

RECLAMATION

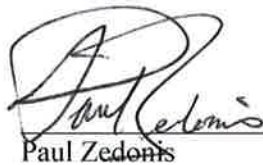
Managing Water in the West

Finding of No Significant Impact

2016 Lower Klamath River Late-Summer Flow Augmentation from Lewiston Dam

FONSI-16-06-NCAO

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Background

In accordance with Section 102(2)(c) of the National Environmental Policy Act of 1969 (NEPA), as amended, the Bureau of Reclamation (Reclamation) has prepared an Environmental Assessment (EA) to examine the potential direct, indirect, and cumulative impacts to the affected environment associated Reclamation's proposal to release supplemental flows from Lewiston Dam to improve water quality and reduce the prevalence and severity of fish disease in the lower Klamath River that could result in a large-scale fish die-off in 2016. The EA is dated August 2016, and is attached and incorporated by reference.

In August and September 2002, a large fall run of Chinook salmon (estimated 170,000) returned to the Klamath River, when flows in the lower Klamath River averaged only 2,000 cubic feet per second (cfs). There was a subsequent outbreak of two deadly fish pathogens, *Ichthyophthirius multifiliis* (Ich) and *Flavobacterium columnare* (Columnaris). This outbreak resulted in a substantial number of premature (prior to successful spawning) adult salmonid deaths. The U.S. Fish and Wildlife Service (USFWS) estimated the number of adult salmonid deaths at 33,500 (Guillen 2003), including an estimated 344 Coho salmon listed as Threatened under the Endangered Species Act (ESA). Predictions of large runs of fall-run Chinook salmon to the Klamath River Basin coupled with drier than average conditions prompted Reclamation to release scheduled augmentation flows in 2003, 2004 and 2012-2015. Evidence of an imminent die-off event prompted Reclamation to release an emergency flow in 2014. In 2015 a preventive base flow and preventive pulse flow were implemented due to concerns of an Ich outbreak, heightened by detections of Ich on adult salmon in late July and into September.

River flows in 2016 are anticipated to be equally low as those experienced in 2002, the year of the large fish die-off. While additional precipitation seemingly improved conditions in Northern California for the winter and spring, the effects of the prolonged drought remain with tributary accretions falling quickly as summer progresses. In order to avert a potential fish die-off event in 2016, Reclamation's Proposed Action includes supplemental releases of up to 84 TAF from Lewiston Dam to augment flows in the lower Klamath, flush parasites present in the system, encourage fish to move upstream, and improve water temperatures for the fish (to reduce stress and thus disease susceptibility).

Alternatives Including Proposed Action

No Action Alternative

Under the No Action Alternative, Reclamation would not release additional flows from Lewiston Dam in late summer 2016 to avoid a fish disease outbreak and subsequent fish die-off. Current late-summer releases from Lewiston and Iron Gate Dams (IGD) would remain consistent with the Record of Decision (ROD) for the Trinity River Mainstem Fishery Restoration (TRMFR) Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) (USFWS *et al.* 2000) and the 2013 National Marine Fisheries Service (NMFS) and USFWS biological opinion

(BiOp) addressing operation of Reclamation's Klamath Project, respectively. Reclamation will provide a pulse flow (eight days of increased flow including ramping up and down) in support of the Yurok Tribe's Boat Dance Ceremony, as is customary in even-numbered years.

Forecasted flow in the lower Klamath River could be approximately 2,000 cfs in the second half of August and through September, which is consistent with the flow rate at the time of the 2002 fish die off.

Proposed Action

The Proposed Action that was provided in the public review draft EA has been modified based on updated hydrological forecasts for flow in the lower Klamath River. Since the release of the public review draft EA, flow rates in the lower Klamath River have been considerably lower than those forecasted in July and used to form the basis for the Proposed Action in the draft EA. This reduction in river flow is attributed to the latent effects of prolonged drought. To account for the lower accretion values and to meet a target flow of up to 2,800 cfs in the Lower Klamath River, the volume of water to release from Lewiston Dam is greater than that presented in the public review draft EA. The Proposed Action now includes the use of up to 84 TAF, as compared to the 65 TAF in the public review draft EA.

