils will be enhanced both via placement of materials during construction and as flows deposit sediment in newly lowered locations.

Flows in the Trinity River downstream from Trinity and Lewiston dams have been regulated since Trinity Dam was closed in 1960. Diversion of up to 90 percent of the Trinity River to the Sacramento River basin in the 1960s and 1970s led to substantial geomorphic changes in many locations along the Trinity River, with the predominant responses being channel narrowing and vegetative encroachment along the channel margins (USFWS and HVT 1999). Although flow regulation has certainly influenced current conditions, larger scale historical mining impacts are also important drivers of recent geomorphic evolution in the project area.

A newly created side channel and expansion of floodplain inundation (in terms of both timing and area) would enhance the alluvial nature of this section of river through removal of excess dredge tailings and soils that have accumulated over the years. Some fill would be placed within and along the floodplain to create bars and riffles, realign the main channel, and allow inundation of the floodplain at lower flows. Overall, increases in floodplain habitat and vegetation, expected as the project develops overtime, will provide direct habitat benefits for fish and will also enhance invertebrate production that will serve as food for all aquatic species.

Surface and subsurface geology and soil conditions in the activity areas were evaluated as part of the design process, and the types of alluvial material (e.g., cobble, gravel, fines) available for the rehabilitation activities were characterized to determine how much material could be re-used onsite. Where fill placement would occur, these areas would initially be exposed to water erosion from the river, particularly during high flow and flood events, but the newly created features are expected to stabilize after grading efforts are completed, initial erosional events occur, and vegetation is re- established in disturbed areas. Sediment would be transported downstream to be deposited on downstream alluvial features as part of the natural riverine process. The overall effects on river geomorphology would benefit aquatic resources and result in more natural alluvial processes that would result in an increase in the size, amount, and complexity of alluvial features that support diverse aquatic habitat, as discussed further in section 3.12, Fishery Resources.

Substrate Quality
Project construction will directly amend the floodplain substrate as historically mined areas will receive fines and wood augmentation. In addition, enhanced post-project floodplain topography will encourage deposition of fines in upslope areas and development of vegetation. The resultant vegetation will provide cover for fish, future wood structures, and invertebrate production to the river and for the benefit of fishery resources.

Nutrient Cycling
The addition of large wood and other organic materials on all disturbed areas would increase nutrient cycling (addition of organic material) throughout the Project area. Placement of large wood and other organic material (chips, slash) and their subsequent decomposition will encourage nutrient recycling as aquatic invertebrates, saprotrophic fungi, and detritivores such as bacteria directly consume dead wood. In turn, these organisms will release nutrients by converting them into other forms of organic matter that may then be consumed by other organisms.

Condition of Aquatic Invertebrate, Amphibian and Mollusk Habitat
The meander complex, lowered floodplains, side channel, and wood structures all increase the complexity of habitat available to amphibian and aquatic invertebrate species, including mollusk beds.

Species Composition and Diversity
The Project is expected to result in an increase in species composition and diversity and in habitat complexity in the Project reach.

Fish Species Population Conditions

Anadromous salmonid fish species
Anadromous adult fish spawning success will be improved in several ways. Floodplains that are constructed to be inundated at flows in excess of 1,000 cfs and graded to ensure stranding does not occur offer refugia habitat for juvenile salmonids under flows between 1,000 and 6,000 cfs. The side channel would also offer refugia habitat under similar conditions. The meander complex would increase the amount of substrate suitable for spawning and rearing habitat, as well pools used for adult holding habitat. Placement of wood structures near spawning habitat would provide extensive cover from predators for adult anadromous fish during spawning activities. The sequestration of fine sediments around various wood structures is also expected to reduce the amount of fine sediment available for deposition within spawning areas.

