

RECLAMATION

Managing Water in the West

Finding of No Significant Impact

Implementation of Klamath Project Operating Procedures 2019-2024


Oregon and California

2019-FONSI-007

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Introduction

In accordance with section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969, as amended, the Bureau of Reclamation (Reclamation) has prepared an Environment Assessment (EA) to examine the potential direct, indirect, and cumulative impacts to the affected environment associated with Reclamation’s proposal to implement the Klamath Project (Project) operating procedures from April 2019 through March 2024. The proposal is intended to provide certainty regarding operation of the Project consistent with contractual and/or water right delivery obligations while complying with Federal laws, including the Endangered Species Act (ESA). This Finding of No Significant Impact (FONSI) is supported by Reclamation’s EA Number 2019-EA-007, which is attached and incorporated by reference.

Background

In 2017, Reclamation formally reinitiated consultation with the National Marine Fisheries Service (NMFS) and the United States Fish and Wildlife Service (USFWS; collectively the Services) pursuant to section 7(a)(2) of the Endangered Species Act (16 U.S.C. §1531 et seq.) on the continued operation of the Project. Reclamation reinitiated consultation in response to consecutive years of drought and the 2014 and 2015 exceedance of incidental take of coho salmon – per the metric used in the incidental take statement accompanying the 2013 Biological Opinions (2013 BiOp). Due to the interconnectedness of Klamath River flows and Upper Klamath Lake water surface elevations with operation of the Project, Reclamation reinitiated consultation with both Services.

Reclamation’s Klamath Project reinitiation of consultation (ROC) consisted of an iterative hydrologic modeling effort that assisted in the development and evaluation of the potential effects of Reclamation’s Proposed Action to implement a modified water management approach for Project operations. The Proposed Action Alternative was developed with the intent to avoid jeopardizing the continued existence of any federally-listed species or destroy or adversely modify their critical habitat, protect tribal trust resources, and meet annual Project irrigation demands to the extent feasible. Reclamation provided a *Final Biological Assessment on the Effects of the Proposed Action to Operate the Klamath Project from April 1, 2019, through March 31, 2029*, to the Services on December 21, 2018, and associated addenda dated February 15, 2019, and March 25, 2019, (modified 2018 Biological Assessment [BA]). On March 29, 2019, the Services completed the ROC effort by issuing separate, but coordinated biological opinions concluding that Reclamation’s proposed water management approach, as described in the modified 2018 BA, is not likely to jeopardize the continued existence or destroy or adversely modify the critical habitat of Lost River and shortnose suckers and coho salmon.

Alternatives Evaluated Including Proposed Action

No Action Alternative

Under the No Action Alternative, Reclamation’s water management approach would continue to operate the Project consistent with the 2013 BiOp operating procedures.

UKL Management

The No Action Alternative contains operational criteria and conditions intended to fill UKL during the fall/winter period (October 1 through the end of February), while meeting Klamath River flow requirements and providing available water for irrigation and refuge needs. During the spring/summer period (March 1 through October 31), water storage in UKL is managed based on a target end of September water surface elevation (equating to a water storage volume, called UKL Reserve). In addition to the UKL Reserve, the No Action Alternative includes end of month “UKL threshold elevations” to be met year-round. The monthly threshold elevations result in an annual UKL hydrograph that provides for the seasonal biological needs of ESA-listed suckers. If UKL water surface elevations drop below the thresholds, or are projected to, Reclamation will take actions within its discretion to attempt to meet the end of month threshold elevations.

Klamath River Management

During the fall/winter period, flow targets in the Klamath River at Iron Gate Dam (IGD) are formulated through a combination of inflows to UKL from the Williamson River, UKL refill requirements, and accretions between Link River Dam (LRD) and Iron Gate Dam (IGD). During the spring/summer period, a volume of water in UKL (called the Environmental Water Account or EWA) is identified for meeting Klamath River flow requirements. The EWA is calculated monthly from March through June based on current hydrologic conditions and Natural Resource Conservation Service’s (NRCS) inflow forecasts. Under the No Action Alternative, the calculated EWA is no less than 320,000 acre-feet (AF), and increases based on observed and projected hydrologic conditions. The daily flow schedule for EWA distribution during the spring/summer period is based on the remaining EWA, flows in the Williamson River, and accretions between LRD and IGD.

Klamath Project Supply from UKL and the Klamath River during the Spring/Summer Period

The maximum Project Supply, or water available from UKL for irrigation purposes through the Project’s five main diversion points during the spring/summer period, is 390,000 AF (with additional water available from the Lost River Diversion Channel [LRDC¹]). Initial spring/summer Project Supply allocations are calculated in March based upon current hydrologic conditions and the NRCS UKL inflow forecast for March through September. This information is used to calculate the UKL Reserve, the volume for release to the Klamath River (EWA), and remaining Project Supply (available for diversion to the Project after the other two requirements are met). EWA, UKL Reserve, and Project Supply are recalculated in April, May and June. The April 1 Project Supply establishes the minimum Project Supply for the spring/summer period; however, Project Supply can increase in May and June if hydrologic conditions and UKL inflow forecasts improve.

Lower Klamath National Wildlife Refuge (LKNWR)

During the spring/summer period, Project Supply can be made available to LKNWR, and is based on a percentage of the remaining Project Supply during the months of August through November. The remaining Project Supply is calculated on the first day of each month during the

¹ Under the No Action Alternative, during the spring/summer period, water diverted from the Lost River and conveyed through the LRDC is available for Project diversion and irrigation use and does not count against Project Supply from UKL.

August through November time period, and the percentage of the remaining Project Supply that can be delivered to LKNWR in that month varies based on the month and the volume of remaining Project Supply. LKNWR can also receive non-Project Supply from June through November if the elevation of UKL exceeds certain threshold values.

Proposed Action

The water management approach of Reclamation's Proposed Action Alternative consists of four elements considered material changes from historic operations and the No Action Alternative:

- 1) *A reduced cap on Project Supply available from UKL.* The maximum Project Supply available for diversion from UKL during the spring/summer period (March 1 through November 30) through the Project's five main diversion points (A Canal, Station 48, Miller Hill Pumping Plant, North Canal, and Ady Canal) is set at 350,000 AF². Project Supply is calculated in March as the quantity of water remaining after the UKL water storage requirements (i.e., end of September target elevation) and Klamath River flow requirements (EWA) are determined. UKL Supply, EWA, and Project Supply are recalculated each month from April through June using the most recent monthly NRCS inflow forecast.

Should the April calculated EWA allocation be greater than 400,000 AF (407,000 AF in 2020, 2022³) and less than 576,000 AF, the calculated Project Supply is reduced by 10,000 AF in order to produce additional Klamath River flows in May and June for coho salmon. The April calculated Project Supply establishes the minimum Project Supply for the spring/summer period. Project Supply is recalculated again in May and June, and while it cannot decrease below the April allocation, it may increase.

During the spring/summer period LKNWR can receive a portion of the available Project Supply from UKL, consistent with Reclamation's contractual and other legal obligations. There are no formulaic conditions for determining what portion of the available Project Supply is available for delivery to LKNWR, though it will likely range from 0 to 30,000 AF.

