



Trinity River Watershed Restoration Project

Programmatic Environmental Assessment Public Scoping Notice



Introduction

The Bureau of Reclamation's (Reclamation) Trinity River Restoration Program (TRRP or Program), Shasta-Trinity National Forest (Forest), and Bureau of Land Management's (BLM) Redding Field Office are preparing a Programmatic Environmental Assessment¹ (PEA) to evaluate aquatic habitat restoration activities in the Trinity River watershed. The PEA analysis will focus on restoration activities that improve the quality and quantity of accessible cold-water aquatic habitat. As a programmatic analysis, project activities described below may require additional decisions, site-specific surveys, and consultation with associated regulatory agencies prior to implementation. Project activities would typically occur along roads and within areas designated as riparian reserves under the 1994 Northwest Forest Plan² within the Trinity River watershed, in Trinity and Humboldt counties, California. This scoping notice is a request for input from stakeholders and interested parties.

Following the 2000 Record of Decision, the U.S. Department of Interior established TRRP to restore the fisheries of the Trinity River affected by dam construction and related diversions of the Trinity River Division of the Central Valley Project.³ Administered by Reclamation, TRRP is a partnership of federal and state resource agencies, Tribes, and Trinity County. The Program works to restore the processes and attributes of a properly functioning river and watershed to support the recovery of diminished salmon and steelhead populations while retaining the Trinity and Lewiston dams' delivery of water and power to the Trinity River and California's Central Valley.

One of TRRP's primary objectives is to complete watershed restoration to recover aquatic and riparian habitat and improve water quality around Trinity River's tributaries. Proposed projects would restore hillslope hydrologic connectivity, reduce fine sediment input, increase water availability, support functioning habitat, and remove barriers to improve and connect aquatic habitat and restore ecological function.

Most of the land within the Trinity River watershed is managed by the Forest and the BLM. Restoration activities that take place on federally managed lands must comply with federal environmental review and permitting requirements, including compliance with the Wilderness Act of 1964 for projects in designated wilderness areas; and with the Wild and Scenic Rivers Act of 1968 for projects impacting rivers designated as wild and scenic. The proposed project would provide broad programmatic environmental analyses under the National Environmental Policy Act (NEPA) that would be required for site-specific project authorizations.

¹ "Programmatic" is defined by the Council on Environmental Quality as any broad or high-level NEPA review that assesses the environmental impacts of proposed policies, plans, programs, or projects for which subsequent actions will be implemented either based on the PEA or Programmatic Environmental Impact Statement.

² The 1994 Northwest Forest Plan can be accessed at https://www.fs.usda.gov/detail/r6/landmanagement/planning/?cid=fsbdev2_026990.

³ Information about the Central Valley Project can be accessed at <https://www.usbr.gov/mp/cvp/>.

Background

As of August 2022, more than 97% of California is experiencing severe, extreme and exceptional drought, as well as record high temperatures (see Figure 1). The continuation of warming trends and drought will increasingly stress important regional fisheries and hamper efforts to recover vulnerable fish populations (Isaak et al. 2012).

