BUREAU OF
RECLAMATION

Finding of No Significant Impact

Trinity River Variable Flow Project

CGB-EA-2024-011

Staff of the Trinity River Restoration Program office (TRRP) of the U.S. Bureau of Reclamation (Reclamation) have found that the TRRP's Variable Flow Project would have no significant impact on the human environment. This FONSI was developed by the U.S. Bureau of Reclamation in collaboration with the Yurok Tribe and the Hoopa Valley Tribe.

The finding is supported by the analysis disclosed in the Environmental Assessment (EA) of the same title, which was completed in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended, Council on Environmental Quality's (CEQ) Regulations (40 CFR Parts et seq.), and Department of Interior Regulations (43 CFR Part 46). For the purposes of NEPA, the EA portion is tiered to the 2000 Trinity River Mainstem Fishery Restoration Environmental Impact Statement (Trinity River FEIS).

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Background and Need

The U.S. Bureau of Reclamation (Reclamation) completed the Trinity River Division (TRD) of the Central Valley Project (CVP) in 1964, blocking the passage of salmonids and lamprey to habitat upstream of Lewiston Dam and restricting anadromous fish to habitat downstream. The TRD also eliminated coarse sediment transport from over 700 square miles of the upper watershed. Trans-basin diversions from Lewiston Lake diminished annual flows by up to 90 percent and altered the hydrologic regime of the Trinity River. The consequences of diminished flows included encroachment of riparian vegetation, the establishment of riparian berms, and changes in alluvial processes at various locations along the river as far downstream as the North Fork Trinity River. These geomorphic changes resulted in a decrease in the diversity of species and age classes of riparian vegetation along the river, impaired floodplain function, and adversely affected fish habitat.

In 1994, the U.S. Fish and Wildlife Service (USFWS), as the lead agency for NEPA, and Trinity County, as the lead agency for the California Environmental Quality Act (CEQA), began the NEPA/CEQA process for developing the Trinity River Mainstem Fishery Restoration Environmental Impact Statement (EIS)/Environmental Impact Report (EIR). The 2000 Record of Decision (ROD) for the Trinity River Mainstem Fishery Restoration Final Environmental Impact Statement (Trinity River FEIS) (December 19, 2000; USDI 2000) directed Reclamation and the USFWS to implement the Flow Evaluation Alternative, coupled with additional watershed protection efforts (described in the Mechanical Restoration Alternative), as the Preferred Alternative identified in the FEIS/EIR to restore the Trinity River's anadromous fishery. Through the Trinity River Restoration Program (TRRP), the ROD directed Reclamation to restore the Trinity River fishery by implementing a combination of higher variable releases from Lewiston Dam (up to 11,000 cubic feet per second [cfs]), floodplain infrastructure improvements, channel rehabilitation projects, fine and coarse sediment management, watershed restoration, and an Adaptive Environmental Assessment and Management Program. As a project-level NEPA document, the Trinity River FEIS provides guidance for policy decisions associated with managing Trinity River flows, and as a programmatic NEPA document, it provides first-tier support of related mechanical restoration and sediment management actions.

The TRRP, acting under the guidance of the Trinity Management Council (TMC), provides the overall program direction required to implement the 2000 ROD. TMC member agencies include Reclamation, USFWS, National Marine Fisheries Service (NMFS), U.S. Forest Service (USFS), the Hoopa Valley Tribe (HVT), the Yurok Tribe (YT), the California Natural Resources Agency represented by the California Department of Fish and Wildlife

(CDFW) and the California Department of Water Resources (DWR), and Trinity County. In addition to providing technical expertise for the design and review of the rehabilitation sites, the TRRP provides technical and administrative support to the TMC related to both scientific evaluations of the restoration progress and management implementation.