- 2) *Inclusion of forced surface flushing flows in the Klamath River.* To address ESA-listed coho disease concerns identified during implementation of the No Action Alternative between 2013 and 2016, and based upon an independent science review of *Measures to Reduce Infection of Klamath River Salmonids: A Guidance Document* (Guidance Document; Hillemeier et al., 2017) and other available information, the Proposed Action

² As addressed in Reclamation's addendum to the modified 2018 BA dated March 25, 2019, to properly account for Project-associated diversions from the Klamath River other than Station 48, Miller Hill Pumping Plant, North Canal and Ady Canal, the Project Supply (water available from UKL for irrigation) would be initially reduced by 7,436 AF from the Project Supply calculations after March 1, April 1, May 1, and June 1. To the extent Reclamation determines and can adequately verify that actual irrigation deliveries at Project-associated points of diversions other than Station 48, Miller Hill Pumping Plant, North Canal and Ady Canal are or will be less than 7,436 AF, the verified volume will be added back to the available Project Supply. For analysis purposes in the EA, Project Supply under the Proposed Action Alternative reflects the anticipated deduction of 7,436 AF from the Project Supply (e.g., 350,000 AF - 7,436 AF = 342,564 AF).

³ To account for the Yurok Tribe's boat dance ceremony.

provides for, under certain hydrologic conditions, a flushing flow of 6,030 cubic feet per second (cfs) or greater for 72 hours in the Klamath River downstream of IGD between March 1 and April 15. The flushing flow will be followed by appropriate ramping of river flows at IGD. The forced surface flushing flow under the Proposed Action is expected to utilize approximately 50,000 AF of EWA and occurs even in dry water years.

- 3) *Use and Accounting of Flows from the LRDC and Klamath Straits Drain (KSD)*. The Proposed Action Alternative makes both LRDC and KSD flows available for diversion within the Project during the spring/summer period. The water from these sources during this period is available for diversion to the Project and is not counted against the Project Supply from UKL. Over the 36-year POR, the LRDC contributes an average of 47,000 AF (range 1,000 - 88,000 TAF) during the spring/summer period, while the KSD contributes an average of 25,000 AF (range 1,000 - 34,000 AF).

Water from the LRDC and the KSD to the Klamath River during the spring/summer period that is not diverted by the Project is accounted for as a “UKL Credit”, which reduces the releases from Link River Dam needed to meet IGD flow targets and buffers UKL elevations against uncertainties associated with NRCS forecast error. The UKL credit can only be accrued from March 1 through September 30 during controlled flow conditions (i.e., not during flood control operations).

- 4) *Change in Operating Elevations of Tule Lake Sump 1A (TLS1A)*. TLS1A, part of the Tule Lake National Wildlife Refuge, receives natural runoff from tributary sources and irrigation return flows from Project lands and facilities. Minimum elevations for TLS1A have been established in coordination with the USFWS to protect refuge resources and ESA-listed Lost River and shortnose suckers. Under the Proposed Action Alternative Reclamation, through its contract with Tulelake Irrigation District, will operate TLS1A above a year-round minimum elevation of 4,034.0 feet.

Comments on the EA

Comment letters and/or emails were received from the following: (herein referred to as the “Commenters”): State President of the Oregon Hunters Association, the Quartz Valley Indian Reservation, the Hoopa Valley Tribal Council, several enrolled members of The Klamath Tribes, the Karuk Tribe, Save California Salmon, the Klamath Water Users Association, Klamath Irrigation District, Pacific Power, Siskiyou County Board of Supervisors, USFWS Klamath Basin National Wildlife Refuge Complex, WaterWatch of Oregon, on behalf of the Audubon Society of Portland, and Oregon Wild, the Theodore Roosevelt Conservation Partnership, Oregon Department of Fish & Wildlife, Earthjustice on behalf of Yurok Tribe, Pacific Coast Federation of Fisherman’s Associations, and the Institute for Fisheries Resources, Western Environmental Law Center on behalf of Water Climate Trust, California Waterfowl Association on behalf of Grassland Water District, Oregon Hunters Association, Cal-Ore Wetlands & Waterfowl Council, Ducks Unlimited, and Audubon California, Siskiyou County Water Users Association, and other members of the public.

These commenters presented a range of comments regarding analysis in the EA, and/or statements of opinion on implementation of Reclamation’s Proposed Klamath Project operating

Finding of No Significant Impact – Klamath Project Operating Procedures - 2019-FONSI-007

procedures from 2019 - 2024. Other comments were made on Reclamation’s overarching legal authority to manage Project water supplies relative to state water rights, federal reserved tribal trust fishery and water rights, among others. Reclamation considered these comments in its finalization of the EA. Discussion of the substantive issues raised in the comments submitted during the public review period is provided below:

Adequacy under NEPA—*Commenters raised concerns that the EA is deficient in its level of analysis on the Proposed Action Alternative’s impacts on the human environment. Preparation of an environmental impact statement was requested to ensure a more thorough evaluation of the Proposed Action Alternative impacts on the human environment:* Reclamation has determined it is appropriate to assess impacts of the proposed water management approach in an EA, and to prepare a FONSI if approving the action does not constitute a significant impact on the environment.

Need for the Proposed Action too Narrow—*Comments were received that Reclamation’s defined “Need for Proposal” was too narrowly focused on only providing certainty for Project agricultural use and should encompass recovery of species and Tribal trust obligations):* Council on Environmental Quality regulations require that the Purpose and Need be a statement that shall “briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action”. As one of the underlying tenets of the purpose of the Klamath Project is to operate the Project, or direct the operation of Project facilities, for the delivery of water for irrigation purposes or National Wildlife Refuge needs, or releases for flood control purposes, it is appropriate that Reclamation’s “Need for Proposal” would be focused on the opportunity of providing more certainty for Project irrigation use. However, as stated in the Need for Proposal Section in the EA (See Section 1.1), the Proposed Action was developed with consideration to Reclamation’s legal requirements and obligations including: (1) the ESA, (2) Trust responsibility to Klamath Basin Indian Tribes, (3) Klamath Project contract water users and/or water rights beneficiaries, and (4) the Klamath Basin National Wildlife Refuges.

Inadequate Justification for Alternatives Eliminated from Further Consideration—*Concern were raised that Reclamation did not properly define the reasons why Reclamation eliminated certain alternatives from further consideration:* Reclamation received suggested operational scenarios from Tribes and Key Stakeholders, which were considered in the development of the Proposed Action. Additionally, Reclamation coordinated with the Services during informal and formal consultation to exchange information regarding species needs, in developing the Proposed Action. Therefore, in an effort to meet all requirements and obligations, Reclamation considered and eliminated those alternatives described in Section 2.1 of the EA for the reasons listed therein.

Proposed Action Alternative should include flows under the 2017 Court Order—*Comments were received that Reclamation improperly eliminated a viable alternative that included flows in the Klamath River consistent with the 2017 Court Order and as described in Hillemeier et al. [2017]:* Reclamation considered an alternative that included flows consistent with the 2017 Court Order but eliminated it from further consideration based on best available scientific information, hydrologic modeling constraints, unacceptable level of certainty for meeting Project contractual and/or water right delivery obligations, and not appropriately protective of Lost River and shortnose suckers.