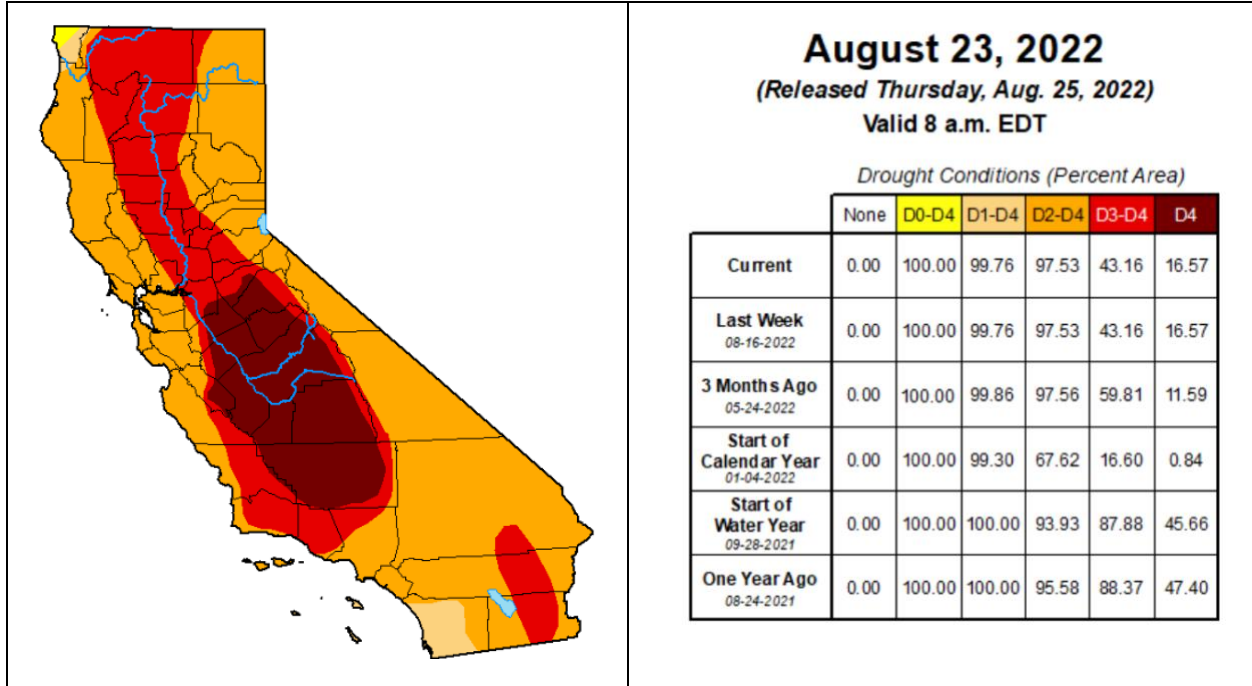


Figure 1. California Drought Map (USDA California Climate Hub)

Regional temperatures are expected to warm in all seasons, perhaps with greater summer maximum temperatures and an increased heat wave frequency (Dahl K. et al. 2019). By 2100, temperatures may increase by 2.2 to 5.4 degrees Celsius above temperatures recorded between 1951-1980 (Hilberg et al. 2019a; Hilberg et al. 2019b).

Air temperature is the dominant factor explaining long-term stream temperature trends (82% - 94% of trends) and inter-annual variability (48% - 86% of variability), except during the summer, when discharge accounted for approximately half (52%) of the inter-annual variation in stream temperatures (Isaak et al. 2018). These conditions will not provide the cold-water habitat upon which our present cold water aquatic species depend.

Snowpack in Northern California has long served as a natural form of water storage, and snowmelt has historically provided a cold-water source for aquatic ecosystems and enough water to keep forests hydrated into the summer months. Historic long-term drought resulting in lower snowpack levels means an earlier snowmelt period that results in a longer dry season. This leaves surrounding forest ecosystems water-stressed and more vulnerable in late summer and fall.

Human demands for water are increasing at a time when streams are at all-time low flow levels. Water warms more rapidly in shallow streams that have been depleted from water use demands, reducing and sometimes eliminating suitable cold-water aquatic habitat. Furthermore, sediments

from runoff after wildfires and from impaired tributaries and poorly maintained roads can fill lakes and streambeds. This leads to obstructed natural stream flows which adversely affect navigation, recreational use, and valuable aquatic habitat. Sediments often smother fish eggs and the aquatic insect larvae upon which fish prey. The mainstem Trinity River below Trinity Dam and the South Fork Trinity River are sediment impaired, and experience some of these effects from sedimentation (EPA 2001).

The desired outcome for the watershed restoration projects under the PEA could counter several climate-related variables that are impairing the Trinity River watershed. Specific desired outcomes include more accessible cold-water aquatic habitats with effective riparian shade and downed wood fostering a cooler microclimate; and a sediment transport regime that retains the key habitat characteristics to promote the survival and sustainability of cold-water aquatic organisms.

Project Purpose and Need

Projects that support habitat conditions of native aquatic species are essential to recover and sustain natural production of salmon and steelhead within the Trinity River watershed. The purpose of the project is to enhance the quality and quantity of accessible cold-water aquatic habitat and water temperature conditions; and to decrease fine sediment loading through watershed restoration activities. The project is needed to improve fish passage and water temperature conditions.

Proposed Watershed Restoration Activity Area

The activities to be analyzed in the PEA, which are described in more detail below, would occur within the Trinity River watershed (Figure 2).

The intent is to include activities described in the TRRP's 2020 biological opinion issued by the National Marine Fisheries Service (NMFS) for the benefit of federally listed Southern Oregon/Northern California Coast (SONCC) evolutionarily significant unit coho salmon.^{4,5}

⁴ The 2020 NMFS biological opinion was issued to comply with Section 7 of the Endangered Species Act, for restoration and rehabilitation activities along the mainstem Trinity River and its tributaries primarily for the federally listed SONCC coho salmon. The biological opinion is available at <https://www.trrp.net/library/document/?id=2472>.