The TRRP is tasked with increasing habitat and river function for all life stages of naturally produced native Trinity River anadromous fish through river rehabilitation projects and dam release management so naturally spawning anadromous fish populations may increase to levels that existed prior to the construction of Lewiston and Trinity dams. Accordingly, there are many factors that influence returning adult salmon populations, such as ocean and in-river harvest and Klamath River and ocean conditions. The TRRP's efforts are largely focused on restoring natural physical processes in the Trinity River to create and maintain high-quality aquatic habitat that provides successful spawning and rearing conditions for salmon and steelhead. Although the ultimate goal remains the restoration of pre-TRD fishery populations from which tribal, sport, and commercial fishers can enjoy meaningful in-river and ocean harvest opportunities, the most immediate metric of TRRP success is the number and size of juvenile salmon and steelhead that emigrate from the Trinity River each year.[1]

Current ROD flow management implementation results in most of the annual water volume being released after April 15, with a baseflow of 300 cubic feet per second (cfs) for seven months of the year (October to April) when streams in the region experience their largest and most variable flow events. During the first half of the water year (October 1 to April 15), the current flow regime releases approximately 20% of the entire water year's total flow. However, without the operation of Trinity and Lewiston dams, approximately 50% of the total flow during the water year would occur between October 1 and April 15. Undammed tributaries to the Trinity River naturally flow higher during winter storm events and as high-elevation snowpack melts in early spring. Thus, natural contributions to the Trinity River from its tributaries often recede by the time the existing ROD flow releases from Lewiston Dam occur after mid-April.

The asynchrony between the current ROD flow releases and the natural variability of free flowing (pre-dam) conditions has cascading impacts on the river's form and ecology, and perhaps the most detrimental of these impacts are to young salmon. Pacific salmon life histories have adapted to the natural seasonal variability of flows for millions of years (Groot and Margolis 1991). The inundation of Trinity River mainstem rearing habitat, including floodplains, side channels, and alcoves constructed by TRRP does not occur until the majority of juvenile salmonids are downstream of the restoration reach (Petros, Pinnix, and Harris 2017). Later in the spring, the unnaturally cold dam releases into the river slow growth of juveniles and delay environmental cues that trigger smolts to outmigrate to the ocean before conditions in the Lower Klamath become too warm to support salmon migration.

The current flow management keeps river conditions unnaturally cold in the spring, which suppresses metabolic rates during the key period of growth for young salmon and other aquatic and amphibious wildlife, including native frogs and turtles. Overall, flows released from Lewiston Dam after April 15 result in cold water that is not synchronized with Trinity River watershed conditions and is unlike the conditions under which native fishes evolved. The Proposed Action is intended as an initial, experimental step to better emulate natural river conditions through flow

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[1] Summary of the TRRP fish outmigration are statistics available at: https://www.trrp.net/restoration/adaptive-management/fish-biology/fisheries-monitoring-and-escapement/.

management.[2]

The thermal regime issue identified by USFWS and HVT in 1999 due to the cold deep-water (hypolimnetic) releases from Trinity Dam has not been resolved through the implementation of restoration releases. In fact, thermal impacts in late spring and early summer now extend farther downstream due to high-magnitude flow releases under current flow management. The Trinity Reservoir currently does not have a temperature control device, which could aid in managing river temperatures. Therefore, cold water releases are an operational reality when implementing variable flows in the Trinity River during the spring and early summer months. While colder water temperatures during the late winter and fall, when adult fish return to the river, support healthy fisheries, temperature suppression during the spring and early summer months can be detrimental to juvenile salmon.

The purpose of the Variable Flow Project is to assess refinement of the timing of restoration flows using the principle of adaptive environmental assessment and management (AEAM. The proposed flow variability experiment activities 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, as mandated by Congress and outlined in the 2000 ROD (USFWS, Reclamation, and HVT 2000).

The EA for the project considered two alternatives: the No Action Alternative (Alternative 1 in the EA) and the Proposed Action (Alternative 2 in the EA). After considering the Variable Flow Project description in Chapter 2 and the analysis of potential impacts in Chapter 3 and Appendix G of the EA, impacts from the Proposed Action would be less than significant pursuant to NEPA. Details concerning these alternatives and other alternatives considered but not carried forward for evaluation are included in Chapter 2.