Although the flows consistent with Court Order alternative was considered but eliminated, the Proposed Action Alternative includes components of the Court Order flow requirements. Reclamation included a proactive approach to disease management in the Proposed Action that provides for a surface flushing flow in nearly every year. The Proposed Action also provides the flexibility for the volume of water intended for surface flushing flows to be utilized in another manner that the National Marine Fisheries Service (NMFS) determines best meets coho salmon needs. The modified 2018 BA provides approximately 50,000 AF annual for this purpose. It is also possible that a surface flushing flow will require less than 50,000 AF, particularly if implemented during a hydrologic event, which may allow for later distribution of the remaining volume as a dilution-like flow, if requested by NMFS.

There is also flexibility in the distribution of 20,000 AF of additional volume provided for enhanced May/June flow in certain years. Although the modified 2018 BA assumes a relatively even distribution over the two months for these May/June flows, it provides flexibility for this volume to be distributed to resemble a dilution-like flow, if recommended by NMFS.

The modified 2018 BA also includes a Flow Account Scheduling Technical Advisory (FASTA) Team, which NMFS will participate in, to provide input to Reclamation on management and distribution of the EWA, including the 50,000 AF in applicable years and the 20,000 AF for May/June flows in applicable years.

Although the modified 2018 BA does not explicitly include implementation of “deep flushing flows” (as defined in Hillemeier et al. [2017]), the Proposed Action does not preclude them from occurring either. Flows of the magnitude necessary to produce the deep flushing flow are dependent on favorable hydrology and cannot be manufactured solely through actions within Reclamation’s control. However, Reclamation is committed to implementing a deep flushing flow when the appropriate conditions (including those necessary to preserve public safety) occur, with appropriate input from the FASTA Team.

No Action Alternative should include 2013 Biological Opinion and 2017 Court Order Requirements—*Concerns were raised that Reclamation improperly excluded an analysis of “the present course of action” and that the current Project operations and the No Action Alternative should have included operating under the 2013 BiOp and the 2017 Court Order.* The No Action Alternative is defined by what would occur if Reclamation did not act upon the proposal for agency action. As such, the No Action Alternative would be a continuation of the present course of Reclamation’s discretionary action (i.e., the 2012 Proposed Action as described in the 2013 Biological Opinion (2013 BiOp)) until that discretionary action is changed. The 2017 Court Order imposed non-discretionary requirements on top of implementation of the current water management approach for operation of the Project (i.e., 2013 BiOp). However, once Reclamation completes formal consultation under Section 7 (a)(2) of the ESA, the 2017 Court Order expires under its own terms. The 2017 Court Order’s requirements were imposed on an interim/temporary basis until Reclamation completed formal ESA consultation and is not required to be considered part of the ongoing “present course of action.” Once consultation is complete, legal violation upon which the Court Order was granted (i.e., delayed reinitiation of consultation) will have been fully and permanently remedied with no requirement that Reclamation continue implementation of the imposed requirements if the No Action Alternative presented in the EA were to be selected.

Inadequate Amount of Time for Public Review and Comment on the EA—*Commenters stated that the 15-day comment period was inadequate to conduct a thorough review of the EA: Council on Environmental Quality (CEQ) regulations do not require that an EA be made available for public review. However, Reclamation released the EA on March 5, 2019, for a 15-day public comment period.*

Inadequate Ability for Tribal and Key Stakeholder Engagement during Development of the Proposed Action Alternative—*Comments were received that the level of involvement (i.e., ability to provide input and review modeling output) by the Tribes, water users, county offices et al., was inadequate during the ESA Section 7 reinitiation of consultation process, specifically during the development of the Proposed Action Alternative: Reclamation, in coordination with the Services, implemented a Tribal and Key Stakeholder engagement process during the reinitiated consultation. Parties who have been identified as a Tribal or Key Stakeholder under the ROC effort include: USFWS Klamath Basin National Wildlife Refuge Complex, PacifiCorp, the Klamath, Yurok, Quartz Valley, Karuk, and Hoopa Valley Tribes, the Resighini Rancheria, the Klamath Water Users Association, and individual signatory district/Project contractors party to the December 1, 2017, memorandum of understanding with Reclamation.*

Reclamation and the Services coordinated with the Tribes and Key Stakeholders in the following ways during development of the Proposed Action Alternative:

- Reclamation received several recommended water management scenarios and held 6 Tribal and Key Stakeholder Technical Team meetings since January 2017 that resulted in an iterative hydrologic modeling process among the Tri-Agency Hydrology Team (consisting of experts from Reclamation and the Services) as well as representatives from the Tribal and Key Stakeholder Technical Team
- November 1, 2018: Reclamation provided a summary white paper to the Tribes and Key Stakeholders on the Proposed Action as well as access to the Klamath Basin Planning Model viewer tool allowing review of model output for Upper Klamath Lake, Klamath River, and Project operations
- November 8 and 9, 2018: Reclamation held individual two-hour work group sessions with the Tribes and Key Stakeholders to answer technical questions and provide clarification on the Proposed Action and viewer tool shared on November 1
- November 13, 2018: Reclamation held a policy level ROC coordination workshop to discuss the overall accelerated schedule, scope, and next steps, and expectations related to Tribal and Key Stakeholder engagement associated with completing the ROC
- November 13, 2018: Reclamation and the Services held Regional Director level Government-to-Government and small group meetings with individual Tribes and Key Stakeholders
- December 12, 2018: Reclamation transmitted the draft Proposed Action (Part 4 of the draft 2018 BA) for Tribal and Key Stakeholder review
- February 19, 2019: Reclamation transmitted to the Tribes and Key Stakeholders the addendum modifying the 2018 Proposed Action

- March 4, 2019: Reclamation provided a courtesy copy of the draft EA to Tribes and Key Stakeholders ahead of the public review release. Reclamation released the draft EA for public review on March 5, 2019, for 15 days. Reclamation received comments from The Karuk, Yurok, and Hoopa Valley Tribes, several Klamath Tribal members, the Klamath Water Users Association, and the USFWS Klamath Basin National Wildlife Refuge Complex
- On April 2, Reclamation will transmit the 2019 Biological Opinions received from USFWS and NMFS on March 29, 2019 and the associated Final EA and this FONSI to Tribes and Key Stakeholders with a news release distributed to the general public announcing the availability of the compliance documents
- During each step in this process, when Reclamation received feedback and/or input from the Tribes and Key Stakeholders it was taken under consideration and incorporated, where possible

Reclamation’s Proposed Action Results in Inadequate Water Supply for Refuges—Concerns were raised that under the Proposed Action Alternative, there is no defined mechanism to supply water to the Lower Klamath Lake National Wildlife Refuge. Water that is estimated to be available to the LKNWR is inadequate to meet refuge needs: Both the No Action and Proposed Action alternatives make water available for delivery to LKNWR consistent with water rights for LKNWR and Reclamation’s contractual and other legal obligations. The Proposed Action Alternative includes increased certainty for refuge deliveries in the fall/winter period and provides for a process whereby Reclamation will coordinate with Project water users to determine demand within the Project and any available allocation of the Project Supply that can be provided to LKNWR. Although there are no formulaic conditions for determining what portion of the Project Supply is available for delivery to LKNWR, this approach provides flexibility for a voluntary agreement between the USFWS and the Project water users that could result in securing additional water supplies for LKNWR consistent with the process outlined in Section 1.1.4 of the EA.

