



— BUREAU OF —
RECLAMATION

2025 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; 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 2025 Annual Operations Plan (Plan) describes Project operations that are anticipated to occur between April 1 and September 30, 2025¹ (as further described below), based upon current and projected hydrologic conditions.

The United States operates the Project pursuant to the Reclamation Act of 1902, ch. 1093, 32 Stat. 388, and acts amendatory thereof and supplementary thereto, commonly known and referred to as Federal Reclamation Law, as well as other federal laws and regulations, including but not limited to the Endangered Species Act of 1973 (ESA), 16 U.S.C. §§1531-1544, 87 Stat. 844, as amended. Accordingly, and consistent with Reclamation Law and relevant Reclamation contracts, this Plan constitutes a reasonable rule that supplies the necessary administrative details to lawfully and effectively operate the Project.

Activities that occurred in the Klamath River watershed in 2024 affect Klamath Project operations, specifically removal of four PacifiCorp dams on the Klamath River and reconnection of the Agency Lake - Barnes Unit of the Upper Klamath National Wildlife Refuge (Agency-Barnes) to Upper Klamath Lake (UKL). The removal of four hydropower dams (JC Boyle, Copco1, Copco2, and Iron Gate) on the lower Klamath River by the Klamath River Renewal Corporation began in late 2023 and was completed by October of 2024. As a result, the compliance point for ESA-mandated flows in the Klamath River has moved upstream to Keno Dam, the lowest remaining dam on the Klamath River, which is now owned and operated by Reclamation. The Klamath River has now become free-flowing from Keno to the Pacific Ocean. The reconnection of Agency-Barnes began on December 20, 2024, and was completed in January 2025. The reconnection added approximately 70 thousand acre-feet (TAF) of storage volume to UKL, which affects the stage-volume curve and net inflow calculations.

Reclamation's Plan is consistent with the conditions anticipated to occur for species listed as threatened or endangered under the ESA in UKL, Gerber and Clear Lake reservoirs, and the Klamath River, as specified 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* (2024 NMFS BiOp), issued on October 28, 2024, and the U.S. Fish and Wildlife Service's (USFWS; collectively Services) *Concurrence and Biological Opinion for Klamath Project Operations from November 15, 2024, to October 31, 2029* (2024 USFWS BiOp), issued on November 15, 2024. References to Deferred Project Supply (DPS), Flexible Flow Account (FFA), and base flows for the Klamath River within this Plan are in accordance with these BiOps.

¹ Although the operating season and water year ends on September 30 of each year, a limited amount of final spring/summer diversions continue until mid-November for some irrigators to finish crop production.

Initial Hydrologic Conditions

Hydrologic conditions setting the stage for this year's Plan include the dam removal on the Klamath River and the reconnection of Agency-Barnes wetlands. Other factors include an above average upper basin snowpack and precipitation, the combination of the 50% Normalized Wetness Index (NWI) and 50% Natural Resource Conservation Service (NRCS) inflow forecast projecting high inflows, and the above normal elevations of the Project's primary reservoirs: UKL, Clear Lake Reservoir, and Gerber Reservoir.

The Klamath Basin received above normal precipitation over the fall/winter period preceding this Plan, with 182% of median snow water equivalent, 140% of precipitation median at SNOTEL sites as of April 8, and 111% of average precipitation at the Klamath Falls airport on the basin floor as of April 7. Based on the April 1 forecast, the anticipated April-September UKL inflow according to the NWI 50% exceedance estimate cited in the new BiOps is 613 TAF, while the April 1 NRCS inflow forecast is 720 TAF, 203% of the 1991-2020 median.

As of April 7, UKL elevation is 4,143.11 feet, representing 625.8 TAF of storage; Clear Lake Reservoir is at 4,529.39 feet with 193.6 TAF of storage, and Gerber Reservoir is at 4,831.70 feet with 80.5 TAF of storage. All elevations are in Reclamation datum.