The Proposed Action includes three components: a Preventive Base Flow, a Preventative Pulse Flow, and an Emergency Flow. The Emergency Flow component is reserved for use in the event that the preventative components of the action are unsuccessful in preventing a disease outbreak. The Preventative Base Flow component of the Proposed Action consists of a supplemental release of up to 40 TAF from Lewiston Dam over the course of approximately 30 days, beginning on or about August 23, with the intent of meeting and/or maintaining a target of up to 2,800 cfs in the lower Klamath River. The Preventative Pulse Flow component of the action would consist of a supplemental, short term, temporary 10 TAF release from Lewiston Dam over the course of 4 days, to achieve a peak of 5,000 cfs in the lower Klamath River. The Emergency Flow component would consist of a supplemental release of up to 34 TAF from Lewiston Dam over the course of no more than 8 days, beginning on or about September 20. The intent of the Emergency Flow component is to meet and/or maintain a target of 5,000 cfs in the lower Klamath River to achieve the average daily water temperatures of equal or less than 23°C due to a confirmed, continued rate of *Ich* infection.

Comments on the EA

Comment letters and/or emails were received from Pacific Power Division of PacifiCorp (PacifiCorp), San Luis & Delta-Mendota Water Authority together with Westland's Water District (SL&DMWA/WWD), the City of Redding (COR), California Department of Fish and Wildlife (CDFW), Trinity Lake Revitalization Alliance (TLRA), the Hoopa Valley Tribe, Pacific Coast Federal of Fishermen's Associations together with the Institute for Fisheries Resources (PCFFA/IFR), and members of the public, hereinafter referenced as Commenters. Each of these communications presented comments regarding analysis in the EA, or stated

certain opinions regarding the use of Trinity Reservoir water to augment flows on the lower Klamath River in support of adult salmon in 2016. Other statements were made on Reclamation's management of water under its authorities, in general. Reclamation considered these comments in its finalization of the EA assessing a flow augmentation in 2016. Discussion of the substantive issues raised during the review period is provided below.

Need for the Proposed Action

TLRA and SL&DMWA/WWD stated that the need for action is not defensible due to uncertainty regarding the effectiveness of augmentation actions alone in the protection of fish species. Reclamation agrees that a fish die-off is not a defacto result of No Action; likewise, there is not necessarily a direct line of causation between flow augmentation and the lack of a fish die-off in a flow augmentation year. However, the flow conditions in the lower Klamath in 2016 are low and similar enough to those experienced at the time of the 2002 die-off event that there is an elevated risk for disease outbreak and subsequent mortalities of adult salmon, absent a plan to implement protective measures. It is believed by many biologists that, absent the flow augmentation action in the late summer 2014, for example, mortalities of adult salmon would have likely occurred given the incidence and severity of *Ich* infections observed. In addition, the effects of a 2016 die-off on the brood would likely span several years and may be unrecoverable.

TLRA states that “the Klamath DEA contains much speculation and conjecture about outcomes, impacts, and returning fish numbers that lack science and supportive data”. The citation for the forecasted run size – the Pacific Fishery Management Council - was included in the draft EA. Due to the multiple variables involved, and the fact that no fish die-off events were experienced in flow augmentation years, some potential impacts of the No Action alternative are uncertain, as is acknowledged in the EA.

As acknowledged by the consideration of multiple variables as triggers for the Preventative Base flow component, success of the brood is not tied to river flow and temperature alone. Reclamation proposes the action as the one supported by the best available information that supports flow augmentations as a means to prevent a large-scale die-off event. For these reasons, and to be conservative in the use of the water resource, Reclamation continues to examine new information as it becomes available to adjust the implementation flows and volumes to respond appropriately to developing conditions. The long-term planning EIS will review the efficacy, and impacts, of augmentation actions over extended time periods in detail.