No Action (Alternative 1)

Under Alternative 1 (No Action alternative) the flow management regime currently implemented under the ROD would remain in place without modification. Section 1 of the Trinity River FEIS Implementation Plan (Stalnaker and Wittler 2000) outlines the methods Reclamation uses to implement the ROD volumes and restoration flows. Reclamation would provide the TMC with a preliminary estimate of the water year classification in early February. The TMC would then formulate a preliminary schedule, or hydrograph, for the instream fishery release to the Trinity River and submit it to Reclamation for operational planning. Final decisions on the designation of the water year type would be based on the April 1 runoff forecast, determined by the Bulletin 120 (B120) 50% exceedance forecast issued by the California Department of Water Resources (DWR).[3] Typically, by April 15 of each year, the TMC would provide a schedule for the instream fishery release from Lewiston Dam for consideration by the DOI co-lead agencies (Reclamation and USFWS). Once approved, Reclamation would operate the TRD to the proposed schedule as close as operationally possible. Under the No Action alternative, Reclamation would continue to provide annual instream flows below Lewiston Dam in accordance with the recommendations of the TMC and Flow Workgroup, as outlined in the Trinity River FEIS Implementation Plan (Stalnaker and Wittler 2000).

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[2] The Proposed Action is based on review and modelling of specific actions that have the potential to provide immediate benefits to fishery resources, as described in Chapter **Error! Reference source not found.** of this EA. Additional flow management actions for the further benefit of fisheries and other resources including recreation would require a more in-depth NEPA review.

[3] The B120 forecast is available at https://cdec.water.ca.gov/snow/bulletin120/

Per the ROD, the total volume of water released from the TRD to the Trinity River will range from 369,000 acre-feet (af) to 815,000 af, depending on the annual hydrology (water year type) determined as of April 1 of each year (see **Error! Reference source not found.** and ROD [**Error! Reference source not found.**]). Based on subsequent monitoring and studies guided by the TMC, the schedule for releasing water daily, according to that year's hydrology, would be adjusted but the annual flow volumes established by the ROD would not change.

Under the No Action alternative, annual water volumes released to the Trinity River from Lewiston Dam would continue to be determined by the projected inflow to Trinity Reservoir for the water year (October 1 through September 30) by the B120 forecast. Each of the five water year types defined in the ROD, from Critically Dry to Extremely Wet, would continue to be determined by the April 1 B120 forecasted inflow and would be allocated a specific water volume, which is commonly referred to as the ROD water volume.

The majority of annual water volume would continue to be released after April 15, and a baseflow of 300 cfs would be maintained for seven months of the year (October 15 until ROD flow initiation that typically occurs around April 15). The annual flow regime would continue to follow this pattern, which is detailed in the Trinity River FEIS.

Proposed Action (Alternative 2)

Under Alternative 2 (Proposed Action), the flow releases from Lewiston Dam would remain within the ROD-authorized water volumes. A hydrograph determined by the TMC and approved by Reclamation and USFWS would continue to be implemented based on the water year determination in April, but the schedule of restoration releases would be expanded so additional winter releases could occur beginning as early as December 15 each water year during the experimental period.

A portion of ROD water volumes would be shifted to the winter period to better mimic natural flow conditions. Variable flow releases would inundate rearing habitats prior to and during fry emergence, reduce cold water suppression in spring and early summer, create seasonally appropriate scour to promote production of prey species and drift foraging opportunities for juvenile fish, and encourage earlier juvenile fish outmigration. A portion of the ROD water would be released during the winter and early spring season in two distinct periods, termed the Flow Synchronization Period and the Elevated Baseflow Period (detailed below). Under the Proposed Action, flows in the Trinity River during summer and winter baseflow periods would not fall below the minimum ROD flows of 450 cfs in summer and 300 cfs in winter, and the volumes to be shifted to the winter and early spring are in addition to the 300 cfs winter baseflow release volume.