Resident fish species
The construction of a meander complex, reduction of floodplain elevations to increase timing and extent of inundation, and development of a side channel all offer opportunities to increase the success of spawning and rearing of aquatic organisms, including fish and other aquatic organisms (e.g., mussel beds), The placement of structured log jams and other large wood features throughout the Project area is expected to benefit both anadromous and resident adult fish spawning and juvenile fish rearing success in the Project reach.

Species traditionally used by, and culturally important to, Native Americans
The need to restore and maintain the natural production of anadromous fish in the mainstem Trinity River is derived in part from the federal government's trust responsibility to protect the fishery resources of the region's Indian tribes. The Trinity River Basin Fish and Wildlife Restoration Act of 1984 (Public Law 98-541) expressly acknowledges tribal interests in the basin's fishery resources by declaring that the measure of successful restoration of the Trinity River fishery includes the "ability of dependent tribal…fisheries" to participate fully, through enhanced in-river "harvest opportunities, in the benefits of restoration." In addition, the 1992 CVPIA specifically recognizes the federal trust responsibility regarding the Trinity River fishery. The project could potentially affect anadromous fish, non-anadromous fish, water, wildlife, vegetation, and overall riverine health; these impacts in turn could affect tribal cultures and economics.

Salmon, steelhead, sturgeon, and lamprey that spawn in the Trinity River pass through the Hoopa Valley and Yurok Reservations and are harvested in tribal fisheries. The fishing traditions of these tribes stem from practices that far pre-date the arrival of non-Indians. Accordingly, when the federal government established what are today the Hoopa Valley and Yurok Indian Reservations on the Trinity and lower Klamath Rivers, it reserved for the benefit of the Indian tribes of those reservations a right to the fish resources in the rivers running through them. The Yurok and Hoopa Valley tribes' federally reserved fishing rights entitle them to take fish for ceremonial, subsistence, and commercial purposes.

While the focus of the legal history surrounding Indian rights to resources has concentrated on water and fisheries, other resources, such as wildlife and vegetation, are also extremely important to the tribes, and the tribes have assessed that these resources are no less reserved. In the case of the Hoopa Valley and Yurok tribes, the decline in the health of the region's rivers has limited the availability of grasses and other plants important to traditional basketry, art, and medicine. Thus, while anadromous fish are the focus of the TRRP, other trust assets, such as vegetation, are embodied in the federal government's trust responsibility and, accordingly, need to be considered in the decision-making process. Table 7.17-1 of the Master EIR/EA (Regional Water Board and Reclamation 2009) lists 10 aquatic resources (fish species) and 12 terrestrial resources (e.g., willows, cottonwoods, wild grape, bulrush) that are considered trust assets protected on behalf of the Tribes of the Klamath/Trinity Region. These species would generally benefit from restoring historic floodplain functions as this project is intended to do.

Implementation of the Dutch Creek Project would continue to support tribal trust assets. The short-term impacts described in sections of the EA/IS pertaining to geology, fluvial geomorphology, and soils; water quality; fishery resources; and vegetation, wildlife, and wetlands would occur if the project is implemented. These impacts are expected to be short-term and to be outweighed by the overall benefits to Tribal trust assets gained through implementation of the overall TRRP.

TIME FRAME OVER WHICH EFFECTS ARE LIKELY TO OCCUR

The proposed Project is expected to begin achieving its objectives immediately following Project implementation and continue to provide benefits to the habitat within the Project reach and downstream well into the future.

During Project implementation, insignificant amounts of turbidity are expected to occur in conjunction with in-channel and riverine activities due to excavation and placement of alluvial materials. These effects are expected to be ephemeral and would generally be confined to the area within and adjacent to the activity areas. Directly following implementation, the constructed meander complex and side channel would provide habitat for adult and juvenile salmonids and other aquatic organisms. The first large precipitation event following implementation is when stream flow and, therefore, flow patterns will be increased enough to inundate the expanded floodplain surfaces, providing refugia habitat for juvenile salmonids.