TLRA specifically cited the Russian River as a case study demonstrating how “traditional high flows are hurting the fishery, not helping it”. The area of the suggested case study is geographically far removed from the affected area for the Proposed Action and has different system stressors and demands; Reclamation does not find the two systems fully comparable. Also, as indicated in the EA, the augmented flows associated with the Proposed Action are within historical norms. Reclamation acknowledges that the multiple decades of sequential augmentation actions have a theoretical potential to reduce the affected species' natural ability to adapt to an inhospitable environment; this theory will also be analyzed in the long-term planning

EIS. As previously noted, there is insufficient evidence to suggest that flow augmentation alone would guarantee successful prevention of a large-scale fish die off in every augmentation year. However, flow augmentation does impact water volume, temperature and flow rate in the lower Klamath River, which collectively, have been identified as the variables with the most influence on fish disease prevalence and transmissivity.

Adequacy Under NEPA

SL&DMWA/WWD attached comments from prior years' EAs on flow augmentation to their comments on the 2016 draft EA. In their prior years' comments, SL&DMWA/WWD suggest that Reclamation is required to prepare an EIS to analyze the Proposed Action for several reasons, including the fact that Reclamation has prepared EA's for very similar actions in successive years. Commenters suggest that this constitutes a long-term program that must be analyzed in an EIS prior to any additional flows being released. Commenters also suggest that Reclamation understands this because it has begun preparation of an EIS for the Long Term Plan to Protect Adult Salmon in the Lower Klamath River. It is entirely appropriate to assess impacts of the decision before us in an EA, and to prepare a FONSI if approving the action does not constitute a significant impact on the environment. Because Reclamation has yet to complete the long-term EIS, it has prepared an EA to assess the impacts from release of up to 84 TAF from Lewiston Dam in late summer of 2016.

Scope of the Action

The Hoopa Valley Tribe (Hoopa) relayed the opinion that the action was inadequate to produce the desired result. Specifically, the Hoopa made several statements in protest of the adaptive management approach of the 2016 Proposed Action. Of concern to the Hoopa are the volume, duration, and magnitude of water "properly required for the preventative releases." Of specific concern to the Hoopa are that the volumes and timing for releases are not definite and static and, therefore, in their opinion, could not be adequately preventative. The Hoopa also raised a specific concern that, in their opinion, Reclamation is not providing the same weight to the recommendations of the Tribes in comparison to the resource agencies by specifying that the target flow rate for the Preventative Base flow may be less than 2,800 cfs.

Although the resource agencies and tribes are equal members of the Technical Team and provide equally-valued input to the decision, the discretion to implement the action, in part or whole, is Reclamation's responsibility as the water resource manager. The purpose of the EA is to fully assess the potential environmental impacts of the full scope of any such discretionary action that Reclamation may implement. The Hoopa states that the pulse flow in particular should start on a specific date, to align with the historical fall run migration peak. In contrast, CDFW comments that the historical run timing is changing. (See Biological Resources section of FONSI.) Reclamation believes that implementation of this component of the action must continually be implemented (or not) through a criteria-based approach that includes more than just the historical timing of the run. In this regard, the approach provides for an adaptive response to a potential need, which, ultimately, may not arise. In 2015 Reclamation implemented the

Preventive Pulse flow with success using other metrics including whether low levels of infection were present on adult fall run salmon. In addition, Reclamation maintains that the pulse should occur in the first two weeks of September, if it is implemented, which is consistent with the Hoopa's recommendation.

The Hoopa asserts that no decision made based on real-time evidence could be preventative (but is simply reactive), and notes that low, background levels of Ich are always present in the river system.

The event that Reclamation intends to prevent is a large-scale fish die off, rather than any incidence of Ich. A large scale fish die-off does have preliminary indicators when imminent, including the disease confirmation that is part of the Proposed Action. This statement is supported by the 2014 experience, wherein, although the preventative augmentation was unsuccessful in reducing flows and temperatures to targets, the emergency flow that was implemented may have been ultimately successful in preventing the large-scale fish die off.

PacifiCorp, owner and operator of Iron Gate Dam (IGD), stated the opinion that Reclamation is remiss in not preparing for a fish die-off in the upper Klamath River, which a release from Lewiston would not prevent or counter-act, and recommended releases from IGD for this purpose. Although there was preliminary indication that fish in the upper Klamath were experiencing stress in 2014, as indicated in PacifiCorp's letter, to date, large-scale fish die offs in the affected area have been limited to the 2002 event on the lower Klamath River segment on which the EA is focused. The salmon targeted pass through the lower Klamath before migrating above Weitchpec in their migration. Therefore, targeting the lower Klamath has the potential to act as a first response measure in preventing stress to these fish before they enter the area north of the confluence of the Trinity and Klamath Rivers, which is outside of the immediate influence of augmentation actions from IGD and may warm regardless of IGD releases.