Hydrographs used for analysis of the Proposed Action were developed using historic hydrology from water year 2004-2019 (see Appendix F), the decision tree process, and hypothetical hydrograph components created to meet the objectives of the Proposed Action using water volumes that would be made available throughout the Flow Synchronization and Elevated Baseflow Period. ROD water volumes remaining after April 15 were distributed to meet ROD management objectives and the objectives of the Proposed Action. The redistribution of these flows incorporated insights gained through adaptive management, including the benefits to fisheries from shifting scheduled geomorphic peaks earlier and for a shorter duration, and incorporating riparian recession rates to meet ROD objectives through efficient use of remaining volumes.

Flow Synchronization Period

The purpose of the flow action during this period would be to synchronize a high-magnitude dam release with a winter tributary high-flow event to emulate elevated flows that would have occurred in the mainstem prior to dam construction.

Between December 15 and February 15 of each year, ROD water equivalent to 60,000 af would be released from Lewiston Dam when forecasting tools at the U.S. Geological Survey (USGS) mainstem gage above the North Fork anticipates river levels of 4,500 to 12,000 cfs.[4] Reclamation set 6,500 cfs as the maximum average daily flow from Lewiston Dam during this period and determined that 60,000 af was the volume required for a peak of that allowed magnitude to occur when Trinity River FEIS ramping rates for the ascending limb and naturally observed ramping rates on the receding limb were applied.

Following Reclamation's guidelines, the maximum flow released from Lewiston Dam during this period would not exceed 6,500 cfs average daily flow. Under current floodway infrastructure constraints, if the flow forecast exceeds 12,000 cfs at the USGS mainstem gage above the North Fork, the not-to-exceed 6,500 cfs synchronized flow release would not occur until the receding limb of the flow event is predicted to be 12,000 cfs or less at that gage. Synchronizing Lewiston Dam releases to the receding limb of natural tributary runoff events would be a conservative approach that avoids impacts to downstream properties and structures because there would no longer be uncertainty in the peak magnitude of the flow event. Flow magnitude thresholds for flow triggers and releases would be reevaluated as new information becomes available, or floodway infrastructure constraints change.

The peak flow during this period would be synchronized with storm events or "flow triggers," and would not occur if there were no substantial storm events during this period. Analysis of post-ROD water years 2004 to 2019 shows that a flow trigger would have occurred between December 15 and February 15 in six of the 17 water years that were analyzed (see Appendix F).

Elevated Baseflow Period

Between February 15 and April 15, ROD water would be released from Lewiston Dam based on DWR's 90% exceedance B120 water supply forecast, which would prevent the overuse of ROD water should the water year end up being drier than expected. The predictive ability and methodological approach to using the 90% exceedance B120 water supply forecast is further described in Section 0.

Prior to the Elevated Baseflow period, flow components that span the range of February and March forecast options would be developed by TRRP for approval by TMC. The elevated baseflow release schedule would be shared with interested parties on the TRRP website and through other customary avenues of public notification for flow actions including, but not limited to, email listservs, fliers on public bulletin boards, mailers, and social media, shortly after its approval for release by Reclamation.

The TRRP would rely on the Decision Tree to determine the volume of water to release during the elevated baseflow period and the hydrograph component or components for that volume would be implemented. The Decision Tree Elevated Baseflow period process would occur when the DWR's February B120 forecast is posted,

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[4] Information for the current conditions at the North Fork gage, which is located above the junction of the mainstem and North Fork Trinity River, can be accessed at https://waterdata.usgs.gov/ca/nwis/uv?site_no=11526400.

and again when the March B120 forecast is posted. DWR typically posts B120 forecasts about 8 to 10 days after the beginning of each calendar month.

The Decision Tree process would follow this outline:

1. Determine if a Flow Synchronization Period is implemented or not: Did a storm event (flow trigger) occur between December 15 and February 15, which resulted in a minimum discharge of 4,500 cfs at the USGS mainstem gage above the North Fork?

    - If yes, 60,000 af would be released regardless of water year type, so a maximum 6,500 cfs synchronization flow from Lewiston Dam would be timed to occur with tributary runoff. This would trigger Flow Synchronization release.

    - If no, there would be no Flow Synchronization release implemented that year.

