



United States Department of the Interior

BUREAU OF RECLAMATION
Klamath Basin Area Office
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June 3, 2021

VIA ELECTRONIC MAIL

Memorandum

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

From: Jared Bottcher
Acting Area Manager

Subject: Adjustment to the Bureau of Reclamation's Temporary Operating Procedures and Continued Compliance with the Adaptive Management and Corrective Actions Components of 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 memorandum is for the Bureau of Reclamation (Reclamation) to document continued compliance with the adaptive management and corrective action components of 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). More specifically, Reclamation's goal is to transmit an adjustment to Reclamation's Temporary Operating Procedures, herein referred to as the *Water Supply Management Protocol for June through September 2021* (Protocol) that would be applicable for the remainder of the spring/summer operational period of water year 2021.

Background

Critically dry and extraordinary hydrologic conditions in the Klamath River Basin continue to prevent full simultaneous satisfaction of requirements for ESA-listed species in Upper Klamath Lake (UKL) and the Klamath River, as specified in the Services' BiOps, even without authorized water deliveries to the Klamath Project (Project) from Upper Klamath Lake or the Klamath

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River¹. More specifically, the May 1 Natural Resources Conservation Service's (NRCS) UKL inflow forecast of 220,000 AF for March-September decreased by 85,000 AF as compared to the April 1 forecast (305,000 AF). Despite this reduction, hydrologic modelling utilizing the May 1 and June 1, 2021, NRCS 50 percent exceedance inflow forecast for UKL indicates the Services' goals of an annual minimum for UKL of 4,138.0 feet (ft), and Klamath River minimum flows at Iron Gate Dam (IGD) for the months of June (1,025 cubic feet per second (cfs)), July (900 cfs), August (900 cfs), and September (1,000 cfs) may still be possible without alteration to river flows or lake elevation.

However, further deterioration of the forecasted hydrology is plausible, and in accordance with the meet and confer process outlined in T&C 1A and 1c of the 2019 NMFS BiOp and 2020 USFWS BiOp, respectively, and as reiterated in the TOP, Reclamation has coordinated with the Services to develop the Protocol. This Protocol serves as an adjustment to the TOP that provides for adaptive management and sharing of effects to UKL and Klamath River minimums in the event that water supply falls short of the June 1 NRCS 50 percent exceedance inflow forecast.

Proposed Protocol

This proposed Protocol among Reclamation and the Services to adjust the existing TOP is made pursuant to the meet and confer provisions in the Services' BiOps. The June 1, 2021, NRCS forecast will provide Reclamation with new information to determine if water supply forecasts have improved or deteriorated, and the extent to which implementation of the below described protocol is necessary.

Operating Criteria

Water Supply Management Protocol for June through September 2021

Net inflow to UKL, based on the June 1 NRCS 50 percent exceedance forecast, will be distributed throughout the June through September time period based on historical inflow patterns in dry years. UKL inflow performance based on the June 1 NRCS 50 percent exceedance forecast will be evaluated by Reclamation in coordination with the Services on a weekly basis as a relationship between observed cumulative net inflow and projected cumulative net inflow. Seasonal June through September cumulative net inflow volumes will be calculated starting on June 1.

Technical experts from Reclamation and the Services will meet on a weekly basis to track cumulative inflow volumes and determine performance of observed inflows to UKL relative to projected inflows based on the June 1 NRCS 50 percent exceedance forecast. An operational week of Friday through Thursday will be established. Technical experts from Reclamation and the Services will meet every Thursday to evaluate the preceding week's inflows, such that a Klamath River flow schedule can be transmitted to PacifiCorp for implementation on Friday. These weekly Agency Coordination Hydro Team² meetings will begin on Thursday, June 3.

¹ On May 12, 2021, Reclamation announced that due to the increasing extreme drought conditions and the insufficiency of the expected water supply, the Project's "A" Canal which typically provides access to UKL water supplies for over 130,000 acres of farmland, will remain closed for the 2021 irrigation season. Reclamation simultaneously announced that after meeting and conferring with the Services no surface flushing flow for the benefit of salmon would be implemented in 2021.

² "Agency Coordination Hydro Team" refers to technical experts from Reclamation and the Services that participate in a hydrologic focused subgroup of the Agency Coordination Team.

However, to reduce potential effects to juvenile salmonids in early June, no action to reduce river flows will be taken prior to June 17. Based on the previous week's inflow calculations, instream flows and UKL elevation target may be adjusted as necessary to compensate for inflow shortfalls. Any changes in river flows would be instituted for the entire following week (i.e., adjustments would not occur in the middle of an operational week). In addition to providing the flow schedule to PacifiCorp, Reclamation will also send a weekly email to the Services, Tribes³, and key stakeholders that details the cumulative inflow condition and any adjustments made to river flows or the UKL elevation target. Reclamation and the Services will meet with Tribes and key stakeholders to discuss modifications as requested.