Alternatives Eliminated

Flow augmentation of the lower Klamath River via releases from IGD was an additional alternative considered, but ultimately eliminated from further review. PacifiCorp questioned the validity of this elimination based on Reclamation's comparison of the quality of water released from IGD vs. Lewiston Dam. Reclamation's determination was that, while water from IGD would provide some ecological benefit, among other considerations, the cooler water temperatures from Trinity Reservoir provide a more effective means of ameliorating warm water temperatures in the lower Klamath River than water from IGD could provide.

PacifiCorp relayed that, in 2015, temperatures of IGD releases were typically 2 degrees cooler than those of the mainstem Klamath but "not always cooler than those from Lewiston". Reclamation could not confirm this statement because temperatures at the KNK gage were not provided, nor was the point of comparison in the Klamath River below IGD. However, it is generally accepted that Lewiston Dam release temperatures during the summer are typically 50F and those from IGD are closer to 70F. Releases from Lewiston also have a shorter travel time to

the lower Klamath, which may become relevant in the event that the need for the Emergency Flow component of the Proposed Action arises.

Lewiston releases also have demonstrated success in recent years at reducing the water temperatures of the lower Klamath River. PacifiCorp cited 2014 releases from IGD as a demonstration of success in river flow augmentation akin to that of the Proposed Action. However, the releases cited were in May and October 2014. The May 2014 release was not a preventative measure for adult fall run salmon stress as the effects on flow would have diminished before the fall run arrived. The October 2014 release was after the fall run peak. Therefore, this example does not demonstrate the efficacy of IGD releases for this Proposed Action.

With regard to other water quality conditions, PacifiCorp refuted Reclamation's statement that IGD water is more likely to have algae content due to the presence of upstream dams and cited the results of a recent pilot use of an algae control curtain as success in counteracting algae proliferation. The reference to algae proliferation as a potential negative attribute of water originating from IGD was removed from the final EA. However, because Trinity water provides both a temperature and flow benefit to the lower Klamath, in addition to the other rationale listed above, Reclamation maintains its position that, for the intended purpose, releases from Lewiston are superior to those from IGD.

Authority and Water Rights

Some commenters questioned the validity and/or interpretation of Reclamation's established authorities (as stated in the draft EA) to augment flows in support of fish in the lower Klamath. Other commenters stated that Reclamation is required to augment flows, based on the content of the authorities stated in the EA and others. Comments regarding the applicability of Humboldt County's request for 50 TAF of water via Proviso 2 of the 1955 Trinity River Division Act were also received. Most of these comments refuted the use of the 50 TAF, due to its use in the action to benefit the health of fish and wildlife on the river and not for human consumption. Reclamation's position is that it has established authorities to release flows on the Trinity River for both biological protection and consumptive use purposes. However, Proviso 2 is applicable to releases for beneficial use.

TLRA specifically questioned Reclamation's ability to implement the Proposed Action while previous years' actions are under litigation. As with the action proposed, previous year's litigation are specific to the year and the environmental conditions of that year. Further, Reclamation interprets the court's rejection of requests for injunction in previous years as support that Reclamation is acting within its authority.

PCFFA/IFR specifically requested that the 50 TAF Humboldt County request be applied to the following year if not fulfilled in whole in 2016. Proviso 2 of the 1955 Act grants Reclamation the authority to fulfill the 50TAF Humboldt County water request on an annual basis. Whether or

not unfulfilled or unrequested portions of the water reserved for potential request in a given year may be held over to subsequent years will be evaluated in the Long Term Plan EIS.

For a more thorough response and discussion of Reclamation's authority and water rights, see Discussion of Legal Authority for 2016 Late-Summer Lower Klamath Augmentation Flows in Appendix A in the Final EA.