2. Determine Elevated Baseflow Period releases in February:

    - If the Flow Synchronization Period was implemented:
        - B120 forecast of Critically Dry or Dry would mean no February release.
        - B120 forecast of Normal would mean a 60,000 af release.
        - B120 forecast of Wet or Extremely Wet would mean a 120,000 af release.

    - If no Flow Synchronization Period was implemented:
        - B120 forecast of Critically Dry or Dry would mean a 60,000 af release.
        - B120 forecast of Normal would mean a 120,000 af release
        - B120 forecast of Wet or Extremely Wet would mean a 180,000 af release.

3. Determine Elevated Baseflow Period releases in March:

    - If the Flow Synchronization Period was implemented:
        - B120 forecast of Critically Dry would mean no additional release would occur.
        - B120 forecast of Dry would mean a 20,000 af release.
        - B120 forecast of Normal could mean an additional 60,000 af release but would be based on whether the Normal winter period allocation of 120,000 af had yet to be met.
        - B120 forecast of Wet could mean an additional release if the Wet winter period allocation of 180,000 af had yet to be met.
        - B120 forecast of Extremely Wet water year forecast would mean an additional release of at least 40,000 af but could result in a higher release to reach the Extremely Wet winter period allocation of 220,000 af.

    - If no Flow Synchronization Period was implemented:
        - B120 forecast of Critically Dry would mean no additional release.
        - B120 forecast of Dry would mean an additional 20,000 af release.

- B120 forecast of Normal could result in an additional 60,000 af release if the Normal winter period allocation of 120,000 af had yet to be met.
- B120 forecast of Wet could mean an additional release if the Wet winter period allocation of 180,000 af had yet to be met.
- B120 forecast of Extremely Wet would mean an additional release of at least 40,000 af but could result in a higher release to reach the Extremely Wet winter period allocation of 220,000 af.

The Decision Tree guides the TRRP on the volume of ROD water available for release, but it can also be considered a balance sheet that ensures the volume shifted during the winter period would represent the March B120 90% exceedance forecast of water year type, and the volume prescribed in the winter period for that water year type each year. In other words, regardless of whether a flow trigger occurs and the Flow Synchronization Period release of 60,000 af is implemented, the overall volume of 60,000 af in Critically Dry, 80,000 af in Dry, 120,000 af in Normal, 180,000 af in Wet, and 220,000 af in Extremely Wet would be shifted to the winter period each year, according to the B120 90% exceedance forecast in March. This flow management action has been designed to safeguard against the possibility that the actual water year determination (made in April each year) ends up being drier than predicted, as the overall volume of water to be shifted to the winter period is considerably less than the ROD volume for that water year type.

Precipitation Event Synchronization Forecasting

The TRRP would use the National Oceanic and Atmospheric Administration's (NOAA) California Nevada River Forecast Center (CNRFC) Hydrologic Ensemble Forecast Service (HEFS), which is deterministic up to five days prior to precipitation events.[5] The CNRFC has generated the HEFS for the Trinity River gage above the confluence of the North Fork Trinity River, at the location where all major tributaries that contribute to flood events in the TRRP restoration reach have entered the river. Information from the CNRFC-HEFS would allow the TRRP to provide Reclamation a 72-hour notice to implement a variable flow synchronization event. The public would be notified at the same time through notices posted on the TRRP's variable flow project page (located at: https://www.trrp.net/restoration/flows/variable-flow-project/) and by emails to interested parties.

Using the B-120 to Predict Water Year Type

Under the Proposed Action and as described in Section 0, winter baseflow increases based on predicted water year type would occur during the Elevated Baseflow period, between February 15 and April 15. Since the implementation of ROD flows in 2004, the February and March 90% exceedance water supply forecast has never overpredicted the observed water year determination.

