



United States Department of the Interior



BUREAU OF RECLAMATION
Klamath Basin Area Office
6600 Washburn Way
Klamath Falls, OR 97603-9365

IN REPLY REFER TO:

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APR 13 2021

VIA ELECTRONIC MAIL

Memorandum

To: Field Supervisor, U.S. Fish and Wildlife Service
Attn: Daniel Blake

From: Jared L. Bottcher
Acting Area Manager

Subject: 2021 Water Year – Klamath Project Temporary Operating Procedures and Term and Condition 1A of the National Marine Fisheries Service’s 2019 Biological Opinion and Term and Condition 1c of the U.S. Fish and Wildlife Service’s 2020 Biological Opinion

Purpose

The purpose of this letter is for the Bureau of Reclamation (Reclamation) to document consistency with Term and Condition (T&C) 1A of the National Marine Fisheries Service’s (NMFS) Endangered Species Act (ESA) Section 7(a)(2) *Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response* (2019 NMFS BiOp) issued on March 29, 2019, and T&C 1c of the U.S. Fish and Wildlife Service’s (USFWS; collectively the Services) *Biological Opinion on the Effects of the Proposed Interim Klamath Project Operations Plan, effective April 1, 2020, through September 30, 2022, on the Lost River and Shortnose Sucker* (2020 USFWS BiOp; collectively BiOps).

Background

Critically dry and extraordinary hydrologic conditions in the Klamath River Basin will prevent full simultaneous satisfaction of requirements for ESA-listed species in Upper Klamath Lake (UKL) and the Klamath River, as specified in the 2018 Modified Operations Plan/Interim Operations Plan (IOP) and the BiOps, even without water deliveries to the Klamath Project (Project). Reclamation has been coordinating with the Services since early 2021 on hydrologic conditions and the development of the temporary operations. In that time, hydrologic conditions continued to deteriorate, setting a number of historical records for low inflows to UKL and with projected inflows over the spring/summer period continuing to decline. Reclamation is required by the USFWS and NMFWS BiOps to use the Natural Resources Conservation Service April 1, 50 percent exceedance forecast for UKL inflows to calculate overall UKL Supply, and allocations to the Klamath River and Klamath Project. Reclamation received the April 1 UKL inflow forecast on April 3, which represented a 75,000 AF reduction in forecasted inflows to UKL, relative to mid-March forecast. With this information in hand, it is even more likely that Reclamation will be unable to

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simultaneously and fully meet the competing requirements of the Services BiOps, including the mid-season UKL boundary conditions, even without Project diversion.

Upper Klamath Lake

Based on current and projected hydrologic conditions, Reclamation has determined that UKL surface elevations may fall outside the elevations identified in T&C 1c of the 2020 USFWS BiOp during the 2021 spring/summer operating season. UKL elevations are currently below 4,142.0 feet (ft) and projections indicate that UKL surface elevations are unlikely to reach 4,142.0 ft in April or May, UKL elevation is likely to fall below those observed in 2010 for portions of April and/or May 2021, and is likely to be less than 4,140.5 ft by July 15.

Hydrologic modelling for lake elevations indicates that, at this point in time, it is projected that UKL elevation will not exceed 4,140.5 ft. on July 15 even without any Project deliveries or a Surface Flushing Flow (SFF) prior to July 15. Based on the assumed inflows to UKL and accretions in the Klamath River, simply expending the Environmental Water Account (EWA) to meet river minimums and the ongoing effects of evaporation and seepage in UKL will preclude lake elevation from meeting the mid-July requirements of the 2020 USFWS BiOp. As such, Reclamation has determined that meeting the specific lake elevation required under the USFWS BiOp for larval rearing habitat is not obtainable in 2021. Reclamation has shared the hydrologic output with hydrological and biological experts at the Services consistently over the previous months, including in recent days leading up transmittal of the Temporary Operating Procedures (TOP; see enclosure)).

Klamath River

Based on projected and potential river releases, Reclamation has determined that the EWA distribution may fall outside the thresholds identified in T&C 1A during the 2021 spring/summer operating season. EWA spending and Iron Gate Dam flows have not yet fallen outside the thresholds listed in T&C 1A.