Environmental Justice Analysis

SL&DMWA/WWD and TLRA submitted comments suggesting potential impacts associated with Environmental Justice under the Proposed Action. Trans-basin diversions from Lewiston make up a small fraction of CVP water. However, there are no changes to diversions anticipated as a result of the implementation of the Proposed Action. The potential reduction in diversions in future years is largely unknown at this time but anticipated to only be minor impacts on low-income and/or minority populations (e.g., migrant workers, farm laborers, etc.) who depend on CVP water allocations. Furthermore, the EIS for the Long Term Plan will provide detailed analysis of this subject matter.

Socioeconomic Analysis

COR expressed concern with regard to the lost power generation discussed in Section 4.7 of the EA and provided an estimation of lost revenue of "up to \$4M" for the entire action, in comparison to Reclamation's estimation of a maximum \$1.8M for the preventative components of the Proposed Action alone. Reclamation has replaced the estimation of the maximum potential lost revenue from foregone hydroelectric power opportunities associated with the Preventative components of the action with one for the Proposed Action in full (including the Emergency Flow component) in Section 4.7. The change is in acknowledgement that, although it is not anticipated at this time that the Emergency Flow component will be necessary, its socioeconomic impacts should be assessed. Reclamation's estimation of the associated maximum lost revenue for the full action is approximately \$4.6M, based on the same metrics used to derive the \$1.8M for the preventative components of the action in the draft EA. These maximums are conservative. The dollar value of any actual costs associated with the action would be dependent on several other factors and outside influences, as discussed in Section 4.7 of the EA.

COR stated its position that "any additional water released above what was allocated in the Trinity Record of Decision must be compensated for", including the 50TAF request from Humboldt County. Reclamation respectfully disagrees with this assertion. Use of water under either Proviso 1 of the 1955 Trinity River Act (1955 Act) or Proviso 2, under which the Humboldt County's request falls, are limitations on the integration of the Trinity River Division with the Central Valley Project (CVP). The reader is referred to the Appendix A of the Final EA that provides the details of Reclamation's authority to implement the action.

COR specifically expressed concern of the potential for the Proposed Action to generally affect the reliability of water and availability of hydroelectric power in its service area and the timing for compensation for its previous years' lost revenue claims related to lost power generation opportunities. While there could be financial implications related to lost hydroelectric power opportunities, as discussed in Section 4.7 of the EA, COR did not provide Reclamation with information necessary to evaluate COR's general concerns on water service reliability in its communication.

PCFFA/IFR voiced support for the action and attributes the 2002 fish die off and subsequent water resource management actions as indirectly responsible for a 2006 fishery closure that resulted in losses they approximate at \$200M. PCFFA/IFR also voiced the opinion that Reclamation and other Federal agencies should make it a priority to design, fund and implement extended boat ramps at Trinity Lake in order to reduce the potential future impacts of continued Trinity Dam supplemental releases for the Lower Klamath River. As indicated in the EA, boat ramp access is not anticipated to be limited by the 2016 Proposed Action. Long term impacts of similar actions will be assessed in the EIS for the Long Term Plan.

TLRA voiced opposition to the Proposed Action, as well as the Yurok Tribe's Boat Dance Ceremony that is part of the No Action Alternative, stating that water should be held in reserve in Trinity Lake to the benefit of year-round lake tourism (as well as 2017 spring Coho outmigration). TLRA also requested offsets of costs to marinas for moving mooring docks.

Reclamation will not financially compensate business and property owners surrounding Trinity Reservoir for implementation of the Proposed Action. Since Humboldt County has made a request for water under its contract with Reclamation, the release of late summer flows under the Proposed Action would be pursuant to the contract and as directed by Proviso 2 of the 1955 Act. As such, no compensation will be owed to other water or power users for releasing a requested volume to Humboldt County.

Under the Proposed Action minor impacts to water users in the Sacramento River Basin are possible, from potentially reduced CVP allocations. If all three flow components of the Proposed Action were implemented, and if the current severe drought continues, there could be an impact to trans-basin diversions to the Sacramento River Basin in future years. This could in turn reduce allocations to CVP water contractors. However, the level of any such reduction is uncertain due to the lack of accuracy in water supply forecasts, extent of drought conditions, and corresponding operations of the CVP, of which Trinity Reservoir is but one component.