The available record of February and March B120 90% exceedance forecasts in post-ROD years (2004 through 2020) has produced conservative predictions that tend to skew drier than the implemented water year type for each year (see Table 2 in **Error! Reference source not found.**). Using the B120 90% exceedance water supply forecast to predict water volumes available for elevated base flows after February 15 is a conservative approach that would avoid
"overspending" ROD volumes during the Flow Synchronization or Elevated Baseflow periods because the

[5] Information about the CNRFC-HEFS products can be accessed at https://www.cnrfc.noaa.gov/ensembleProduct.php?id=TRNC1&prodID=4.

forecast is a conservative water year prediction tool.[6]

Under the Proposed Action, after April 15, the remaining ROD water would be released to the Trinity River using the April B120 50% exceedance forecast and the same methodology that currently exists for the scheduling of restoration flows under the ROD, as outlined in the TRFES.

Findings

Both the No Action and Proposed Action alternatives were evaluated in the EA with respect to their impacts in the following issue areas: geomorphology and soils, hydrology and flooding, water quality, fishery resources, vegetation, recreation, and utilities and energy. Based on the following summary of the implementation effects of the Proposed Action (as discussed fully in the EA), there would be no significant impacts to the quality of the human environment during the experimental period; therefore, an environmental impact statement (EIS) or a supplement to the existing EIS is not necessary and will not be prepared.

Geomorphology and Soils, including Geology, Geological Hazards, and Mineral Resources

The Proposed Action would benefit the Trinity River fishery, as sediment that is supplied to the river from tributaries would be more rapidly dispersed downstream to maintain fish migration pathways into and out of the creeks. The increased mainstem flow events that would result from synchronization of restoration releases with natural tributary runoff would increase scour of the active channel to clear pathways for flow through gravels to benefit salmon egg incubation, promote a diverse assemblage of riparian vegetation and river meandering, and increase bedload transport.

Hydrology and Flooding

The Proposed Action would result in a change to the timing of winter, spring, and summer flow volumes. More water would be released in the winter and early spring. The overall volume of water released as restoration flows during the water year from Lewiston Dam, however, would remain the same as the existing conditions. The river flows would not fall below the summer baseflows of 450 cfs and winter baseflows of 300 cfs.

Releases from the Lewiston Dam and therefore the potential for flood hazards would remain within the Maximum Fishery Flow (MFF) limits. There would be no impacts or increases to 100-year flood zone, as the MFF volumes are below the Federal Emergency Management Agency flood hazard area boundaries. Therefore, the Proposed Action would have no effect on flooding in the study area.

Water Quality

Suspended sediment and turbidity would not be substantially higher when compared to the existing conditions. Multiple flow peaks during the winter and spring runoff events from tributaries, combined with restoration

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[6] For example, Table 2 of the Project White Paper (see **Error! Reference source not found.**) shows that the B-120 (90 percent exceedance) often underestimates the April water year determination. This is denoted by the negative values of -1 and -2 in numerous years; -1 in the February 90 percent for 2004, for example, means that a Normal water year was predicted when a Wet water year was implemented. Likewise, in 2006, the February 90 percent predicted a Normal water year, but an Extremely Wet water year was implemented.

releases, would briefly result in increases to suspended sediment and turbidity levels, and may exceed the levels that occur during these same periods of runoff and precipitation under the existing conditions. These increases would be temporary, would mimic natural conditions in a free flowing (pre-dam) environment, and would not pose a long-term impact to water quality in the Trinity River.

Restoration releases would result in warmer Trinity River temperatures earlier in the summer season. Generally, the adult-holding and juvenile-rearing temperature targets are exceeded slightly more under the Proposed Action when compared to the existing conditions. The 450 cfs summer-base flow maintained in the Proposed Action, under most environmental conditions, is adequate to maintain the temperature targets for adult holding at Douglas City. The summer minimum 450 cfs base flow is the same under both alternatives. By shifting a portion of ROD water to the winter period, the Proposed Action would allow nursery areas to wet and begin warming earlier in the season and decrease temperature suppression from cold water dam releases by scaling down the amount of water released during the critical growth period, thus allowing river temperatures to elevate into a juvenile rearing temperature range that is supported by contemporary scientific findings. This would improve conditions for fish growth compared to the existing conditions because the precipitous drop in temperature that occurs with restoration releases at the end of April would be reduced, promoting juvenile fish growth.

