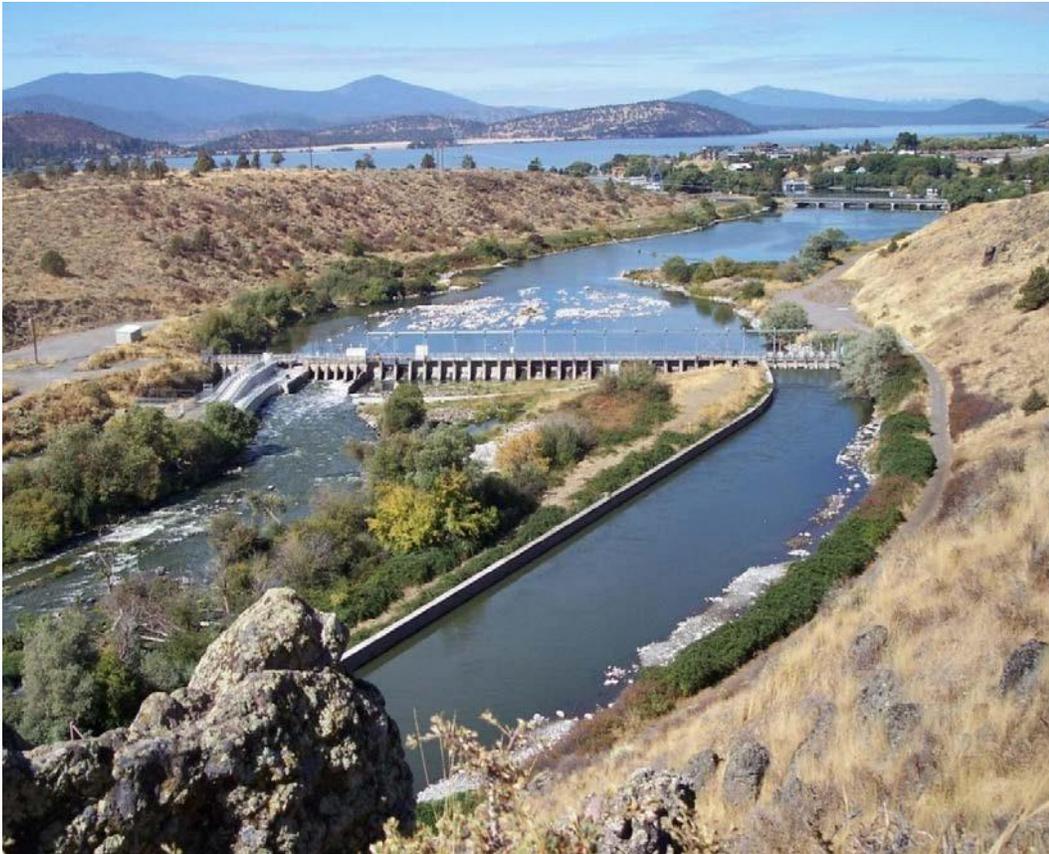




— BUREAU OF —
RECLAMATION

2023 Annual Operations Plan

Klamath Project, Oregon-California
Interior Region 10 - California-Great Basin



Mission Statements

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Introduction

The Bureau of Reclamation's (Reclamation) Klamath Project (Project) delivers water for irrigation and related purposes to approximately 230,000 acres in southern Oregon and northern California. This 2023 Operations Plan (Plan) describes planned Project operations between April 1 and September 30, 2023¹ (as further described below), based upon current and projected hydrologic conditions. This Plan necessarily reflects and accounts for the ongoing drought conditions for the fourth consecutive year afflicting the Klamath Basin.