Given the projections for UKL surface elevations and EWA distribution, Reclamation immediately notified and began coordinating with the Services in January of this year to determine the causative factors for potentially falling outside BiOp “boundary conditions”, consistent with the meet and confer provisions of T&C 1A and T&C 1c. Reclamation, in discussion with the Services, determined the causative factors as consecutive critically dry years and extraordinary hydrologic conditions. Specifically, cumulative inflows into UKL for the 2021 water year (starting on October 1, 2020) are the lowest within the forty-year period of record (1981-2020). Additionally, since the start of the 2021 water year, the Williamson River, the largest tributary to UKL, has set nearly 60 record lows for daily mean flows. In many ways, the 2021 drought is unprecedented and has required that Reclamation coordinate with the Services on an operational path forward.

As a result of the extraordinary hydrologic conditions and the requirement to protect endangered suckers in UKL and threatened coho salmon and Chinook salmon (surrogate for endangered Southern Resident Killer Whale) in the Klamath River, some of the thresholds within both BiOps are unlikely to be met during the 2021 spring/summer operating season. As such, in coordination with the Services, Reclamation has identified deviations from the IOP and developed proposed TOP for Project operations for the 2021 spring/summer operating season to address immediate and temporary competing needs, including the needs of all threatened and endangered species, in a reasonable manner informed by real-time hydrological and biological data. The below discussion describes Reclamation’s TOP relative to UKL elevations, Klamath River flows, and Project

deliveries for the 2021 spring/summer operating period, consistent with the requirements of T&C 1A and 1c in 2019 NMFS and 2020 USFWS BiOps, respectively.

Proposal

Reclamation proposes the TOP would be in effect from April 15 through September 30, 2021, when Reclamation will revert to the 2020 IOP, which will remain in effect until the earlier of September 30, 2022, or the completion of ESA Section 7 consultations on a new proposed operations plan. The TOP relies on observed hydrologic conditions, the Natural Resource Conservation Service's UKL inflow forecasts, and biological monitoring to guide Reclamation's operations. The TOP includes deviations from the Modified 2018 Operations Plan and 2020 IOP specific to UKL elevations, Surface Flushing Flow (SFF) implementation in the Klamath River, and delivery of Project Supply from UKL. Other than the specific deviations to the IOP that are outlined in this letter, all other operations are expected to be consistent with the 2020 IOP and Modified 2018 Operations Plan, barring some unforeseen circumstance. Any further deviations arising from continued adverse hydrologic conditions would be addressed as they arise in conference with the Services.

Operating Criteria

Upper Klamath Lake and the Klamath River

Deviations to minimum Iron Gate Dam flows are not proposed. Under the TOP, the SFF window has been extended and a SFF may occur between April 15 and June 1. However, certain conditions must be met for a SFF to be implemented under various lake elevation scenarios as follows:

UKL surface elevation less than 4,141.6 ft.: a SFF will only occur based on the criteria outlined in the real time management section summarized below and in Section 2 of the TOP (see enclosure).

UKL surface elevation greater than or equal to 4,141.6 ft. but less than 4,141.8 ft.: Reclamation will operate to ensure a decline in UKL elevation is less than or equal to 0.2 ft., achieved by coinciding the SFF with a hydrologic event, borrowing water from PacifiCorp reservoirs, or reducing the volume necessary for SFF through modification of the magnitude and/or duration, and accelerated ramp down rates (any of which may be implemented individually or in combination). Real time management guidelines (see TOP Section 2) will help guide implementation of a SFF under these conditions. Peak SFF discharge will be commensurate with maximum capability of Link River Dam and PacifiCorp's dams in the hydroelectric reach for no less than 24 hours unless a greater magnitude can be achieved in a shorter duration. Additional days of the SFF peak magnitude may be utilized as conditions allow.

UKL elevation greater than or equal to 4,141.8 ft.: Reclamation will operate to ensure a decline in UKL elevation less than or equal to 0.4 ft., achieved by a coinciding a SFF with a hydrologic event, borrowing water from PacifiCorp reservoirs, or reducing volume necessary for SFF through modification of magnitude and/or duration and accelerated ramp down rates (any of which may be implemented individually or in combination). Real time management guidelines summarized below and specified in Section 2 of the TOP relative to sucker and salmon monitoring shall be implemented. Peak SFF discharge will be commensurate with maximum capability of Link River Dam and dams in the hydroelectric reach for no less than 24 hours unless a greater magnitude can be achieved for a shorter duration. Additional days of SFF peak magnitude may be utilized as conditions allow.