Water Resources

Several commenters voiced preference for water that would be used in the Proposed Action to be held in reserve or used to fulfill other commitments. SL&DMWA/WWD specifically stated that the water "otherwise could have been used to meet CVP purposes, including...legal obligations to deliver water to wildlife refuges and senior water right holders...deliveries to CVP contractors to support farms and cities, and providing water for managing ESA-listed fish species". As

discussed in the EA, the use of the water for this intended purpose will not impact Reclamation's ability to fulfill other legal and regulatory obligations in 2016 or future years, based on End of September water storage and temperature forecasts.

SL&DMWA/WWD stated that Reclamation was unable to meet its legal obligations for minimum deliveries to south-of-Delta wildlife refuges and settlement contractors and south-of-Delta agricultural contractors received a 0% allocation in 2014 and 2015, and infers that these circumstances are a result of the late-summer augmentations or that the augmentations are somehow contributory. The line of causation is misconstrued. The State of California was experiencing extreme drought in the referenced years. In these circumstances, drought emergency procedures mandate reductions in CVP allocations to conserve water. At the same time, drought conditions exacerbate the potential for a fish die-off and increase the need for flow augmentation. However, at the time that the Proposed Action may be implemented, the majority of irrigation water allocated will have already been used. Additionally, any reduction in future allocation is uncertain, as at this time, there are no reliable estimates of the available water supply in 2017 or beyond.

Biological Resources

CDFW relayed the comment: "The Department has observed run timing changes of Chinook salmon at Trinity River Hatchery and potential for increased hybridization between spring and fall Chinook. The biological implications of this have not been fully analyzed; however, we believe it should still rate as a concern." No single-year action is anticipated to have an influence significant enough to affect run timing to the extent that hybridization results. However, multiple similar augmentation actions over several years have the theoretical potential to cause this effect. This concept will be explored in the EIS for the Long Term Plan.

Endangered Species Act Section 7 Compliance

In their prior years' correspondence, SL&DMWA/WWD questioned Reclamation's compliance under Section 7 of the ESA, as well as compliance under the Magnuson-Stevens Act (MSA). Reclamation has complied with Section 7 of the ESA as detailed in Section 5.2 of the EA. Updates were made to Section 5.2 of the final EA to reflect the completion of consultation with NMFS on the potential for effects for Sacramento Valley species.

Findings

In accordance with NEPA, Reclamation has found the release of augmentation flows from Lewiston Dam to the Trinity River in late summer 2016 is not a major Federal action that would significantly affect the quality of the human environment. Consequently, an EIS is not required for the 2016 action, although Reclamation is preparing an EIS to assess the long-term impacts from implementation of similar actions over multiple years. This determination is supported by the following factors:

Water Resources: The Proposed Action will not change water scheduled for trans-basin diversion in 2016. Implementation of the Proposed Action would remove up to 84 TAF from the cold water storage pool within Trinity Reservoir. However, based on modeling results, implementation of the Proposed Action is not expected to have an influence on temperatures of the water released to the Trinity River or that which may be diverted to the Sacramento River in 2016. Therefore, there are no significant impacts to water resources associated with implementation of the Proposed Action in 2016.

If the current severe drought continues, there would be an influence on the quantity of water in Trinity Reservoir available for release as trans-basin diversions to the Sacramento River Basin in future years. This could in turn reduce allocations to CVP water contractors. However, the level of any such reduction is uncertain due to the lack of accuracy in long-term water supply forecasts, uncertainty with regard to the continuance of drought conditions and corresponding modifications of operations of the CVP, of which Trinity Reservoir is but one component, to accommodate these conditions.

In summary, there are no significant impacts to water resources anticipated in 2016 as a result of the Proposed Action. There are no reliable estimates of the available water supply in 2017.

Biological Resources: Experience and observations from past augmentation actions indicate wildlife species that use riparian corridors along the Trinity and Klamath Rivers will not be impacted. Under the Proposed Action, the susceptibility of returning adult fall-run salmonids to diseases that led to the 2002 fish die-off is expected to decrease.