2023 Project Operations

Reclamation's ability to implement the operations set forth in its December 21, 2018 biological assessment (BA), as supplemented by the 2020 Interim Operations Plan (collectively referred to as the IOP), depends in large part on natural hydrologic conditions beyond Reclamation's control. In the springs/summers of 2021 and 2022, Reclamation was unable to fully and simultaneously implement scheduled operations under the IOP, and in the winter of 2023, Reclamation projected that it would not be able to fully and simultaneously implement scheduled operations under the IOP in the spring of 2023 without modifications to winter operations. In response, Reclamation adaptively managed Project operations in those periods by implementing the 2021 Temporary Operating Procedures (TOP), the 2022 TOP, and the 2023 January TOP, respectively.

For the remainder of this water year, Reclamation will operate the Project using the formulaic approach to operations set forth in its December 21, 2018 biological assessment, as supplemented by the 2020 Interim Operations Plan (collectively referred to as the IOP), while using conservative forecasting. As a result, conditions for species listed as threatened or endangered under the Endangered Species Act (ESA) in Upper Klamath Lake (UKL), Gerber and Clear Lake reservoirs, and the Klamath River, are anticipated to be within the scope of conditions as analyzed in 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 the U.S. Fish and Wildlife Service's (USFWS; collectively Services) *Biological Opinion on the Effects of the Proposed Interim Klamath Project Operations Plan, effective January 13, 2023, through September 30, 2023, on the Lost River and Shortnose Sucker* (2023 USFWS BiOp), issued on January 13, 2023. Reclamation does not anticipate or propose instituting temporary operating procedures for the remainder of this water year.

¹ It is recognized that although the operating season and water year ends on September 30 of each year, residual Spring/Summer diversions continue consistent with contracts, allowing the timing of delivery of announced Spring/Summer supplies to some irrigators to finish crop production through mid-November. Reclamation will continue to manage operations during the Fall/Winter, 2023-2024 period consistent with the IOP.

Project operations after the current water year ending on September 30, 2023 are beyond the scope of this Plan, and will be set out in a subsequent operations plan. Barring extraordinary hydrologic conditions outside of those experienced in the period of record for the Klamath Basin, Reclamation will continue operating the Klamath Project under the formulaic distribution approach of the 2018 Plan/2020 IOP through the end of September 2024.

With specific regard to the coming fall/winter period of October 1, 2023 to March 31, 2024, based on current conditions, Reclamation anticipates that any irrigation diversions it may authorize during that period will be calculated in accordance with the formulaic approach of the IOP, thereby producing effects to ESA-listed species within the scope of those analyzed in the Services' current BiOps. Any such diversions would not be expected to interfere with full and simultaneous compliance with Reclamation's ESA obligations during the next spring/summer period of April 1, 2024 to September 30, 2024. However, should Reclamation project at any time during the coming fall or winter that UKL is unlikely to reach an elevation of 4,142.00 feet (all elevations BOR datum) by April 1, 2024, Reclamation will immediately order the curtailment of any previously authorized irrigation diversions for Project purposes to the extent necessary to allow full compliance with ESA requirements in spring 2024.

In preparation for operating during this period, Reclamation intends to complete reinitiated ESA consultations with FWS by September 30, 2023 and NMFS by March 31, 2024, when their current BiOps are each set to expire, respectively.

Past September 30, 2024, Reclamation anticipates completion of a new, long-term plan of operations for the Project and new BiOps from both Services.

Upper Klamath Lake & Klamath River

Upper Klamath Lake

During this irrigation season, UKL will be operated under the IOP, with two modifications to guard against shortfalls. These measures include the following:

- In April, Reclamation calculated allocations for irrigation and for the Environmental Water Account (EWA) using a forecast that was more conservative regarding the likelihood of UKL reaching an April 1, 2024 elevation of 4,142.00 feet than suggested by the IOP to guard against over-releases during this spring that could challenge compliance with Klamath Project ESA obligations this fall or into next year. Using this conservative forecast was consistent with the approach used in now-expired January 2023 Temporary Operating Procedure to determine the need for reductions below minimum flows downstream of Iron Gate Dam to meet ESA requirements this spring. For the remainder of the water year, Reclamation will continue to use a forecast that is informed by several sources of information including the California Nevada River Forecast Center (CNRFC) but will be no more optimistic about inflow than the Natural Resources Conservation Service (NRCS) 50th percentile noted in the IOP. Reclamation will assure that the volume planned for meets all ESA obligations with the water supply allocation.
- Under the formulaic approach to implementing the IOP and using conservative forecasting