COMPARISON OF PROJECT ANALYSES TO MANAGEMENT GOALS

As described in Chapter 1 of the EA/IS, the Project supports specific resource goals of the Shasta-Trinity National Forest Land and Resource Management Plan[2] (LRMP) to “provide for the protection, maintenance and improvement of wild trout and salmon habitat,” to “coordinate rehabilitation and enhancement of projects with cooperating agencies involved in the Model Steelhead Stream Demonstration Project Plan and the Trinity River Basin Fish and Wildlife Management Program,” and to “identify and treat riparian areas that are in a degraded condition” (LRMP, pages 4-4 and 4-18). In so doing, the Project also meets LRMP guidelines to “design and implement fish and wildlife restoration and enhancement activities in a manner that contributes to attainment of Aquatic Conservation Strategy objectives (LRMP page 4-58), as well as the riparian management prescription objective that “fish habitats will be maintained and enhanced” (LRMP pages 4-58 and 4-59).

A portion of the Project occurs within the Riparian Reserve associated with the mainstem Trinity River, with some overlap into the Riparian Reserve for Carr Creek. Riparian Reserves are contained within, and overlay, all Shasta-Trinity National Forest land allocations. The management direction, standards, and guidelines for Riparian Reserves override those of the land allocations they are included in. The BLM’s Redding Field Office manages federal lands in the Trinity River Basin in accordance with its 1993 RMP and Record of Decision (RMP) (BLM 1993). The Trinity Management Area section of the RMP discusses the general condition of natural resources in the plan area and prescribes appropriate land use management for lands within the plan’s jurisdiction, including BLM-managed lands at the Dutch Creek rehabilitation site. As part of its decision-making process, BLM must evaluate the consistency of the modified proposed action with the RMP, as amended.

[2] USDA. 1995. Record of decision for the final environmental impact statement for the Shasta-Trinity National Forests. USDA, Forest Service, Shasta-Trinity National Forest.

In addition to the Forest Service LRMP and BLM RMP, the Wild and Scenic River Implementation Guide of July 31, 1996, cites the following pertinent (paraphrased) goals, both of which are met by implementation of the Project's activities:

- Protect the river's free-flowing character and protect or enhance its ORVs
- Maintain or improve water quality and quantity to meet fish habitat requirements

APPENDIX K

Summary of Cumulative Impacts

APPENDIX K

Trinity River Channel Rehabilitation Site: Dutch Creek (River Mile 85.1–86.6) Summary of Cumulative Impacts

Table K-1. Summary of Cumulative Impacts Considering Past, Present, and Reasonably Foreseeable Actions in the Trinity River Basin

Resource Area	Cumulative Impacts
Land Use	Implementation of the proposed action, in combination with other related projects, would not have a cumulative impact in terms of planning policies, nor would river rehabilitation activities result in cumulative effects in terms of local or federal land use planning policies.
Geomorphology and Soils	No significant cumulative impacts associated with geologic hazards, geomorphic processes, or erosional processes are anticipated to occur as a result of implementation of the proposed action in combination with other related projects. While previous TRRP projects (e.g., Lorenz Gulch) and periodic increases in flow regimes continued to increase channel complexity throughout the 40-mile reach, large fires throughout the Trinity River basin continue to influence flow and sediment regimes within the watershed. Appropriate implementation of environmental commitments, project design features, and CEQA-specific mitigation measures would reduce potential impacts to a less than significant level.
Hydrology and Flooding	Implementation of the proposed action in combination with other river rehabilitation activities would not have cumulatively considerable impacts on beneficial uses of the river or result in changes in the quantities of water available for any of those uses or that would cause flooding.
Water Quality	No significant cumulative impacts to water quality are anticipated to occur as a result of implementation of the proposed action in combination with other related projects and recent landscape-level changes as result of recent fires in Trinity County. The TRRP implementation schedule acknowledges the need to stagger implementation of channel rehabilitation projects along the 40-mile reach of the river to ensure that project sites have the opportunity to stabilize and revegetate. Individually, these activities would result in short-term, temporary effects on water quality. Appropriate implementation of environmental commitments, project design features, and CEQA-specific mitigation measures would reduce potential impacts to a less than significant level.
Fishery Resources	No significant adverse cumulative impacts to fisheries resources are anticipated to occur as a result of implementation of the proposed action. The effect of the proposed action, in conjunction with other projects and programs such as the Five Counties Salmonid Restoration effort, is expected to be beneficial in terms of the rehabilitation of habitat and fisheries resources. Implementation of the proposed action as designed, in conjunction with CEQA-specific mitigation measures, would benefit, rather than adversely affect, the fishery resources of the Trinity River in the long term.
Vegetation, Wildlife, and Wetlands	No significant cumulative impacts to vegetation, wildlife, and wetlands are anticipated to occur as a result of implementation of the proposed action in combination with other related projects. The proposed action as designed, in conjunction with CEQA-specific mitigation measures, would benefit rather than adversely affect vegetation, wildlife, and wetlands in the long term, as would most of the other related projects and programs (e.g., Five Counties Salmonid Restoration). Implementation of the proposed action would contribute to long-term ecological benefits in terms of vegetation, wildlife, and wetlands.