A reduction of up to 84 TAF from the cold water pool in Trinity Reservoir would not jeopardize cold water resources for immediate use in meeting temperature targets in 2016 for both the Trinity/Klamath River Basins and the Sacramento River Basin.

Reclamation reviewed the effects of the Proposed Action on Southern Oregon /Northern California (SONCC) Coho salmon, the only ESA-listed fish species in the Trinity River. The results of temperature modeling indicate the Proposed Action would be protective of the Coho salmon juveniles that may be present. Based on the number and location of potential stranding locations and implementation of conservative ramping rates, the proportion of juvenile Coho that may be affected by the flow rates of the Proposed Action is anticipated to be small and will minimally effect the overall freshwater survival of juvenile Coho. Past augmentation experiences, including the 2014 Emergency Flow release, indicate the overall benefit to Coho as a species from implementation of the Proposed Action outweighs the smaller impact to juveniles.

If the cold water pool is reduced by the 84 TAF of the Proposed Action in full and the drought persists, thermal protection of Coho salmon in the Trinity River and winter-run Chinook in the Sacramento River Basin could be negatively impacted in future years. The potential for this impact is uncertain due to the lack of accuracy in long-term water supply forecasts, uncertainty with regard to the continuance of drought conditions and corresponding modifications of

operations of the CVP, of which Trinity Reservoir is but one component, to accommodate these conditions.

On August 24, 2016, Reclamation received concurrence from NMFS that the effects of the Proposed Action are within the effects evaluated for the RPA Action I.2.4.C in 2009 NMFS' BiOp and the 2016 Plan and will neither result in exceedance of incidental take in the 2009 NMFS BiOp, nor jeopardize the continued existence of listed species or destroy or adversely modify their designated critical habitats.

Reclamation has not identified any adverse effects to essential fish habitat. Therefore, consultation per the Magnuson-Stevens Act (MSA) for the Sacramento River species is not needed. MSA consultation will be a component of the ongoing consultation with NMFS on the Coho salmon for the Trinity Basin.

In summary, there are no significant impacts to biological resources associated with the Proposed Action for 2016. No significant impacts are reasonably anticipated in 2017 from implementation of the Proposed Action.

Indian Trust Assets: Implementation of the Proposed Action is anticipated to have a positive impact on the fishery as an Indian Trust Asset. No impacts to other Indian Trust Assets are anticipated.

Environmental Justice: Implementing the Proposed Action will not disproportionately affect minorities or low-income populations and communities (EO 12898). Positive effects and potential minor negative impacts to low-income and/or minority populations are anticipated under the Proposed Action. Low-income and minority populations in the Trinity and Klamath River Basins are anticipated to be positively impacted by reducing the risk of a large-scale fish die-off, while similarly disadvantaged populations in the Sacramento River Basin may experience a slight negative impact if trans-basin water diversions are reduced and allocations change in future years. This negative impact is possible, but unlikely and subject to forecasts that are largely unreliable beyond this winter. Thus no significant negative impacts to environmental justice are anticipated from implementation of the Proposed Action.

Socioeconomic Resources: The Proposed Action is expected to have a positive socioeconomic impact on some and may have a slight negative impact on others. Populations who rely on fisheries are anticipated to see a net positive impact under the Proposed Action. There may be a minor impact to the communities surrounding Trinity Reservoir from lowering water elevations and boat ramp access, which becomes compounded if the full 84 TAF is used and the drought persists. However, the impacts to future years remains uncertain due to the lack of accuracy in long-term water supply forecasts, uncertainty with regard to the continuance of drought conditions and corresponding modifications of operations of the CVP, of which Trinity Reservoir is but one component, to accommodate these conditions. This is not anticipated, and the impacts would be minor. The Proposed Action will not change water scheduled for trans-

basin diversion in 2016. Therefore no significant socioeconomic impacts are expected as a result of implementation of the Proposed Action.

Power Generation: There is no anticipated impact on power generation from implementation of the Proposed Action in 2016; the use of the auxiliary bypass is a determination made independent of the Proposed Action. While there could be some lost power generation in 2017 as a result of the augmentation flows, the effects are complex and difficult to accurately determine and quantify, because they are dependent on future conditions, including the particular refill patterns at Trinity Reservoir, whether or not safety-of-dams releases occur at Trinity Dam in 2016, and Shasta Reservoir operations.