methods, the calculated Project irrigation allocation for this year will result in achieving all boundary conditions in UKL required by the FWS BiOp for the remainder of the water year, and that will surpass the FWS BiOp's minimum end of year elevation requirement of 4,138 feet by concluding the irrigation season with an end of year minimum elevation of 4,139.2 feet. Reclamation believes that managing to this elevation this water year is appropriate to avoid conditions which could interfere with its ability to fulfill its ESA obligations throughout this irrigation season and the subsequent fall/winter period. Reclamation will therefore manage Project operations this water year to achieve 4,139.2 feet elevation on September 30, 2023, even if factors affecting the formulaic approach would otherwise lower the end of year elevation below 4,139.2 feet.

Klamath River

Reclamation has determined that the EWA distribution is expected to meet the expenditure rates identified in Term and Condition (T&C) 1A of the 2019 NMFS Incidental Take Statement through the end of the water year on September 30, 2023, based on observed and projected river releases from UKL (for meeting Iron Gate Dam (IGD) target flows).

Reclamation is not anticipating or proposing deviations to the minimum spring/summer Klamath River target flows at IGD, analyzed in the 2019 NMFS BiOp, which consist of flows of 1,325 cubic feet per second (cfs) during the month of April; 1,175 cfs in May; 1,025 cfs in June; 900 cfs in July and August; and 1,000 cfs in September.

Surface Flushing Flow

Consistent with *Section 1.3.2.6.4 Disease Mitigation and Habitat Flows* of the NMFS 2019 BiOp, Reclamation implemented a surface flushing flow on April 19, 2023. Releases at Link River Dam from UKL exceeded the minimum target flow event of 6,030 cfs for 72 hours at IGD, averaging 6,162 cfs. Following the flushing flow, releases from Iron Gate Dam were ramped down through the end of April.

Flow Augmentation

Beginning May 1, as per the IOP, which supplements the 2018 BA, 60,000 AF of flow augmentation was added to the EWA on top of the formulaic river flows calculated under the IOP, resulting in increased flows from Iron Gate through mid-June, according to recommendations from the FASTA team.

Project Supply

Reclamation will manage the Project Supply in accordance with the IOP directions, although modified as specified above. With the above considerations, Reclamation has announced water supply allocation for use by the Project and for the EWA. An initial water supply for Project operations was announced on April 10 to allow for timely availability of water supplies for irrigation operations and operations for salmon. The following allocation information has been updated due to improved hydrologic conditions, in a manner consistent with the IOP and the drought considerations as previously described.

- Environmental Water Account = 400,000 acre-feet
- Flow Augmentation = 48,000 acre-feet

- End of Year Elevation of Upper Klamath Lake = 4,139.2 feet elevation
- Klamath Project water supplies = 215,000 acre-feet

As of May 19, the water available for ESA flows and allocation for Klamath Project supplies from Upper Klamath Lake have been increased, consistent with the IOP and the drought considerations as follows:

- Environmental Water Account = 462,000 acre-feet
- Flow Augmentation = 60,000 acre-feet
- End of Year Elevation of Upper Klamath Lake = 4,139.2 feet elevation
- Klamath Project water supplies = 260,000 acre-feet

Reclamation has determined that the Project Supply allocation from UKL and the Klamath River for the 2023 spring/summer irrigation season will likely provide full deliveries to Repayment and Settlement Contractors (“A” Contractors) and limited water will be available for other Project contractors. Irrigation diversions commenced on May 1, 2023.