Project Supply

Project Supply from UKL will become available to charge Project canals and allow for limited irrigation deliveries beginning May 15. Project Supply may be made available prior to May 15 to begin charging Project canals and provide for limited deliveries if a SFF has already been implemented. Reclamation will track deliveries of Project Supply to ensure they do not interfere with the potential implementation of a SFF between May 15 and June 1. For the 2021 spring/summer operating period, instead of allocating a specific volume from UKL (i.e., Project Supply), Reclamation plans to make available all volume above a UKL elevation of 4,138.3 ft. Reclamation will coordinate with the Services throughout the spring/summer season on Project diversions to address unforeseen circumstances that may arise.

Lower Klamath National Wildlife Refuge

Reclamation understands the USFWS may begin exercising existing water right transfers to the Lower Klamath National Wildlife Refuge, coincident with the start of Project deliveries from UKL.

Real-Time Management

Real Time Management to respond to risk to listed species and deviations from Operational Criteria

The real-time management component of the TOP (Section 2) outlines how Reclamation and the Services will coordinate and make decisions that respond to evolving environmental conditions and projected risks to listed species. For example, real-time monitoring of salmon disease in the Klamath River and sucker spawning in UKL will inform modification of the water management criteria as otherwise described in Section 1 of the TOP. Using real-time monitoring and forecasting information, Reclamation will meet and confer with the Services to quickly act on opportunities to reduce risk to listed species. Reclamation, with input from the Services, will make the final determination on whether implementation of a SFF will occur based on professional judgement and balancing of risks to species. Key considerations that are expected to trigger a meet and confer process include, but are not limited to: (1) *Ceratanova shasta* (*C. shasta*) disease and water temperature; (2) sucker spawning and refugial habitat; (3) hydrologic considerations; (4) Project deliveries; and (5) water quality conditions inhibiting *C. shasta* transmission; (See TOP, Section 2.1 through 2.5).

Conclusion

Consistent with T&C 1A, and in the development of corrective actions, Reclamation coordinated with interested parties to modify water management in order to meet the needs of ESA-listed species. Because the distribution of the EWA is not expected to meet the thresholds identified in T&C 1A and because UKL is not expected to reach boundary conditions identified in T&C 1c, both the T&Cs' coordination/consultation provisions were triggered. As a result, Reclamation, in coordination, with the Services, Tribes, and water users, assessed the needs of listed species in light of the extraordinary hydrologic conditions and developed the proposed temporary water management criteria for April 15 to September 30, 2021, in the context of changing hydrologic conditions and real-time monitoring information.

Accordingly, Reclamation believes that development and implementation of the proposed TOP is

consistent with the letter, spirit and procedural intent of the 2019 NMFS and the 2020 USFWS BiOps and will help address the requirements of all ESA-listed species in a reasonable and informed way. The TOP recognizes and attempts to reconcile the exigent needs of the threatened and endangered species as well as affected tribal and irrigation communities with respect to a very limited amount of water available for the 2021 spring/summer operating season. Reclamation acknowledges that the TOP is unlikely to satisfy all groups but believes that the TOP represents a good-faith effort, developed collaboratively, to meet as many of the competing needs as is practicable.

Reclamation will continue to monitor hydrologic conditions relative to operation of the Project and coordinate further with the Services as new information becomes available and as outlined in the TOP. Reclamation requests confirmation from the Services that the process outlined in T&C 1A and 1c of the NMFS and USFWS BiOps, respectively, has been met. Reclamation also requests acknowledgement that the Services have been provided with the most current and up-to-date hydrologic data and forecasts that Reclamation has based management decisions upon in 2021. Reclamation is committed to continuing to provide updated hydrologic information as the spring and summer conditions continue to change and coordination with the Services continues.

Reclamation appreciates the extensive coordination and collaboration during development of the TOP and the federal agency partnership that facilitated coordination on a very challenging 2021 water year. Should you have any questions or require additional information, please contact Kristen Hiatt, Environmental Branch Chief, by email at (541) 880-2577 or via email at khiatt@usbr.gov.