⁵ In terms of USFS lands included within the Proposed Activity Area, the Six Rivers National Forest has been excluded because a similar PEA for aquatic restoration has been completed and can be found at <https://www.fs.usda.gov/project/?project=42051>.

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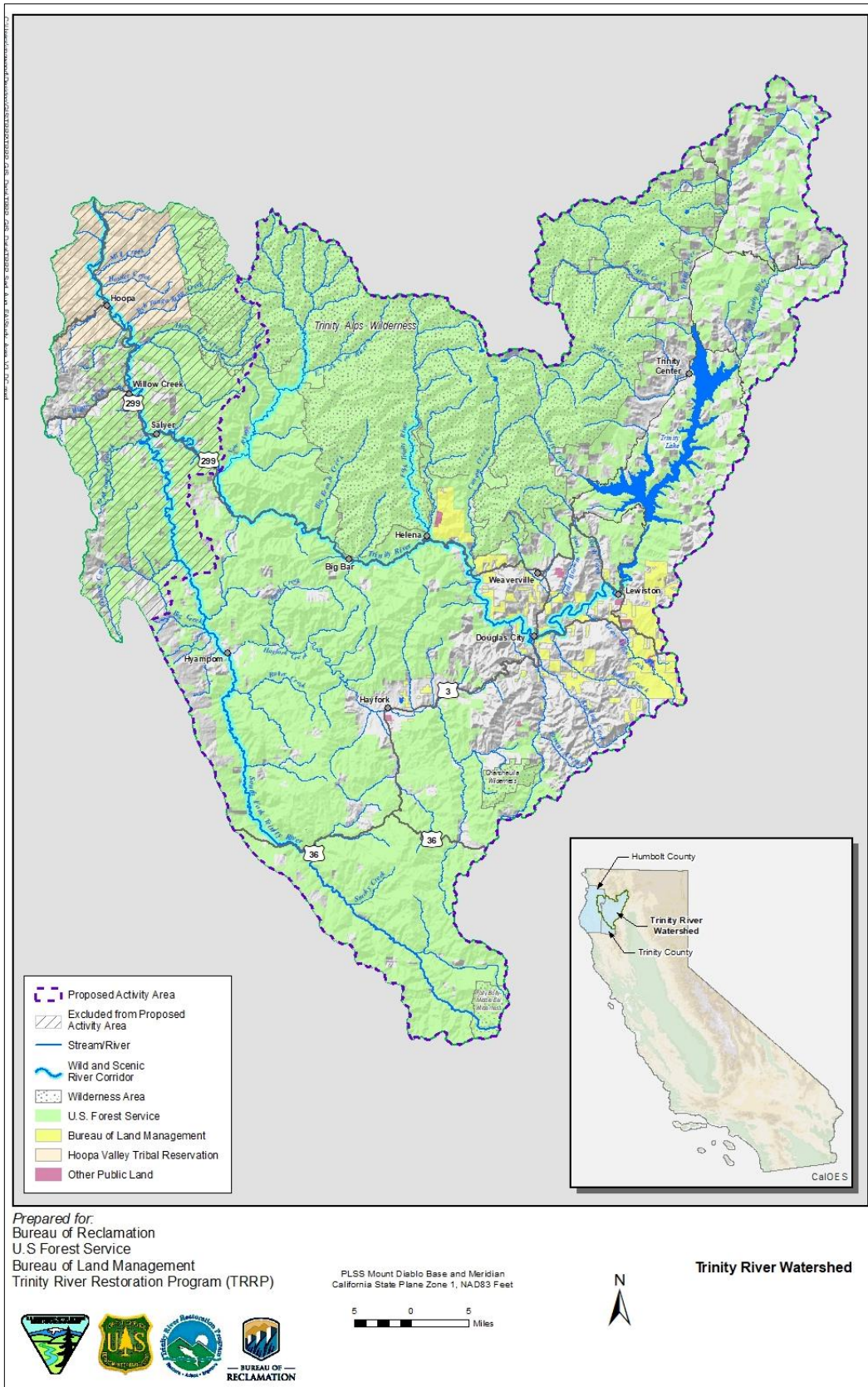


Figure 2. Map of the Trinity River Watershed where restoration activities may occur.