Due to the wetter hydrology, a couple of large flow events have already occurred on the Klamath River during the current water year. Measured at the gage at the old Iron Gate Dam site, flows on December 29, 2024, reached a brief peak of 8,700 cubic feet per second (cfs) resulting largely from accretions below Keno Dam. On February 27, 2025, a pulse flow used the FFA to increase releases at Keno Dam from 3,300 cfs to over 9,000 cfs, resulting in a peak of 11,700 cfs at Iron Gate later that same day, using up all 35 TAF of the accumulated FFA. UKL elevations reached the flood control curve and flows were adjusted by March 18, 2025.

Reflecting the persistent wetter conditions, Reclamation has diverted about 70 TAF of water to Lower Klamath National Wildlife Refuge (LKNWR) and Tule Lake National Wildlife Refuge (TLNWR) during the 2025 water year as of April 7. The DPS is currently 22 TAF. Roughly 32 TAF of the DPS was released from UKL during flood control operations. Consistent with the 2024 USFWS and NMFS BiOps, accumulation of DPS can continue through the irrigation season with potential releases from the east side of the project, such as Gerber Reservoir, and return flows through D Plant or Klamath Straits Drain reaching the Klamath River.

2025 Project Operations

Under current hydrologic conditions, Reclamation will continue to operate the Project to allow for irrigation, flood control measures, tribal trust responsibilities, and benefits to ESA-listed species based on real-time monitoring and forecasting information. Reclamation will utilize observed hydrologic conditions, inflow forecasts, and biological monitoring related to ESA-listed species and their critical habitat to guide Project operations. Additionally, Reclamation will continue to coordinate Project operations with the Services, and when necessary, any deviations from the Plan will be addressed through collaborative adaptive management consistent with obligations in the respective BiOps.

The developing Klamath River channel structure and Agency Lake/Barnes Ranch reconnection activities may result in extraordinary hydrologic conditions outside the scope analyzed by the Services in their respective BiOps. If extraordinary hydrologic conditions present themselves and Reclamation anticipates that operations will deviate or have deviated from the modeled outputs under the Proposed Action, under Term and Condition (T&C) 1A of the 2024 NMFS BiOp and T&C 1a of the 2024 USFWS BiOp, Reclamation will immediately notify and confer or consult with the Services to communicate the impact of these non-Reclamation activities on Reclamation's ability to operate in conformance with the BiOps, and to coordinate on the corrective actions by which Reclamation may adaptively manage to protect ESA-listed species. This conversation will also include stakeholders engaged in the Klamath Basin Collaborative technical and management teams, including Klamath Basin Tribes, the Klamath Water Users Association, Project contractors, the Services, Oregon Water Resources Department (OWRD), the Bureau of Indian Affairs, and leadership from the Department of the Interior and the Department of Commerce.

Following precedents established in previous years, Reclamation retains discretion to update or amend the Plan as conditions change or as new information becomes available.

Use of Forecasts

Per the 2024 BiOps, a combination of forecasts will be used to project net inflows to UKL. After discussions with the Services, a combination of the NRCS and NWI forecasts was determined to be most accurate to approach the 2025 irrigation season. The projected net inflow based on firm and variable components is used to determine river releases, Project supply, and flood control releases, among other operational parameters.

The firm component is computed using the April 1st UKL storage of 586 TAF and the April-September NWI-NRCS 95% exceedance inflow forecast issued on April 16. The variable component is based on the April-September NWI-NRCS 50% exceedance inflow forecast issued on June 1.

Klamath River Operations

Reclamation will maintain spring/summer Klamath River target flows at Keno Dam as analyzed in the 2024 NMFS BiOp. These flows are computed using a daily river base flow multiplied by a coefficient based on current hydrologic conditions and UKL elevation. River base flows are the lowest flows that will ever be targeted for release from Keno Dam (Table 1).

Table 1. Keno Base Flows for Klamath River (cfs).