Resource Area	Cumulative Impacts
Recreation	No significant cumulative impacts to recreational resources are anticipated to occur as a result of implementation of the proposed action in combination with other related projects. Benefits to recreational values may be achieved through implementation of the TRRP over time.
Wild and Scenic Rivers	No significant adverse cumulative impacts to the outstandingly remarkable values (ORV) of the Recreational section of the Trinity River designated by BLM are anticipated to occur as a result of implementation of the proposed action. The effects of the proposed action, in conjunction with other projects and programs such as the Five Counties Salmonid Restoration effort, is expected to be beneficial to the ORVs that existed on the date of designation (e.g., fisheries resources). Implementation of the proposed action as designed, in conjunction with CEQA-specific mitigation measures, would benefit, rather than adversely affect, the ORVSs in this section of the Trinity River protected under both the federal and state Wild and Scenic Rivers Acts in the long term.
Cultural Resources	No significant cumulative impacts to cultural resources are anticipated to occur as a result of implementation of the proposed action. The environmental commitments, project design features, and implementation of prescribed CEQA-specific mitigation measures (e.g., surveys of potential impact areas by a professional archaeologist prior to construction, protection of potentially significant cultural sites, and coordination with local tribes) consistent with the Programmatic Agreement between the Bureau of Reclamation and the California State Historic Preservation Officer would adequately address potential impacts, including cumulative impacts.
Air Quality	No significant cumulative impacts to air quality are anticipated to occur as a result of implementation of the proposed action. North Coast Unified Air Quality Management District requirements would be addressed by implementation of environmental commitments, project design features, and prescribed CEQA-specific mitigation measures. The proposed action, in conjunction with the other projects and programs occurring within the Trinity River Basin, would contribute cumulatively to global climate change. Thus, the proposed action would contribute to an adverse cumulative contribution to global climate change. Implementation of the proposed action in conjunction with mitigation measures would reduce the cumulative contribution to global climate change to a less than significant level.
Aesthetics	No significant cumulative impacts to visual resources are anticipated to occur as a result of implementation of the proposed action. Implementation of the proposed action would benefit, rather than adversely affect, visual resources in the long term, as would most of the other related projects described in the cumulative effects analysis in the Master EIR.
Noise	No significant cumulative impacts related to noise are anticipated through implementation of the proposed action in combination with other projects. Reclamation would coordinate the implementation of other restoration projects to ensure that construction noise is minimized through project scheduling.
Transportation/ Traffic Circulation	No significant cumulative impacts related to transportation/traffic circulation are anticipated through the implementation of the proposed action in combination with other related projects. Traffic increases would be localized and temporary.