Reclamation Should Include Cumulative Impacts Analysis on Projects or Programs Including, Klamath River Facilities (dam) Removal, LNG Gas Pipeline, Trump Water Plan, etc.— *Comments were made that Reclamation’s analysis of cumulative impacts was insufficient and should include analysis and evaluation of several future, pending, or ongoing project or plans that could seemingly impact Klamath River Basin resources:* The CEQ implementing regulations define a cumulative impact as: “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” When performing its cumulative effects analysis, Reclamation considered only future actions that have completed planning and required compliance activities to be reasonably foreseeable and those that will have effects within the five-year period of analysis for this action. As such, at the time of completion of this EA, the status and specific timeframe for the Pacific Connector Gas Pipeline, Klamath Facilities dam removal, and other projects mentioned by commenters are not reasonably foreseeable because the effects of these proposed actions are unknown to Reclamation and/or have not completed their associated planning and NEPA processes, including required compliance activities sufficient to demonstrate the effects from these potential projects that would be reasonably expected to occur within the term of analysis

covered in Reclamation's EA.

Reclamation's Responsibilities and Obligations under ESA—*Statements were made about how Reclamation is interpreting its discretionary actions relative to complying with ESA*: The ESA obligates federal agencies to “to afford first priority to the declared national policy of saving endangered species.” *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 185 (1978). Section 7(a)(2) requires federal agencies to ensure that any action they authorize, fund, or carry out “is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification” of designated critical habitat. 16 U.S.C. § 1536(a)(2). Thus, the Klamath Reclamation Project is prohibited from engaging in any action that is likely to “jeopardize the continued existence of” an endangered or threatened species or result in “destruction or adverse modification of [the designated critical habitat].” *See* 16 U.S.C. § 1536(a)(2); *PCFFA v. Bureau of Reclamation*, 426 F.3d 1082 (9th Cir. 2005); *PCFFA v. Bureau of Reclamation*, 02-2006 (NDC 2003). Agency action can be enjoined if it is in violation of the ESA. *See Thomas v. Peterson*, 735 F.2d 754, 764 (9th Cir. 1985); *Pacific Rivers Council v. Thomas*, 30 F.3d 1050, 1056-1057 (9th Cir. 1994); *see also Kandra v. United States*, 145 F. Supp. 2d 1192 (DOR 2001) (Reclamation may release stored water when required to meet its obligations under the ESA); *Klamath Water Users Protective Association v. Patterson*, 204 F.3d 1206, 1212 (9th Cir. 2000) (Reclamation has authority to manage Link River Dam as necessary to meet its obligations under the ESA).

To ensure compliance with the ESA's statutory mandates, the ESA's implementing regulations outline a detailed process whereby action agencies consult with the appropriate expert “consulting agency” (either NMFS or FWS, or both, depending on the species involved) to analyze the potential impacts of a proposed action on ESA-listed species and their critical habitat. 50 C.F.R. §§ 402.10-402.16. The action agency must engage in consultation (either “informal” or “formal,” as appropriate) if its proposed action “may affect” a listed species or critical habitat and the agency has any discretion to take an action for the benefit of the species. *Id.*; *see also NRDC v. Jewell*, 749 F.3d 776, 738 (9th Cir. 2014); *Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 418 (9th Cir. 2010); *Center for Food Safety v. Vilsack*, 718 F.3d 829,842 (9th Cir. 2013). Informal consultation is “an optional process that includes all discussions, correspondence, etc., between the Service and the Federal agency designed to assist the [action agency] in determining whether formal consultation is required.” 50 C.F.R. § 402.13(a). “If during informal consultation it is determined by the [action agency], with the written concurrence of [the consulting agency], that the action is not likely to adversely affect listed species or critical habitat, the consultation process is terminated, and no further action is necessary.” *Id.*; 50 C.F.R. § 402.14(b)(1). If, however, the action agency or the consulting agency determines that the action is “likely to adversely affect” listed species or designated critical habitat, the agencies will then engage in formal consultation. 50 C.F.R. § 402.13(a); 50 C.F.R. § 402.14(a)-(b). Formal consultation leads to the issuance of a written biological opinion by the consulting agency that assesses the likelihood of jeopardy to the species and destruction or adverse modification of its critical habitat. 50 C.F.R. § 402.14(g)-(h). This biological opinion (associated with the Patterson case) was amended to clarify that it was not intended to affect the relative water rights of others not before the court, rather it relates to the operation and management of the Project.

Following consultation, the action agency must determine “whether and in what manner to

proceed with the action in light of its Section 7 obligations and the Service’s biological opinion.” 50 C.F.R. § 402.15(a). Where a biological opinion concludes that the proposed action is not likely to jeopardize a listed species or destroy or adversely modify critical habitat, the action agency may reasonably rely on the biological opinion and proceed with the action in compliance with the ESA. *Pyramid Lake Paiute Tribe of Indians v. U.S. Dep’t of Navy*, 898 F.2d 1410, 1415-16 (9th Cir. 1990) (affirming agency’s reasonable reliance on a biological opinion). A federal agency is required to reinitiate consultation under certain enumerated circumstances. 50 C.F.R. § 402.16. While the consulting agency can request that the federal agency reinitiate consultation, the authority to reinitiate rests solely with the action agency, as the obligation to avoid jeopardy and adverse modification of critical habitat is borne by the action agency. *Id.*; 50 C.F.R. § 402.14(i)(4); Endangered Species Consultation Handbook, Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act, at 2-5, 2-11, 4-64. The ESA does not include a mandatory deadline for completing reinitiated consultation. *See* 16 U.S.C. § 1536(b)(1)(A) (consultation in the first instance “shall be concluded within the 90-day period or within such other period of time as is mutually agreeable to the Secretary and the Federal agency”); 50 C.F.R. § 402.16.

In addition to the ESA Section 7 requirement that federal agencies avoid jeopardizing listed species and destroying or adversely modifying their critical habitats, Section 9 of the ESA prohibits the “take” of any endangered species, 16 U.S.C. § 1538(a)(1)(B). “Take” means to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” 16 U.S.C. § 1532(19). In conjunction with a biological opinion produced during formal consultation that concludes the proposed action will not cause jeopardy but may result in incidental take of listed species, the consulting agency issues an Incidental Take Statement (“ITS”) to the action agency. Any taking in compliance with the terms and conditions of the ITS is exempt from the general take prohibition in ESA Section 9. 16 U.S.C. § 1536(b)(4)(iv), (o)(2). If the anticipated amount or extent of incidental take is exceeded, the action agency must reinitiate consultation. 50 C.F.R. §§ 402.14(i)(4), 402.16(a); Consultation Handbook at 2-5, 2-11, 4-64.