October	November	December	January	February	March
750	750	650	650	650	700
April	May	June	July	August	September
1,000	900	750	650	650	750

Flexible Flow Account

There is no longer an Environmental Water Account (EWA), associated flow augmentation, or surface flushing flow as found in the 2019 BiOp and subsequent Interim Operations Plans. The current operations plan establishes a FFA to provide a volume for uses similar to the EWA. The FFA operation defers the use of various amounts of water targeted for release to the Klamath River during fall/winter, storing the accumulating volume in UKL during the October 1 to March 1 accrual period according to an Operations Index that reflects hydrologic conditions. This water year's FFA account of 35 TAF was released as an early season pulse flow from February 27 to March 10, 2025.

This year, in coordination with NMFS and basin stakeholders, the full FFA volume (35 TAF) was released downstream as an early season pulse flow from February 27 to March 10, 2025.

Boat Dance

The Yurok Tribe's Boat Dance on the Klamath River occurs only during even years, so the Project is not responsible for providing ceremony flows in 2025.

Project Supply

The forecasted Project supply at the start of the 2025 irrigation season is expected to meet anticipated Project demands. Anticipated demands are based on current hydrologic conditions, historical use and historical use patterns.

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Reclamation has determined that the initial Project supply calculations comply with the 2024 Project BiOps. Detailed calculations using the Keno Release Model, as required under the BiOps,

are listed below. These values will be updated in May and June in accordance with the relevant BiOps and will be shared with the Real Time Operations group.

Firm storage (April 1)	93 TAF
Firm inflow (April 15)	138 TAF
June Variable	45 TAF
Deferred project supply and other sources (current and projected)	53 TAF

The initial Project Supply share from the firm and variable components has been calculated by the Keno Release Model to be approximately 277 TAF with an additional 53 TAF anticipated to be available from DPS and other Project sources, resulting in an initial Project Supply of 330 TAF from UKL. Reclamation anticipates reassessment of Project Supply quantities in May and June in accord with the relevant BiOps. These updated calculations will be shared with the Real Time Operations group and will supersede the initial number at the time of release.

DPS is additional water that Reclamation has allocated to Klamath Project irrigators after meeting all relevant legal obligations but that Klamath Project irrigators forego for potential future diversion. DPS may be derived from either UKL or from the Lost River. For example, Lost River diversions and F/FF pumping into the Keno Impoundment that are not directly re-diverted can accumulate as a DPS in UKL, so long as they result in a calculable reduction in Link River Dam releases (through mass balance) needed to meet targeted flow releases from Keno Dam. Instances such as during flood control releases do not accumulate DPS because there is not an offset to the releases from Link River Dam. Each day DPS is calculated under the above conditions, it is added to the DPS account in UKL.

As of April 8, about 22 TAF of DPS has accumulated in UKL. Nearly 32 TAF was lost during flood control operations from March 18 to April 6. Future return flows from the Lost River and FF pumping into the Klamath River can be used to accumulate additional DPS.

DPS can also be accumulated in UKL using the 43 TAF dedicated historical wetland habitat supply from UKL storage that is intended to keep LKNWR Unit 2 and TLNWR Sump 1A water surface elevations at specified environmental thresholds. If these environmental thresholds can be maintained through a combination of redistributed drainage from irrigated lands and flow from the Lost River, the 43 TAF (or remaining portion of the dedicated historical wetland habitat supply) will be credited to the Project on a uniform schedule from April 2 to September 30. Reclamation and the Services will coordinate throughout the irrigation season to ensure that there are sufficient water supplies for Unit 2 and Sump 1A.

As in past years, Reclamation will monitor for unauthorized or out-of-priority diversions of water that may impact operations and will decrease Project supply 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 supply in UKL unless the reason for release is flood operations. As in past years, Reclamation will monitor compliance with the Plan to determine a Project contractor's eligibility for financial assistance.

Distribution

Distribution of the Project supply will be adaptively managed through a collaborative effort with Project contractors and the Services. The actual available Project supply will be dependent on observed inflows and UKL elevations during the spring/summer period and is subject to curtailment to meet legal requirements. Distribution is to be carried out in accordance with the Drought Plan (should one be issued) and other agency directives, consistent with applicable federal and state laws.

Canal Charging

Canal charging has been occurring since March concurrent with Reclamation's flood operations. Continued charging prior to official notification of the start of the irrigation season will be allowed only insofar as it does not adversely affect Klamath River flows or UKL elevations, as determined by Reclamation.