Attachment (1)

cc: Jim Simondet
National Marine Fisheries Service
1655 Heindon Road
Arcata, CA 95521

Bureau of Reclamation, Klamath Basin Area Office
Klamath Project – Spring/Summer Temporary Operating Procedures
April 13, 2021

Introduction

Critically dry and extraordinary hydrologic conditions in the Klamath River Basin will prevent full simultaneous satisfaction of requirements for ESA-listed species in Upper Klamath Lake (UKL) and the Klamath River, as specified in the 2018 Modified Operations Plan/Interim Operations Plan (IOP) and the BiOps, even without water deliveries to the Klamath Project (Project). As such, Reclamation has implemented the process outlined in Term and Condition (T&C) 1A of the National Marine Fisheries Service's (NMFS) Endangered Species Act (ESA) Section 7(a)(2) *Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response* (2019 NMFS BiOp) issued on March 29, 2019, and T&C 1c of the U.S. Fish and Wildlife Service's (USFWS; collectively the Services) *Biological Opinion on the Effects of the Proposed Interim Klamath Project Operations Plan, effective April 1, 2020, through September 30, 2022, on the Lost River and Shortnose Sucker* (2020 USFWS BiOp; collectively BiOps).

Background

As a result of the extraordinary hydrologic conditions and the requirements necessary to protect endangered suckers in UKL and threatened coho salmon and Chinook salmon (surrogate for endangered Southern Resident Killer Whale) in the Klamath River, some of the thresholds within both BiOps are unlikely to be met during the 2021 spring/summer operating season. As such, in coordination with the Services, Reclamation has identified deviations from the IOP and developed proposed Temporary Operating Procedures (TOP) for Project operations for the 2021 spring/summer operating season to address immediate and temporary competing needs and balance the risks to all threatened and endangered species, in a reasonable manner informed by real-time hydrological and biological data. The below describes Reclamation's TOP relative to UKL elevations, Klamath River flows, and Project deliveries for the 2021 spring/summer operating period, consistent with the requirements of T&C 1A and 1c in 2019 NMFS and 2020 USFWS BiOps, respectively.

Operational Approach

Reclamation proposes the TOP would be in effect from April 15 through September 30, 2021, when Reclamation will revert to the 2020 IOP, which will remain in effect until the earlier of September 30, 2022, or the completion of ESA Section 7 consultations on a new proposed operations plan. The TOP relies on observed hydrologic conditions, the Natural Resource Conservation Service's UKL inflow forecasts, and biological monitoring to guide Reclamation's operations. The TOP includes deviations from the Modified 2018 Operations Plan and 2020 IOP specific to UKL elevations, Surface Flushing Flow (SFF) implementation in the Klamath River, and delivery of Project Supply from UKL. Other than the specific deviations to the IOP that are outlined in this letter, all other operations are expected to be consistent with the 2020 IOP and Modified 2018 Operations Plan, barring an unforeseen

circumstance. Any further deviations arising from continued adverse hydrologic conditions would be addressed as they arise in conference with the Services.

Section 1. Operating Criteria for Upper Klamath Lake and the Klamath River

- A Surface Flushing Flow (SFF) may occur until June 1.
- If UKL elevation < 4,141.6 ft., a SFF may only occur based on the criteria outlined in the real time management section below.
- If 4,141.6 ft. ≤ UKL elevation < 4,141.8 ft., a SFF may take place under the following conditions:
 - Reclamation will operate to ensure a decline in UKL elevation ≤ 0.2 ft., achieved by coinciding the SFF with a hydrologic event, borrowing water from PacifiCorp reservoirs, reducing flush volume through modification of magnitude and/or duration, and accelerated ramp down rates (any of which may be implemented individually or in combination)
 - Real time management guidelines outlined below in Section 2 will help guide implementation of a SFF.
 - Peak SFF discharge will be commensurate with maximum capability of Link River Dam and PacifiCorp’s dams in the hydroelectric reach for *no less than* 24 hours unless a greater magnitude can be achieved in a shorter duration.
 - Additional days of the SFF peak magnitude may be utilized as conditions allow.
- If UKL elevation ≥ 4,141.8 ft., a SFF may take place under the following conditions:
 - Reclamation will operate to ensure a decline in UKL elevation ≤ 0.4 ft., achieved by coinciding with a hydrologic event, borrowing water from PacifiCorp reservoirs, reducing flush volume through modification of magnitude and/or duration, and accelerated ramp down rates (any of which may be implemented individually or in combination)
 - Adaptive management guidelines outlined below in Section 2 relative to sucker and salmon monitoring shall be observed
 - Peak SFF discharge will be commensurate with maximum capability of Link River Dam and dams in the hydroelectric reach for *no less than* 24 hrs
 - Additional days of SFF peak magnitude may be utilized as conditions allow
- Project Supply from UKL will become available to charge Project canals and allow for limited irrigation deliveries beginning May 15. Project Supply may be made available prior to May 15 to begin charging Project canals and provide for limited deliveries if a SFF has already been implemented. Reclamation will track deliveries of Project Supply to ensure they do not interfere with the potential implementation of a SFF between May 15 and June 1. For the 2021 spring/summer operating period, instead of allocating a specific volume from UKL (i.e., Project Supply), Reclamation plans to make available all volume above a UKL elevation of 4,138.3 ft. Reclamation will coordinate with the Services throughout the spring/summer season on Project diversions to address unforeseen circumstances that may arise.
- Reclamation understands the USFWS may begin exercising existing water right transfers to the Lower Klamath National Wildlife Refuge, coincident with the start of Project deliveries from UKL.