Tribal Trust—*Comments were made relative to Reclamation’s Tribal Trust obligations (including, but not limited to the need to uphold federal reserved fishing and water rights) as well as how these obligations do not supersede the rights of others (i.e., the Project water rights):* In addition to complying with ESA in connection with Reclamation’s operation of the Project, the United States is also subject to tribal trust obligations. A treaty entered into in 1864 reserves to the Klamath Tribes fishing, hunting, and gathering rights on lands that were formerly part of the original Klamath Indian Reservation in Oregon as well as federal reserved water rights. The Yurok and Hoopa Valley Tribes have federal Indian reserved fishing rights to take anadromous fish within their reservations in California, as well as federal reserved water rights. *Parravano v. Babbitt*, 70 F.3d 539, 541-42 (9th Cir. 1995); *see also United States v. Eberhardt*, 789 F.2d 1353, 1359 (9th Cir. 1986) (the Tribes’ fishing rights include the right to harvest quantities of fish on their reservations sufficient to support a moderate standard of living including for ceremonial, subsistence and commercial purposes). The priority date of the Yurok and Hoopa Valley tribes’ water rights are at least as early as 1891, and may be earlier. The United States has a trust responsibility to protect tribal trust resources. This trust responsibility is one held by all federal agencies. In general, the trust responsibility requires the United States to protect tribal fishing and water rights, which are held in trust for the benefit of the tribes. The Finding of No Significant Impact – Klamath Project Operating Procedures - 2019-FONSI-007

Secretary, through Reclamation, must operate Reclamation projects consistent with vested, fairly implied senior Indian water rights. Reclamation is obligated to ensure that project operations not interfere with the Tribes' senior water rights. This is dictated by the doctrines of federal reserved water rights and prior appropriation as well as Reclamation's trust responsibility to protect tribal trust resources. With respect to the Tribes' fishing rights, Reclamation must, pursuant to its trust responsibility and consistent with its other legal obligations, prevent activities under its control that would adversely affect those rights, even though those activities take place off-reservation. Thus, Reclamation must use any operational discretion it may have to ensure that those rights are not diminished. Reclamation may not store water for Project purposes under state water rights if otherwise required to satisfy senior tribal water rights.

Reclamation has discretion in the management of the Project to determine, for example, water availability, quantities of water for delivery and how Project water is shared in times of short supply. The contracts between Project water users and Reclamation contain terms providing Reclamation with this discretion. Also, section 10 of the Reclamation Act of 1902 provides Reclamation with authority to make necessary rules and regulations to carry out Reclamation laws. 43 USC § 373.

Use of water from the Lost River Sub-Basin Should be Considered for Supplementing Klamath River Instream Flows—*Commenters recommended Reclamation consider utilizing water resources from other sub-basins to meet needs in the Klamath River system:* Use of Klamath Project facilities in the Lost River sub-basin to augment river flows in the Klamath River is inconsistent with existing Project contracts and presently formulated water rights. Further, Project facilities within the Lost River sub-basin (Clear Lake Reservoir, Gerber Reservoir) are required to be managed consistent with ESA obligations in those reservoirs that specify limits for releases and end of season elevations. Infrastructure limitations related to release capacity, conveyance losses, and public safety considerations (e.g., drinking water contamination) also exist for these facilities.

Economies other than Project Agriculture should be Discussed—*Comments were submitted stating that tribal economies should be considered alongside agriculture in the EA.* The EA includes a discussion of other economies as related to the Proposed Action Alternative.

Findings

In accordance with NEPA, Reclamation has found that implementation of the water management approach for the Project for April 2019 through March 2024 is not a major Federal action that would significantly affect the quality of the human environment. Consequently, an EIS is not required. This FONSI determination is based on the following factors:

Water Resources: UKL and the Klamath River are the principal water sources affected by the No Action and Proposed Action alternatives. There are no material differences between Lost River storage, diversion, and flood control operations for the two alternatives.

Under the Proposed Action Alternative, the average end of month water surface elevation for UKL for February would be increased by 0.16 feet as compared to the No Action Alternative. Similarly, the Proposed Action results in an increase in the UKL average end of month water

surface elevation for September by 0.38 feet. End of February water surface elevations (and storage) under both alternatives are key for calculating spring/summer allocations, including 1) the volume of water required for release downstream to the Klamath River (EWA), 2) the volume required to meet sucker needs in UKL, and 3) the volume available for irrigation and refuge use within the Project (Project Supply). The end of September elevation often represents the lowest elevations annually observed in UKL and the volume needed to refill UKL during the subsequent fall/winter period. The average difference seen under the alternatives relative to the end of month UKL elevations in February and September are within the range of UKL elevations that have historically been observed. Generally speaking the Proposed Action Alternative results in increased UKL elevations throughout the year relative to the No Action Alternative. Therefore, implementation of the Proposed Action Alternative would have less than significant impacts on UKL water resources.

Under each alternative, Klamath River flows mimic a natural hydrograph with peak flows in the spring (March/April) and base (lowest) flows in late summer (August). The differences between river flows under both alternatives would be within the range of flows recorded for the POR for the Klamath River at IGD. Table 4-2 in the EA shows that both alternatives have relatively similar flows at IGD by month or period of exceedance. Under the Proposed Action Alternative, the average fall/winter flow volume at IGD would be increased by 14,000 AF compared to the No Action Alternative, and the average spring/summer flow volume at IGD would be reduced by 13,000 AF compared to the No Action Alternative. The minimum flow volume in fall/winter would be 15,000 AF less under the Proposed Action Alternative, and the minimum spring/summer flow volume would be 31,000 AF higher under the Proposed Action Alternative, reflecting the additional water provided to perform a flushing flow in low water years. Klamath River flows presented in the Proposed Action Alternative result in flow variations that are within the range of flows recorded for the Period of Record for the Klamath River at IGD. The largest calculated change in flows at the 50 and 90 percent exceedance would be in March with an average increase of 307 cubic feet per second (cfs) and 285 cfs at the 50 and 90 percent exceedances, respectively. The monthly average flow in March for the 50 percent exceedance would be 3,170 cfs; the monthly average flow at the 90 percent exceedance would be 1,357 cfs. In the rest of the year at the 90 percent exceedance, average flow changes are less than 100 cfs. Flows throughout the year across all exceedance values under the Proposed Action Alternative are well within historic operations and would have less than significant impacts on Klamath River water resources.

Compared to the No Action Alternative, Project Supply under the Proposed Action Alternative will be reduced on average by 67,000 AF (from an average of 351,000 AF to an average of 284,000 AF) or approximately 19 percent. Total spring/summer water available for diversion by the Project, inclusive of LRDC and KSD flows will be reduced on average by 30,000 AF or approximately eight percent, under the Proposed Action Alternative, from 366,000 AF to 336,000 AF, compared to the No Action Alternative. The Proposed Action Alternative is not expected to result in significant impacts due to a firm Project Supply allocation made in April, use of private supplemental groundwater resources, changes in agricultural practices, application of on-farm crop insurance program, use of NRCS programs, and other potential state and federal programs and activities.

Under the Proposed Action Alternative, average water diversions to the Project during the fall/winter period (27,000 AF) are slightly higher compared to the No Action Alternative (26,000 AF). This is a minimal change and expected to have a negligible effect.