Global Climate: No greenhouse gases (GHG) would be generated as a direct result of implementation of the Proposed Action. If flow augmentation reduced hydropower generation in 2017, and power users purchased entirely hydrocarbon generated power instead, there would be associated GHG. Assuming 50 or 84 TAF of water is used for flow augmentation, tens of thousands of megawatt hours of power generation may be foregone at some time in the future. However, the magnitude and timing of the potential additional CO₂ equivalent is dependent on the alternate power source selected and therefore unknown, as are the associated effects on Global Climate. The effects to Global Climate from the Proposed Action are therefore too speculative to warrant further analysis.

Cultural Resources: The Proposed Action has no potential to affect historic properties (40 CFR 1508.27(b)(8)). The Proposed Action would allow for water releases through existing facilities. No new construction, ground disturbing activities, or changes in land use would occur. Since the Proposed Action has no potential to affect historic properties, no cultural resources would be impacted as a result of the Proposed Action.

Indian Sacred Sites: The Proposed Action will not limit access to, and ceremonial use of, Indian Sacred Sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (EO 13007 and 512 OM 3). Flow increases to accommodate the Yurok Tribe's Boat Dance Ceremony are incorporated into the No Action Alternative. The Proposed Action would not inhibit access to or ceremonial use of an Indian Sacred Site, nor would the Proposed Action adversely affect the physical integrity of such sacred sites.

Floodplains: The Proposed Action will not significantly impact flood plains (EO 11988). No construction, dredging or other modification of regulated water features would be associated with the Proposed Action. No permits under the Clean Water Act would be needed. The Proposed Action only includes providing controlled reservoir releases that are within the normal operational range. Floodplains would not be impacted by the Proposed Action.

Land Use: There are no changes in land use anticipated from implementation of the Proposed Action. The magnitude and timing of the augmentation flows are well within the range of historic flows observed during this time of the year from past augmentation actions that did not

influence land use activities. As in prior years, no changes in land use near the rivers will be required as a result of changing water levels, with the potential exception of one boat ramp. An alternate boat ramp located in close proximity could accommodate the access needs. There are no anticipated impacts to Land Use associated with the Proposed Action.

Public Health and Safety: The Proposed Action will not significantly affect public health or safety (40 CFR 1508.27(b)(3)). Reclamation would issue advisories to maintain public safety during times of significantly increased flow prior to implementation of the Emergency and/or Preventive Pulse Flow releases.

Cumulative Impacts: The Proposed Action will not have significant cumulative impacts (40 CFR 1508.27(b)(7)). Reclamation reviewed the cumulative impacts for the Proposed Action for several resource areas including Water Resources, Biological Resources, Indian Trust Assets, Environmental Justice, Socioeconomic Resources. There were no significant cumulative impacts identified for these resource areas.

Additionally, Reclamation has determined that the impacts of implementing the 2016 Proposed Action on future years is too speculative to consider further. This is based on the uncertainty and inaccuracy of accuracy in long-term water supply forecasts, and uncertainty with regard to the continuance of drought conditions and corresponding modifications of operations of the CVP, of which Trinity Reservoir is but one component. The cumulative effects of multiple similar augmentation actions will be assessed in detail in the EIS for the Long Term Plan.

Other Considerations

- The Proposed Action will not significantly impact natural resources and unique geographical characteristics such as historic or cultural resources; parks, recreation lands, and refuges; wilderness areas; Wild and Scenic rivers or rivers placed on the nationwide river inventory; national natural landmarks; sole or principal drinking water aquifers; prime and unique farmlands; wetlands (Executive Order (EO) 11990); national monuments; and other ecologically significant or critical areas (40 CFR 1508.27(b)(3) and 43 CFR 46.215(b)). Although the Trinity is a Wild and Scenic River, the release of flows from Lewiston Dam would be within the normal release flow range of water levels along the Trinity River and would not exceed the historic range of flows.
- The Proposed Action will not violate Federal, state, tribal or local law or requirements imposed for the protection of the environment (40 CFR 1508.27(b)(10)).