Vegetation

Variable flow releases are expected to help scour the channel while also reducing formation of sediment berms along the channel that result in encroachment and simplified channel morphology. More deposition and frequent inundation of the floodplain may allow native riparian species to better compete with less desirable, invasive, and non-native species such as yellow starthistle and Himalaya berry, for establishment in freshly disturbed areas like channel rehabilitation sites.

The Proposed Action generally would increase black cottonwood recruitment, a key indicator species for riparian health, in the 2,000 to 4,500 cfs bank position for targeted years of Normal, Wet, and Extremely Wet water year types when compared to existing conditions. This is important because this specific bank position has the greatest opportunity for successful recruitment to occur due to the availability of space and the relative frequency of inundation. The Proposed Action may also result in increased recruitment opportunity in all water year types for desired species within the 450 to 2,000 cfs bank position, which would allow native riparian species to establish in freshly disturbed areas such as the TRRP's channel rehabilitation sites prior to being outcompeted by non-native species.

Fisheries Resources

Restoration releases would be shifted earlier in the year, resulting in inundation of the floodplains when most juvenile fish are rearing in the restoration reach. This would be especially beneficial near Lewiston Dam where minimal tributary inflow contributes to the Trinity River's discharge. The anticipated effects of this would be more available rearing habitat, as slow water habitat and access to abundant food resources would be more plentiful and available in the inundated floodplain earlier in the year. An increase in habitat capacity within most habitat units of up to 25% would result at flows greater than 500 cfs.

The volume of flow that results from the proposed action during the synchronization and increased base-flow periods would result in floodplain inundation earlier, thus providing habitat for prey species to colonize and food availability for drift foraging earlier in the season. The compounded impacts of increased food availability and warmer temperatures would potentially result in larger fish and earlier outmigration of juvenile fish when

compared to existing conditions. These effects would contribute toward the ROD's objective of rehabilitating the Trinity River's anadromous fisheries.

The Trinity River would experience warmer temperatures earlier in the summer, but degree day exceedances for holding adults at Douglas City in July and early September would only increase by a marginal and not biologically meaningful amount. There would be no change to compliance with the late September target at Douglas City or the October to December target at the North Fork because there would be no change to flows during this period. The effect of warmer temperatures earlier in the year include increased juvenile rearing habitat availability and more rapid juvenile growth resulting from increased availability of food. Warmer temperatures would not only increase prey species abundance, but also the ability of juvenile fish to consume and benefit from increased prey availability. It is expected that the overall result of the Proposed Action's effect on temperature would be larger fish earlier in the season, and the potential of earlier outmigration of juvenile fish when compared to existing conditions.

The Proposed Action would result in increases to juvenile rearing habitat and food availability, and it would influence the river's temperature into a proposed juvenile rearing temperature range that is supported by the best available scientific research, thus encouraging earlier outmigration of juvenile salmon and potentially positively impacting juvenile growth.

Recreation

There would be a discernable effect on the recreational economy or employment in Trinity County. There may be a beneficial effect to the tourist economy as the river's fisheries improve and offer a more robust fishery for recreationists. Employment in the tourism and recreation sector is unlikely to change.

There would be an average annual loss of 7 shore and wade fishing days with lost days between January and April, gained days between May and July, and no changes between August and December. This decrease of 7 shore and wade fishing days between January and April is equivalent to 58 shore and wade fishing trips. The return to the summer baseflow earlier in the season would increase the number of wade fishing days during the late spring and summer months, particularly for the fly fishing only reach immediately below Lewiston Dam. The Proposed Action could result in an annual average increase of 8 boat fishing days, with lost days occurring between January and May, gained days between June and July, and no changes between August and December. This increase of 8 boat fishing days between June and July is equivalent to 48 boat fishing trips.

The near- and long-term benefits to fisheries from this more natural flow regime would result in increased quality of recreational fishing opportunities when compared to the existing conditions. Recreational fishing opportunities would potentially increase over time under the Proposed Action because the project is designed to create productive seasonal habitat for salmon through flooding, food availability through scour and drift, and optimal temperature ranges for different life stages. If runs were restored, fishing opportunities could increase through expanded seasons, increased quotas, and removal of take prohibitions.