Section 2. Real Time Management to Respond to Risk to federally-listed species and deviations from Operational Criteria

The real-time management section outlines how Reclamation and the Services will coordinate and make decisions that respond to evolving environmental conditions and projected risks to listed species. For example, real-time monitoring of salmon disease in the Klamath River and sucker spawning in UKL will inform modification of the water management criteria as otherwise described in Section 1 of the TOP. Using real-time monitoring and forecasting information, Reclamation will meet and confer with the Services to quickly act on opportunities to reduce risk to listed species. Reclamation, with input from the Services, will make the final determination on whether implementation of a SFF will occur based on professional judgement and balancing of risks to species. Key considerations that are expected to trigger a meet and confer process include, but are not limited to:

1. ***Ceratanova shasta* (*C. shasta*) Disease and Water Temperature.** At any point that real time monitoring for spore concentrations indicates spore concentrations are 10 spores/ Liter and a 7-day period indicates an increasing trend, Reclamation shall meet and confer with the Services to consider provision of an immediate flushing flow. The meet and confer discussions will include considerations for potential flow magnitude (influenced by both UKL elevations and accretions), duration, and accelerated ramp rates based upon the considerations in Section 1, and the other real time management considerations outlined below. If real time monitoring for spore concentrations and temperatures indicates a projected risk of mortality greater than 30 percent. Reclamation will initiate to the greatest extent practicable, a SFF, consistent with the meet and confer process described above. The following considerations will inform the practicality of a SFF given the limited water supply and risks to listed species.
2. **Sucker Spawning and Refugial Habitat.** To the degree possible, a SFF will be timed to occur after the peak of sucker spawning based on USGS and Klamath Tribes monitoring data. Reclamation will continue to coordinate with the Services on observed sucker spawning activity to determine the likely peak. If suckers are not using the spawning areas, the meet and confer process should be initiated to determine if the lake elevation requirements listed in Section 1 are necessary to be met before a SFF could be implemented, or Project deliveries could begin. The end of season elevation of 4138.3 ft. is likely to provide sufficient access to Pelican Bay for adult suckers seeking water quality refugia in late summer, as outlined in USFWS 2020 BiOp. Reclamation will work with the Services to manage Project and EWA water through the summer to ensure that this elevation can be met.
3. **Hydrologic Considerations.** Prior to achieving SFF triggers described in Section 1, short-term forecasts may indicate a significant storm event is imminent and may provide sufficient accretions to the Klamath River above Iron Gate Dam to effectively implement a SFF event with a target peak magnitude of 6,030 cfs, without significant reduction to UKL elevation (e.g., less than 0.2 ft). Under this consideration, Reclamation and Services will meet and confer to determine whether to implement a SFF event.

In the event that projected risk of mortality is greater than 30 percent, Reclamation in coordination with the Services will evaluate water supply forecasts to determine if a delay in

initiating a SFF will result in greater effectiveness and water supply efficiencies and time initiation accordingly.

Additionally, if UKL elevations and the hydrologic event are insufficient to achieve a target flow of near 6,030 cfs, or if UKL elevations would decrease more than 0.2 feet, Reclamation and the Services will meet and confer to determine whether the achievable flow magnitude would achieve the desired reductions in salmon disease risk.

4. **Project Deliveries.** During the spring/summer operating period, Reclamation and the Services will coordinate on Project deliveries.
5. **Water Quality Conditions Inhibiting *C. shasta* Transmission.** Water temperatures influence disease transmission rates. In the event of an extended cold spring period in which Klamath River water temperatures below Iron Gate dam remain below 10 degrees Celsius, and disease considerations described in Section 2.1 above are not met, Reclamation and the Services will meet and confer to determine whether to delay or forego a SFF event in 2021.