The total annual water deliveries to LKNWR under the Proposed Action Alternative average 20,000 AF, with a minimum of 3,000 AF in two years (1992 and 2014) and a maximum of 43,000 AF in six years over the POR. This is an 8,000 AF reduction in average refuge deliveries compared to the No Action Alternative, but an increase in minimum deliveries of 3,000 AF. Despite the reduction in average annual refuge deliveries under the Proposed Action Alternative, the No Action Alternative more frequently results in years with severely limited water deliveries (i.e., less than 5,000 AF per year). Under the No Action Alternative, anticipated deliveries are 1,000 AF or less in nine years (one-quarter of all years in the POR), and less than 5,000 AF in 13 years (more than one-third of all years in the POR). For comparison, under the Proposed Action, there are no years with zero deliveries and only four years with deliveries of 5,000 AF or less (or approximately one-tenth of all years in the POR). Thus, overall deliveries to LKNWR from UKL and Klamath River are more consistent under the Proposed Action compared to the No Action Alternative. Between the two alternatives, the difference in impacts is expected to be insignificant relative to overall Project Supply and water available to the LKNWR for the POR.

No measurable effects upon surface or groundwater water quality are expected. While pumping of groundwater is not included as part of either the No Action or Proposed Action alternatives, Reclamation recognized that some level of private groundwater pumping would occur when Project Supply is less than historic demand. Consistent with the State of California's 2014 Sustainable Groundwater Management Act, the formation of Groundwater Sustainability Agencies and Groundwater Sustainability Plans by 2022 is still underway. This may result in increases in impacts to groundwater resources within the term of the Proposed Action in the form of declining groundwater levels. However, utilizing the sustainable pumping limits provided by the Oregon Water Resources Department (OWRD) (i.e., 80,000 AF pumped in any given year and a 10-year average not exceeding 30,000 AF), it is estimated there would be an increase of approximately 22 percent in groundwater pumping compared to the No Action Alternative. Although there is an increase in expected pumping due to an increase in years where Project water supply is less than demand, the expected pumping rates under the Proposed Action Alternative are within the bounds of sustainability outlined by OWRD based on U.S. Geological Survey research, and would result in less than significant impacts on groundwater resources. Reclamation will continue to rely on the state agencies with jurisdiction over groundwater to ensure that the private groundwater resources are used in a sustainable manner.

Biological Resources:

Upper Klamath River Basin/UKL and Federally Protected Species

Under the Proposed Action Alternative, the cap on Project Supply results in increased UKL elevations during the late summer providing conditions allowing thirteen to twenty feet of deep-water habitat to be available for adult Lost River and shortnose suckers in the northern portion of UKL. The increased late summer elevations may improve access to refugial habitat in Pelican Bay and reduce avian predation on adult and juvenile sucker.

The modeled output for the Proposed Action Alternative indicates that the frequency at which reduced habitat may concentrate spawning or compel suckers to skip spawning at the shoreline areas is relatively low.

The application of “UKL Credit” will result in slightly higher UKL elevations during the spring/summer irrigation season relative to the No Action Alternatives. The higher elevations will provide additional habitat availability for adult and juvenile suckers in UKL.

Likewise, variation of UKL elevations under the Proposed Action Alternative resulting from a cap on Project Supply, forced flushing flows, and use/accounting of LRDC and KSD return flow (i.e., UKL credit) would have less than significant impacts on biological resources, specifically ESA-listed suckers within UKL.

Relative to TLS1A management, the proposed change to a year-round minimum elevation of 4,034.0 feet and resultant water depths appears to provide adequate habitat for juvenile and adult Lost River and shortnose suckers life stages (see 4.4.1 in the EA). Under both alternatives, some level of avian predation of suckers in TLS1A is likely to occur. Surface elevations in TLS1A of 4,034.0 ft appear to provide areas with water depth greater than 3.3 ft, the depth at which sucker vulnerability to American white pelican predation is expected to be increased. As the Proposed Action Alternative provides areas of TLS1A with a water depth of at least 4 ft, adult suckers would continue to have some level of protection from avian predation. The proposed change in operation at TLS1A to a year-round minimum surface elevation of 4034.0 ft is not anticipated to have additional measurable impacts to suckers relative to the No Action Alternative.

USFWS issued a biological opinion on March 29, 2019, concluding that the Proposed Action Alternative is not likely to jeopardize the continued existence of the Lost River sucker and shortnose sucker and is not likely to result in the destruction or adverse modification of critical habitat for Lost River sucker and shortnose sucker. However, USFWS does anticipate incidental take of Lost River sucker and shortnose sucker as well as adverse effects to their designated critical habitat. The Services’ biological opinions were highly coordinated to ensure compatibility with the effects on the species in which each agency has jurisdiction.

The modeled UKL water levels resulting from the Proposed Action will result in less frequent and shorter periods of time when wetlands around UKL, including within Upper Klamath National Wildlife Refuge (UKNWR), lack standing surface water (i.e., when the UKL elevation is below 4,139.5 feet). In terms of scope, the Hanks Marsh and Upper Klamath Marsh units of UKNWR (comprising approximately 15,000 acres) are most directly affected when water levels in UKL are below 4,139.5 feet. Standing surface water supports emergent and submergent wetland vegetation, and invertebrates, fish, and amphibians that occupy this habitat. Wetland areas provide food and habitat for other wetland-dependent wildlife, including waterfowl and other migratory birds.

Wetland and Riparian Areas/Migratory Birds

Although average annual water deliveries to LKNWR under the Proposed Action (20,000 AF) are approximately 70 percent of the average under the No Action Alternative (28,000 AF), deliveries are more consistent and reliable from a year to year basis under the Proposed Action. Under the No Action Alternative, annual deliveries to LKNWR are less than 1,000 AF in approximately one-quarter of all years and less than 5,000 AF in one-third of all years, and these

levels of reduced deliveries can occur over multiple successive years. In these instances, it is reasonable to assume that the No Action Alternative would result in all 24,000 acres of semi-permanent and permanent wetlands in LKNWR being impacted, with little or no standing water to support wetland vegetation and associated wildlife. Wetland areas need regular inputs of freshwater to maintain standing surface water, due to evaporation, evapotranspiration, and groundwater infiltration.

In comparison, the Proposed Action only results in annual deliveries to LKNWR of less than 5,000 AF in one-tenth of all years. This change should reduce the frequency and duration of periods when all wetlands, both permanent and temporary, (i.e., approximately 24,000 acres) in LKNWR lack standing surface water, although it is recognized that there will still likely be extensive portions of LKNWR that lack standing water in dry years under the Proposed Action. The precise extent of the impact, in terms of acres of wetlands without standing surface water, would necessarily depend on other conditions, particularly recent precipitation and water deliveries to LKNWR during immediately preceding years, including from Pumping Plant D.

Despite the benefits of a more reliable supply of water from year to year, the Proposed Action, like the No Action Alternative, still results in annual deliveries that are inadequate to meet full refuge needs in LKNWR. As a result, the difference between the Proposed Action and the No Action Alternative with respect to wetlands in LKNWR is minor.