If observed cumulative UKL inflows for any given operational week exceed expectations, the following actions may be taken, as situationally appropriate. If river flows are below BiOp minimums and UKL elevation target is below 4,138.0 ft. for the evaluation period, any volume observed above the total cumulative inflow volume would be evenly split and used to incrementally increase IGD flows and the UKL elevation target commensurately. If IGD flows are at minimums and inflows exceed expectations for a given week, IGD flows would remain at the monthly minimum value and the additional inflow volume would remain in UKL to serve as a buffer for future UKL elevation shortfalls and river flows below minimums. If UKL target elevations for any given evaluation period exceed 4,138.0 ft. and if a reduction in IGD flows is required as a result of inflow shortfall for that period, Reclamation and the Services will coordinate to balance UKL needs and minimize reductions in river flows.

In the event that observed inflows lag behind forecasted inflows, net inflow volumetric shortfalls will be calculated, and as recommended by the Services, deviations below minimums utilizing a 50/50 sharing approach would be implemented. As a starting point, NMFS has recommended and agreed to the implementation of reducing IGD minimum flows to Environmental Base Flows (EBF), as described in the 2019 NMFS BiOp for the months of June through September (Table 1). The volume conserved by this reduction is 8,800 acre-feet (AF); note that June TOP flows are equal to June EBF flows and the majority of volume that can be conserved between TOP and EBF flows occurs in July. Likewise, USFWS has recommended and agreed to the implementation of an equal initial reduction in UKL elevation target of 8,800 AF; the UKL elevation associated with an 8,800 AF reduction from 4,138.0 ft. is 4,137.87 ft. Accordingly, this proposed Protocol initially contemplates a potential shortfall in inflow to UKL of up to 17,600 AF. If net UKL inflow forecasts indicate additional reductions would be required beyond the initial shortfall volume, Reclamation will coordinate with the Services and request the Services recommend and agree to the implementation of additional shared reduction in IGD flows and UKL elevations as early as June 17.

Table 1. Hardy et al, 2006⁴ Environmental Base Flows and Reclamation's Temporary Operating Procedures minimum flows (2019 NMFS Biological Opinion minimums)

³ "Tribes" refers to The Klamath Tribes, Yurok Tribe, Karuk Tribe, and Hoopa Valley Tribe.

⁴ Hardy, T., R. Addley, and E. Saraeva. 2006. Evaluation of Flow Needs in the Klamath River Phase II. Final Report. Institute for Natural Systems Engineering, Utah Water Research Laboratory, Utah State University, Logan, Utah. 84322-4110.

Month	Hardy EBF (cfs)	Reclamation Proposed Action Minimum Flows (cfs)
June	1,025	1,025
July	805	900
August	880	900
September	970	1,000

If inflows exceed the amount needed to meet the 2019 NMFS BiOp river minimums and maintain UKL elevation at 4,138.0 ft., the surplus inflow volume would initially be held in UKL to enhance conditions for suckers and increase the likelihood of filling UKL during the 2022 water year. Reclamation and the Services will coordinate on water management should other conditions arise that may warrant release of some portion of the surplus volume. If a salmonid mortality event in the Klamath River occurs when UKL target elevation is higher than 4,138.0 ft., IGD minimums could be augmented as necessary to help ameliorate the impacts.

Reclamation's determination of risk to salmon would be informed by salmon experts with the Services and Tribes. Any additional releases from UKL from the surplus volume above 4,138.0 ft. would be made consistent with Reclamation's legal authorities and contractual priorities and would be coordinated with the Services in advance.

Conclusion

Consistent with T&C 1A of the 2019 NMFS BiOp and T&C 1c of the 2020 USFWS BiOp, Reclamation coordinated with the Services and assessed the needs of listed species in light of the dynamic, extraordinary hydrologic conditions and developed the proposed Protocol.

Accordingly, Reclamation believes that implementation of the proposed Protocol, as necessary, is consistent with the procedural intent and spirit of the Services' BiOps and would help address ESA-listed species requirements in a reasonable and informed way. The proposed Protocol represents a good-faith effort, developed collaboratively, to meet as many of these requirements as is practicable.

Reclamation will continue to monitor hydrologic conditions and coordinate further with the Services, Tribes, and key stakeholders as new information becomes available and as outlined above. Reclamation requests confirmation from the Services that the Protocol is consistent with the process outlined in T&C 1A and 1c of the NMFS and USFWS BiOps, respectively, and acknowledgement that Reclamation has provided the Services with the most current hydrologic data and forecasts.

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

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