Changes to the timing and duration of restoration releases could impact the experience of recreational boaters and boat guides who have grown accustomed to consistent low winter releases from Lewiston dam and higher releases in May and June. The earlier summer baseflow period may impact recreational boating by shortening the duration of the receding limb of the restoration flow releases, thereby impacting the experiences of the proportion of recreational boaters and raft outfitter clients who prefer higher levels during those periods, but not those who enjoy lower flows. Spring flows during the elevated baseflow period would be increased so that a beneficial effect

to recreational boating may occur. Other sections of the river and types of boating (e.g., stand-up paddle boards) may also be desirable during these elevated flows. The elevated baseflow would result in consistent flows in March and April that would fall within the preferred flow range for boaters. While the elevated baseflow falls outside of the primary rafting season, it may provide an expanded boating season for local recreationists and spring season tourists.

Energy and Utilities

Given the unpredictable dynamics of market rates of power, there is no reliable way to predict future impacts of the Proposed Action on the value of generated power. However, based upon comparisons of recent annual power production values, it is likely that the Proposed Action would result in no significant impact to the market value of the energy produced by the Trinity Power Plant. Although minimal power production differences are anticipated, actual revenues would be tracked and analyzed.

Summary

Implementation of the Proposed Action is expected to benefit the Trinity River ecosystem's long-term environmental quality and sustainability with no significant adverse impacts on the environment.

Finding Of No Significant Impact In Accordance With 40 CFR 1501.6

After considering the environmental effects described for the Proposed Action in the Trinity River Variable Flow Project EA and project record, including information received during the 30-day public comment period which began September 17, 2021, and ended October 21, 2021, we have determined that implementation of the Proposed Action would not have significant environmental impacts and would not have a significant effect on the quality of the human environment. Therefore, a supplemental EIS is not needed and will not be prepared.

Based on the documentation in the EA and the project record, I along with the Tribes find that the short- and long-term effects of the Proposed Action as disclosed in the EA are not significant with respect to the affected area and its resources, and would not violate Federal, State, Tribal, or local law or jeopardize public health and safety/welfare or environmental quality. Further, the effects of the Proposed Action, disclosed in Chapter 3, support the finding that it meets TRRP objectives established in the ROD.

The Proposed Action would assist in meeting long-term needs to enhance fish habitat and provide properly functioning river conditions. Although effects considered included those adverse and beneficial, the finding is not biased by the beneficial effects of the action.

Concerning public health and safety, Reclamation would follow procedures for notifying the public of winter and spring restoration releases. All dam releases during the synchronization period would be preceded by a 72-hour notification as described in Section 2.2 of the EA. The public would be notified of restoration releases through notices posted on the TRRP's variable flow project page (located at: https://www.trrp.net/restoration/flows/variable-flow-project/) and by emails to interested parties.

With regard to preventing violation of federal, state, or local law or requirements imposed for the protection of the environment, the project implementation will meet requirements under the ROD, the Endangered Species Act, the Clean Water Act, the Federal Land Protection and Management Act, NEPA, the Clean Air Act, the Wild and Scenic Rivers Act, the National Historic Preservation Act, the Shasta-Trinity National Forest Land and Resources

Management Plan, and the Bureau of Land Management – Redding Field Office Resource Management Plan, as amended.

Implementation Date

The proposed activities in the Variable Flow Project as described above and in Chapter 2 of the EA and as adopted by the TMC in September 2024 will take effect in December 2024 for water year 2025. Similar Winter Flow Variability projects with a Flow Synchronization Period and Elevated Baseflow Period may also be adopted in the next two consecutive water years consistent with this EA subject to the ROD's adaptive management process and approval by the TMC or consistent with the ESA reconsultation and associated decisions for Trinity River Divisions operations (as appropriate).

Contact

For additional information concerning the Proposed Action, contact:

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