Compared to the No Action Alternative, the Proposed Action Alternative would reduce the frequency and duration of time during which wetland areas around UKL and within LKNWR lack standing surface water, resulting in potential modest improvements in habitat, food supply, and protection against disease outbreaks for migratory birds. The impacts to migratory birds due to insufficient water supplies for LKNWR under the Proposed Action will therefore be similar to and potentially modestly improved relative to the No Action Alternative. The net effect upon migratory birds is minimal relative to historic conditions.

Lower Klamath River Basin/Klamath River and Federally Protected Species

A more frequent disturbance regimen in the Klamath River via surface flushing flows is likely to provide a preventative mechanism for reducing disease risks for juvenile coho and Chinook salmon relative to the No Action Alternative. Reduced disease risk for outmigrating salmon may also improve the prey base for Southern Resident killer whales (SRKW). Green sturgeon (Southern Distinct Population Segment (DPS) and Eulachon (Southern DPS) would only be minimally impacted due to life history traits, winter use of the river, and their primary occupancy being in the lower 10 miles of the Klamath River. As a result of frequent surface flushing flows, the Project's impacts to Southern Oregon Northern California Coast (SONCC) coho salmon, Chinook salmon, and SRKW relative to disease risk, are anticipated to be lessened relative to the No Action Alternative.

NMFS issued a biological opinion on March 29, 2019, concluding that Reclamation's Proposed Action Alternative is not likely to jeopardize the continued existence of the SONCC coho salmon Evolutionarily Significant Unit (ESU), or the SRKW, or destroy or adversely modify designated critical habitat for the SONCC coho salmon ESU. Critical habitat for Southern Residents is outside of the action area. However, NMFS anticipates non-jeopardizing incidental take of SONCC coho salmon and Southern Residents. Included with the NMFS 2019 biological opinion

is an incidental take statement with non-discretionary terms and conditions. NMFS also concluded that the Proposed Action Alternative is not likely to adversely affect green sturgeon, eulachon, or designated critical habitat for eulachon, thereby concluding informal consultation for those species.

Also on March 29, 2019, NMFS concluded that Reclamation's Proposed Action Alternative would adversely affect coho salmon and Chinook salmon Essential Fish Habitat (EFH). NMFS provided the following EFH conservation recommendations to protect the mainstem Klamath River and tributaries designated as EFH for Pacific Coast salmon by avoiding or minimizing the adverse effects described above.

- Reclamation should maximize the benefits of opportunistic high flow releases to create habitat conditions conducive to salmonid fitness, and detrimental to the disease pathogen *Ceratanova shasta*. For example, to the extent practicable, Reclamation should implement deep flushing flow events described as Measure 2 in Hillemeier et al. (2017) Implementation of Guidance Measure 2 will also help reduce adverse effects of the proposed action to water quality.
- Reclamation should ensure that habitat restoration projects funded through the coho restoration grant program are designed and implemented consistent with techniques and minimization measures presented in California Department of Fish and Wildlife (CDFW) California Salmonid Stream Habitat Restoration Manual, Fourth Edition, Volume II (Part IX: Fish Passage Evaluation at Stream Crossings, Part XI: Riparian Habitat Restoration, and Part XII: Fish Passage Design and Implementation; referred to as the Restoration Manual) (Flosi et al. 2010). This will help ensure that any short-term adverse effects to the streambed and associated benthic organisms EFH are minimized.

Reclamation will review NMFS's EFH assessment response document and associated conservation recommendations. Consistent with the Magnuson-Stevens Act (16 U.S.C. 1855(b), Reclamation will provide a detailed written response to NMFS's EFH conservation recommendations within 30 days of receipt of the recommendations (50 CFR S 600.920(k)(1)).

Other Wildlife Species

Other aquatic and terrestrial species are expected to experience an indiscernible level of change from existing conditions from implementation of the Klamath Project operation procedures.

In summary, there are no significant impacts to biological resources associated with the Proposed Action Alternative.

Recreation: Impacts to recreation on the Klamath River under each alternative would be minor and temporary (specifically in the spring/early summer period) as a result of fluctuations in river operations to implement surface flushing flows downstream of IGD, to assist in control of salmon disease and habitat improvement. Flow variations under the proposed Action Alternative during the spring/summer period are short in duration (7-10 days) and would only temporarily affect river activities (e.g., fishing and/or boating). These flows may assist in providing benefits to species, other than the target salmonids and thus recreational fishing opportunities. Recreational fish and boating in the Lower Klamath Basin are anticipated to

remain the same as existing conditions throughout the majority of the term of the Proposed Action Alternative.

For the Upper Klamath Basin, recreation (e.g., fish and/or boating) associated with open water bodies like UKL, would remain unchanged, and would remain consistent with historical operations. Boat access to adjacent wetland areas, including in UKNWR, would also be similar to existing and historic conditions.

The annual numbers of waterfowl hunters that visit LKNWR varies between approximately 1,500 and 2,600, including years with severely reduced water deliveries. Wildlife observation and photography at the UKNWR, LKNWR and TLS1A are also aided by the presence of water, but not dependent upon it, and can be assumed to continue at the same general level as the No Action Alternative.

Recreation basin-wide will continue at the same general level with no significant impacts.

Land Use: Due to the nature of the Proposed Action Alternative, impacts to land use outside of the Klamath Project are not anticipated. Compared to the No Action Alternative, the Proposed Action Alternative is not anticipated to change established land management practices within the Project boundaries or within the Klamath Basin Refuge Complex. Any potential effects are expected to be limited in duration due to the term of the action.

In economic impact simulations of the No Action Alternative (Section 4.6.) involuntary land idling due to reduced Project water supplies occurs in seven (7) years of the 35-year POR (20 percent of years) while under the Proposed Action Alternative, involuntary land idling increases to 13 years of the 35-year POR (or 37 percent of years). Under the No Action Alternative, land fallowing will average 25,500 acres in each occurrence when available water supplies (including groundwater) are insufficient to meet demand. Under the Proposed Action Alternative land fallowing will increase to an average of 40,700 acres per occurrence.

The impact of the Proposed Action Alternative as compared to the No Action Alternative is therefore an additional six years of involuntary land idling, and an increase in average fallowed acreage of 15,200 acres per occurrence in water-short years, with corresponding potential increases in weed growth and dust. As a percentage of the Project's irrigated acreage, involuntarily fallowed land would increase from three (3) percent under the No Action Alternative to 10 percent under the Proposed Action Alternative on average over the POR, with corresponding increases in weed growth and dust.

Under the Proposed Action Alternative there would be an increase in the frequency and magnitude of shortages of Project surface water. Likely responses to this shortage include groundwater supplementation and involuntary land idling. Groundwater will assist in filling the gap between available Project supplies and irrigation demand, but due to sustainable management of groundwater resources by the respective state water resource agencies, groundwater supplementation may be limited or altogether unavailable, resulting in an increase in involuntarily idled land. Based on the analysis presented, under the Proposed Action Alternative an annual average of 10 percent of the Project would be involuntarily idled. As there may be other mitigating factors available to Project water users, including but not limited to the

NRCS on-farm programs and other potential state and federal programs and activities, only short-term impacts are expected. Long-term land use patterns would not be expected to change as a result of this short-term action (five years).