As in past years, Reclamation will monitor for unauthorized or out-of-priority diversions of water that may impact operations and will decrease project supplies accordingly. All surface water diversions from the Klamath River that originate from UKL and are applied to Project lands, regardless of the priority of the contractor or claimed source of water rights, will be counted against project supplies in UKL. As in years past, Reclamation will restrict the eligibility for the financial assistance announced April 13, 2023 based on evidence of unauthorized diversions.

Distribution

Reclamation will adaptively manage distribution of the Project Supply through a collaborative effort with Project contractors and in conferral with the Services. The amount of allocated Project Supply that is available for diversion at any point in time will depend on observed inflows and UKL elevations during the spring/summer period and is subject to curtailment to meet legal requirements.

Real-Time Management

The estimated available water supply is tracked daily, with updates regarding remaining Project Supply to Project water users occurring approximately every week during the irrigation season or as needed. If the Project Supply must be curtailed to meet the commitments described above, Reclamation will provide notification in writing.

Reclamation will also be coordinating with Project contractors on the need for a Project Drought Plan. Until such time that Reclamation releases a Drought Plan, deliveries made to irrigators will occur in line with contractual priorities. To the extent that districts who are entitled to the supply decide not to split evenly or if otherwise all districts mutually agree to allocate the available supply (as defined by Reclamation in the Plan or as modified in subsequent plans) in a different manner of priority outside the contractual priorities, it is incumbent upon the districts to fully document such agreement and communicate it to Reclamation.

Clear Lake Reservoir

The estimated water supply available from Clear Lake Reservoir is based on several factors, including current hydrologic conditions and projected inflows for April through September, the end of September minimum elevation analyzed in the 2023 USFWS BiOp, as well as the rate and volume of irrigation releases and non-beneficial losses (e.g., evaporation and seepage). The estimated available water supply is tracked daily, with updates to Project water users occurring approximately every two weeks during the irrigation season or as needed.

As of May 16, 2023, the water surface elevation in Clear Lake Reservoir was 4,526.44 feet, representing a total volume of 134,252 acre-feet (AF) of stored water. The end of September minimum water surface elevation in Clear Lake Reservoir analyzed under the 2023 USFWS BiOp is 4,520.60 feet. With the anticipated inflows and estimated evaporation and seepage rates, Reclamation estimates there will be a full Project supply available from Clear Lake Reservoir during the 2023 spring/summer irrigation season. The average historic Project demand from Clear Lake Reservoir is 35,000 AF to 40,000 AF.

Gerber Reservoir

Similar to Clear Lake Reservoir, the estimated Project water supply available from Gerber Reservoir is based on several factors, including current hydrologic conditions, projected inflows for April through September, the end of September minimum elevation analyzed under the 2023 USFWS BiOp, as well as the rate and volume of irrigation releases and non-beneficial losses (e.g., evaporation and seepage). The estimated available water supply is tracked daily, with updates to Project water users provided approximately every two weeks during the irrigation season or as needed.

The water surface elevation of Gerber Reservoir, as of May 16, 2023, was 4,822.35 feet, representing a total volume of 49,341 AF of stored water. The end of September minimum water surface elevation in Gerber Reservoir analyzed in the 2023 USFWS BiOp is 4,798.10 feet. With the anticipated rates of evaporation and seepage, Reclamation estimates there will be a full project supply (approximately 35,000 AF) available from Gerber Reservoir during the 2023 spring/summer irrigation season.

Lost River

Natural runoff and return flows in the Lost River may also be available at certain times for irrigation use within the Project. Diversions from the Lost River during the spring-summer irrigation season are not included in the calculation of the Project Supply available from UKL and the Klamath River. As such, the Project water supply from the Lost River is primarily constrained by the physical availability of water, primarily from return flows. Reclamation does not estimate the available supply from the Lost River during the spring/summer irrigation season, but rather allows Project water users to divert the supply as it becomes available, consistent with the terms of their respective contracts and in accordance with the annual Drought Plan.