Proposed Activities

The PEA will identify and analyze a suite of instream and riparian restoration activities that are designed to maintain, enhance, and restore instream processes to benefit aquatic species, riparian habitats, and water quality. Activities include instream habitat restoration, native riparian and wetland revegetation/management, fish passage restoration, instream flow restoration, road decommissioning, maintenance, and rehabilitation activities. Figure 3 shows several common restoration activities at Mill Creek.



Figure 3. Watershed restoration activities at Mill Creek, during construction (top and middle) and after construction (bottom).

Instream Habitat Restoration

- **Restoration and enhancement of off-channel and side-channel habitat** – These activities would improve aquatic and riparian habitat for fish and wildlife. Habitat restoration and enhancement actions along tributaries and larger in-channel and floodplain rehabilitation projects include installation of habitat elements such as vegetation, large wood, trees with root wads, in-stream boulders, beaver dam analogs, and spawning gravel. These actions would improve aquatic and riparian habitat for fish and wildlife and/or restore the hydrologic, hydraulic, and biogeochemical functions and processes of streams.
- **Bioengineered bank stabilization** – These activities would reduce input of fine sediment, enhance aquatic and riparian habitat, and improve water quality by integrating vegetation into bank protection.
- **Floodplain restoration** – These activities would improve ecosystem function by creating hydrologic connections between streams and floodplains through such measures as breaching and removal of levees, berm and dike setbacks and hydraulic reconnection.

Native Riparian and Wetland Restoration

- **Removal of nonnative invasive species and revegetation with native plants** – These activities would improve watershed functions such as aquatic and riparian habitat for fish and wildlife. Revegetation may occur as a stand-alone project and/or part of larger watershed restoration activities to reduce upslope erosion from past land management practices, including timber harvest, mining, and road construction. Recurring wildfire also contributes to fine sediment and erosion reaching downslope aquatic habitats. Areas affected by fire would be targeted for revegetation.
- **Establishment, restoration, and enhancement of freshwater wetlands** – These activities would create or improve wetland ecological functions.
- **Establishment, restoration, and enhancement of stream and riparian habitat and upslope watershed sites** – These activities would create or restore the functions of streams and riparian areas, including upslope watershed sites that could contribute sediment to streams or disrupt floodplain and riparian functions.
- **Riparian vegetation restoration** – These actions would restore species composition, structural diversity, and resilience to disturbances. Riparian vegetation helps to maintain shade and promote large woody debris recruitment. Where existing vegetation exceeds riparian needs and is deemed hazardous (i.e., fuel, dead or dying vegetation near road) or adversely impacts desired conditions (such as conifers encroachment on hardwoods or riparian vegetation), selective vegetation removal may occur. Removed vegetation would be retained primarily for aquatic habitat support (i.e., large wood structures), erosion control, and soil amendment (e.g., mulching).

Fish Passage Restoration

- **Improvements to stream crossings and fish passage** – These activities would improve upstream and downstream habitat connectivity and allow movement by fish and other species by promoting sustainable stream function. Activities associated with restoring fish passage include improving road crossing (e.g., culverts or bridges) and removal and/or retrofitting barriers (e.g., small dams and diversions).

Instream Flow Restoration

- **Removal of small dams, diversions, flood gates, pilings, and other in-water structures** – These activities would improve circulation, flow, and water quality primarily by removing outdated in-stream structures.
- **Water conservation projects** – These activities would reduce low-flow stream diversions on tributary streams through the installation of features such as off-stream storage tanks and ponds and off-channel infrastructure. New systems may include the installation of slow flow systems including trickle fill, solar, and ram pumps; and full forbearance systems to eliminate stream withdrawal during the lowest flow periods. Project activities may include water conservation and efficiency outreach; monitoring to determine low flow thresholds; and designing, permitting, and implementing individualized water conservation systems.

Road Decommissioning, Maintenance, and Rehabilitation Activities

- **Road maintenance activities** – These activities would include work that results in insignificant or discountable effects on coho salmon habitat. Activities may include grading, rocking, and clearing of drainage structures on existing roads. Road-cut, fill-slope, fine sedimentation, and stream channel erosion from aging infrastructures and practices have resulted in poorly maintained roads and are contributing to deterioration of aquatic habitats.
- **Road rehabilitation** – These measures would include replacing undersized culverts with new culverts or bridges capable of accommodating a 100-year storm. Activities would include out sloping, rocking, energy dissipaters, and the addition of new drainage structures to reduce the accumulation of water in inboard ditches.
- **Road decommissioning** – These actions would remove stream-crossing structures, culverts, and Humboldt crossings. Depending on slope, soil type, and other factors, activities could also include reshaping, ripping, seeding, and mulching the road surface. Measures to minimize impacts to aquatic species for road-related work would include working in dry conditions or in isolated waters.