Socioeconomic Resources: Under the Proposed Action Alternative, shortages in Project surface water supply are estimated to occur in 63 percent of years (22 of 35 years). Sustainable use of groundwater is able to mitigate the shortage in 7 of the 22 years at a cost of \$694,000 per occurrence. After groundwater supplementation, the frequency of unmitigated shortages in irrigation water (Project surface water plus private groundwater) is reduced to 15 years (43 percent of years in the POR). In two of those 15 years, the magnitude of the unmitigated shortage is insufficient to cause significant (> 2.5 percent) acreage to be involuntarily idled with resultant economic impacts (based on the socioeconomic modeling). Estimated annual regional output losses in the remaining 13 years average \$20.2 million (12 percent below estimated full output of \$163.2 million) per year of occurrence, or \$7.5 million per year averaged over the entire POR.

Under the Proposed Action Alternative, regional job losses within the geographic scope of analysis in this EA average 56 over the POR, or 150 jobs in each year of unmitigated short water supplies. Compared to the No Action Alternative, the Proposed Action Alternative would result in an additional six years experiencing job losses (from 7 years to 13 years), and the loss of an additional 70 jobs on average per occurrence.

While groundwater pumping as a result of inadequate Project water supplies would occur no more often under the Proposed Action Alternative, pumping costs would be 22 percent higher because of the need to pump more supplemental groundwater. Losses to the Project's \$163.2 million regional output due to unmitigable shortages in irrigation water supply would be expected to occur in an additional six years as compared to the No Action and would be more severe (impact would increase from \$10.8 million to \$20.2 million per occurrence, and from \$2.2 million to \$7.5 million over the POR). Repeated years of inadequate Project water supplies may be more impactful than isolated years which provide irrigators greater opportunity to recover from their economic losses.

Under the Proposed Action, Reclamation anticipates that there would be no change to fishing opportunities for the Klamath Tribes, relative to the No Action Alternative. Reclamation anticipates a reduced disease risk to coho and Chinook salmon in the Klamath River which is likely to result in increased fitness and decreased vulnerability, relative to the No Action Alternative. In turn, there may be less potential for adverse effects to tribal fisheries-related socioeconomic resources which may increase fish harvest for subsistence and commercial fishing and associated cultural and associated practices for the Klamath River Tribes. Due to the integral nature of fish to the worldview, status, and health of the Tribes, any improvements to the health and availability of fish and the Klamath River could contribute to improved standard of living and health for the Tribes. However, standard of living and health improvements would likely occur over the long term which would exceed the five-year period of the Proposed Action.

Implementation of the Proposed Action Alternative is unlikely to significantly impact commercial fishing opportunities and resultant economic activity as compared to the No Action Alternative.

Refuge recreation is unlikely to be significantly impacted by implementation of the Proposed Action Alternative. Likewise, as noted for commercial fishing above, water-based recreation centered on recreational fishing is unlikely to change significantly.

Impacts of socioeconomic effects are likely to occur under the Proposed Action Alternative. However, under 40 CFR § 1508.14, the economic or social effects as a result of a proposed action are not intended by themselves to require further analysis under an environmental assessment. The impacts to socioeconomics resulting from the Proposed Action Alternative, where combined with analysis of impacts on other resources within the natural and physical environment (see discussion below) result in insignificant impacts on the human environment.

Air Quality: Implementation of the Proposed Action would likely result in an increase in an average fallowed acreage of 15,200 acres per occurrence in water-short years. It is likely that, due to water supply allocation based on Reclamation's contractual prioritization, the increase in fallowed acres would result in a higher level of PM2.5 or dust emissions in Klamath County, Oregon. As has occurred in the past, dust mitigation and soil retention best management practices (BMPs) would likely be employed. Although unquantifiable, it is probable that the level of PM2.5 or dust emissions under the Proposed Action Alternative, even with BMPs in effect, would increase by some small amount.

Air quality condition is anticipated to remain the same as existing conditions in Del Norte and Humboldt, California counties.

Indian Trust Resources: It is anticipated, due to increased flows and disease management measures, that the Tribal Trust water and fishery resources in the Klamath River may experience increased fitness and decreased vulnerability, which may allow for increased harvest of salmon for subsistence, ceremonial, and commercial needs. Therefore, implementation of the Proposed Action Alternative is anticipated to have a positive impact on the Tribal Trust water and fishery resources.

The Klamath Tribes current levels of ceremonial use would continue and fishing for subsistence and commercial needs would still not occur. As such, there would be no change in the Klamath Tribes Trust Assets. The Proposed action will have no effect upon the Klamath Tribes' federal reserved water rights.

Environmental Justice: Involuntary idling of productive irrigable land within the Project boundary would occur leading to an increased risk to local rural agricultural communities. Though uncertain, the use of supplemental water supplies, changes in agricultural practices, and/or application of on-farm crop insurance program are expected to be implemented if shortages exist, thereby reducing risks to agriculture related populations.

Klamath River fisheries are anticipated to experience an increased fitness and decreased vulnerability, relative to the No Action Alternative potentially allowing for an increase in coho and Chinook salmon as a community economic and cultural resource. For Lost River and shortnose suckers there would be no change from existing levels related to use of suckers as a community economic and cultural resource. In turn, the overall risk to the tribal related population and the associated environmental justice would be reduced.

In summary, ethnic minority and/or low-income sectors of both the population are not expected to be disproportionately affected by adverse environmental impacts associated with the project alternatives.

Indian Sacred Sites: The Proposed Action is not likely to 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 (EO13007 and 512 OM 3). Flow increases to accommodate the Yurok Tribe's Boat Dance Ceremony are incorporated into the Proposed Action Alternative. Therefore, the Proposed Action would not inhibit access to, or ceremonial use of, an Indian Sacred Site nor would the Proposed Action Alternative adversely affect the physical integrity of such sacred sites.

Cultural Resources: The Proposed Action has no potential to affect historic properties (40 CFR 1508.27(b)(8)). The Proposed Action would allow for implementation of Klamath Project operating procedures within existing facilities and would not produce any ground disturbances, construction of new facilities or the modification of existing facilities, or land use changes. Since the Proposed Action has no potential to affect historic properties, no cultural resources would be impacted as a result of the Proposed Action.

Climate Change and Greenhouse Gases

Implementation of the Proposed Action will result in insignificant impacts to climate change or increases in greenhouse gases due to the nature and short time period of the Proposed Action Alternative.

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 all resource areas analyzed in the EA. There were no significant cumulative impacts identified for these resource areas.

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; national natural landmarks; sole or principal drinking water aquifers; prime and unique farmlands; wetlands (Executive Order 1190); national monuments; and other ecologically significant or critical areas (40 CFR 1508.27(b)(3) and 43 CFR 46.215(b)). Although portions of the Klamath River are designated as Wild and Scenic, Klamath Project flow management would largely be within the normal release range of water levels along the Klamath River and would not be reduced below or exceed the historic range of flows.
- The Proposed Action will not significantly impact flood plains (EO 11988). No construction, dredging or other modifications 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 water deliveries and releases that are within the normal operational range and maintenance activities within enclosed facilities. Floodplains would not be impacted by the Proposed Action.

- 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)).