Other Operational Considerations

Klamath Project Drought Response Program

Reclamation is preparing to enter into a new five-year cooperative agreement with the Klamath Project Drought Response Agency (KPDRA), a joint powers state entity in Oregon and California organized in 2018 and comprised of representatives of Project districts. Their primary function is to work with Reclamation to administer programs to align water supply and demand on the Project pursuant to the Klamath Basin Water Supply Enhancement Act of 2000 (114 Stat. 2221) as amended (132 Stat. 3886 and 134 Stat. 976).

Reclamation is providing up to \$9.85 million in funding to the KPDRA in 2023 for this purpose. 2023 programs are anticipated to focus on reducing demand for Project water.

All programs administered by the KPDRA under the cooperative agreement are subject to Reclamation approval, which would be conditioned on the ability of the proposed program to align Project water supply and demand, available funding, and other considerations.

Voluntary Project Water Transfers

Reclamation supports voluntary transfers of Project water as a means of promoting flexibility in managing water supplies and maximizing Project benefits. Accordingly, subject to its approval as described below, Reclamation will allow transfers of Project water, within the limits of applicable federal and state law.

Reclamation's prior written approval is required to transfer Project water between Project contracts in accordance with those contracts. Project contractors also have the discretion to approve transfers of Project water within their designated service areas independent of Reclamation's approval process. Individual landowners who are interested in transferring Project water are advised to work with their respective districts to obtain Reclamation's approval of Project water transfers. Transfers of Project water to Lower Klamath National Wildlife Refuge (LKNWR) or Tule Lake National Wildlife Refuge will also require the approval of USFWS. Compliance with other applicable federal and state laws may also be necessary.

Water transfers within the Project will also be contingent, in part, upon the ability to accurately measure corresponding water use, on both the transferring and receiving lands, in order to ensure that the amount of water used does not exceed the associated total available duty.

Finally, Reclamation may require that parties to a proposed transfer first demonstrate compliance with applicable state law. Reclamation will coordinate with Oregon Water Resources Department (OWRD) to facilitate any transfers approved by OWRD.

Voluntary Water Conservation

There are a number of active conservation efforts that Project water users can employ to conserve water and to extend available Project water supplies. Such strategies range from Project-wide actions, to district initiatives, to individual efforts at the farm or field level.

Reclamation works with districts and individuals to encourage independent initiatives aimed at conserving Project water supplies. District-level conservation initiatives may include rotating water use among irrigators that receive water from a particular canal or lateral, de-watering certain irrigation laterals when not in use, and limiting tailwater flows at the ends of canals and laterals. Individual, on-field, efforts may include planting less water intensive crops, using high-efficiency irrigation systems such as sprinklers or gated pipes, and employing “deficit” irrigation techniques, where water is applied at less than the full consumptive use demand of a particular crop type. Reclamation encourages Project water users to employ all available tools to conserve water and keep demands at a minimum, especially when water shortages exist.

To assist in on-field conservation efforts, Reclamation operates AgriMet stations in the Klamath Basin, which use site-specific weather data to estimate evapotranspiration (i.e., crop water use) for various crop types typically grown within the Project. This information can be used to identify the required amount of water to apply to a crop based on current weather conditions and growth stage. AgriMet crop water use charts for the Klamath Basin are updated each morning, and can be found online at:

<https://www.usbr.gov/pn/agrimet/agrimetmap/agrimap.html>

Lower Klamath National Wildlife Refuge Deliveries

In accordance with this Plan, water from Project Supply (as described above) is only available for delivery to LKNWR when consistent with Reclamation’s contractual and other legal obligations.

Voluntary transfers, exchanges, or other arrangements can also make water available to LKNWR. Subject to these conditions, LKNWR can use any portion of Project Supply, when available to the rest of the Project, through November 30.

Any water rights transferred to LKNWR pursuant to Oregon or California law, such as those water rights originally appurtenant to the Agency Lake and Barnes Ranch properties upstream of UKL, are separate from the water available to LKNWR from UKL under the Project Supply. USFWS has federal administrative responsibility over the exercise of these non-Project water rights.