Potential Effects

The Public Draft PEA will analyze potential effects to resources, such as:

- Temporary water turbidity increases during restoration activities
- Temporary disturbances to vegetation and aesthetic values at restoration sites
- Effects on cultural resources and historic properties
- Effects on the aquatic environment and riparian habitat
- Other effects on resources identified during analyses and scoping

Decision to Be Made

Each federal agency's responsible official will sign and issue a separate NEPA decision that is specific to lands being managed, the funding for the potential project, and/or the areas of responsibility under their jurisdiction. The responsible officials will decide whether to implement the proposed action, implement an alternative action that meets the purpose and need, or take no action.

How to Participate in the Scoping Process

You are invited to participate in the Trinity River Watershed Restoration Project PEA by providing comments during the public scoping period. If you have information or analysis that you feel the agencies may not be aware of or have issues (points of dispute, debate, or disagreement) regarding the proposed activities, please send these comments in writing to the address listed below. The agencies will consider all issues brought forward and determine if the proposed action should be adjusted or other alternatives be developed.

Comments received in response to this solicitation, including names and addresses of those who comment, will be part of the public record for this proposed action. Comments submitted anonymously will be accepted and considered; however, anonymous comments will not allow the agencies to provide the commentor with subsequent environmental documents.

To ensure your comments can be fully considered by the agencies, please provide all comments by the close of business on December 5, 2022.

- Send your comments via mail to:

Brandt Gutermuth
C/O TRRP
P.O. Box 1300
Weaverville, CA 96093

Or send your comments via email to:

info@trrp.net.

- For all submittals, please include "*Watershed Restoration Programmatic EA*" in the subject line with the following information:
 - Your name and address (telephone number and email address are also suggested).

- Project-specific comments about the proposed action. Please include supporting information that would help identify issues, develop alternatives to respond to those issues, or predict the environmental effects of the proposal.
- A public scoping meeting will be held, and can be attended in-person or virtually, on Thursday, November 17, 2022. Details about the meeting and how to participate are available on the project website: <https://www.trrp.net/restoration/watershed-activities/watershed-ea/>.
- Your input will be used as a part of our scoping process to help identify issues and frame the analysis.
- The Draft PEA will be advertised and available for review in the Fall of 2023. Proposed Project Schedule

Project Information and Updates:

<https://www.trrp.net/restoration/watershed-activities/watershed-ea/>

Public Scoping:

November 4 – December 5, 2022

Public Scoping Meeting

Thursday, November 17, 2022

Draft PEA for public comment:

Fall 2023

Final PEA and Decision:

Winter 2023/24

Proposed implementation:

Watershed restoration projects would be implemented with site specific surveys and compliance for individual projects tied to the PEA.



Works Cited

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- Hilberg, L.E., W.A. Reynier, and J.M. Kershner. 2019a. *Mixed Conifer and Ponderosa Forests: Northern California Climate Change Vulnerability Assessment Synthesis*. EcoAdapt (Bainbridge Island, WA). <https://www.cakex.org/documents/mixed-conifer-ponderosa-forests-climate-change-vulnerability-assessment-northern-california>.
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- Isaak, D.J., C.H. Luce, D.L. Horan, G.L. Chandler, S.P. Wollrab, and D.E. Nagel. 2018. "Global Warming of Salmon and Trout Rivers in the Northwestern U.S.: Road to Ruin or Path Through Purgatory?" *Transactions of the American Fisheries Society* 147 (3): 566-587. <https://doi.org/10.1002/tafs.10059>.
- Isaak, D.J., S. Wollrab, D. Horan, and G. Chandler. 2012. "Climate Change Effects on Stream and River Temperatures Across the Northwest U.S. from 1980–2009 and Implications for Salmonid Fishes." *Climate Change* 113: 499-524. <https://doi.org/10.1007/s10584-011-0326-z>.
- U.S. Environmental Protection Agency (EPA), Region IX. 2001. *Trinity River Total Maximum Daily Load for Sediment*. <https://archive.epa.gov/region09/water/archive/tmdl/trinity/finaltrinitytmdl.pdf>.