Flood Control

UKL flood control elevations, also referred to as the "flood curve," are used to maintain adequate storage capacity in UKL to capture high runoff events, to avoid potential levee failure due to overfilling UKL, and to mitigate flood conditions that may develop in the Keno Impoundment upstream of Keno Dam. They are not currently based on a specific recurrence interval, such as the 100-year event, but are based upon the goals of both preventing flooding and filling UKL as much as possible for use during the spring/summer season to fulfill Project purposes and obligations. The flood control elevations are in the process of being revised, but the new curves are not available yet. The general process of flood control consists of spilling water from UKL when necessary to prevent elevations from increasing above flood pool elevations, which change throughout the year in response to inflow forecasts and actual hydrology. Flood pool elevation is calculated in real time each day and adaptively managed to create a smooth UKL operation while allowing UKL to fill at the same time as making required releases. This operation is consistent with Reclamation's right to operate UKL to its full capacity elevation of 4,143.3 feet.

Real-Time Adaptive Management

The real-time adaptive management approach consists of close monitoring and reporting of observed hydrologic conditions and will assist Reclamation, the Services, and other affected parties in determining if further management actions are needed in response to evolving environmental conditions. Overall, using real-time monitoring and forecast information, Reclamation will confer with the Services as necessary while updating and receiving input from

affected Klamath Basin parties on the dynamic hydrologic conditions allowing timely action on opportunities to uphold contractual water supply obligations, prevent flooding, and comply with other legal responsibilities. Reclamation will conduct additional environmental compliance as necessary.

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

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 2024 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 contractors occurring approximately every week during the irrigation season or as needed.

Current Clear Lake Reservoir conditions were identified in the *Initial Hydrologic Conditions* section above. The end of September minimum water surface elevation in Clear Lake Reservoir analyzed under the 2024 USFWS BiOp is 4,520.60 feet. The historic full Project supply from Clear Lake Reservoir is approximately 35-40 TAF.

With the anticipated inflows and estimated evaporation and seepage rates, Reclamation estimates there will be a full Project supply of 35 TAF available from Clear Lake Reservoir during the 2025 spring/summer irrigation season.

Gerber Reservoir

Similar to Clear Lake Reservoir, the estimated Project 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 2024 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

With the anticipated inflows and estimated evaporation and seepage rates, Reclamation estimates there will be a full Project supply of 35 TAF available from Gerber Reservoir during the 2025 spring/summer irrigation season. Furthermore, there is a good chance that Gerber will spill during 2025 due to high inflows and, depending on the timing, these may contribute to DPS.

supply is tracked daily, with updates to Project contractors provided approximately every week during the irrigation season or as needed.

Current Gerber Reservoir conditions were identified in the *Initial Hydrologic Conditions* section above. The end of September minimum water surface elevation in Gerber Reservoir analyzed in the 2024 USFWS BiOp is 4,798.10 feet.

Lost River

Natural runoff and return flows in the Lost River may also be available at certain times for irrigation use within the Project or diversion to the refuges to satisfy BiOp requirements as needed to maintain water surface elevations on behalf of ESA-listed suckers. Flows diverted for irrigation 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 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. Lost River flows not needed to satisfy irrigation or BiOp requirements may be diverted through the Lost River Diversion Channel to supplement Klamath River flows and would be credited to DPS totals.

Other Operational Considerations

Flood Operations

If UKL enters flood control operations, UKL DPS spills first (prior to the FFA for Klamath River flows). The daily quantity of UKL DPS that spills is calculated as the minimum of the flow in excess of required flow at Link River or flow in excess of targeted flow at Keno Dam plus any spill diverted to TLNWR or LKNWR. To prevent or reduce spill of UKL DPS, early withdrawals from the account can be made and distributed to LKNWR or TLNWR in priority with other uses. Where physically practicable, DPS moved to LKNWR or TLNWR to avoid spill may be rediverted for agricultural irrigation use at a later date, in coordination with Reclamation and USFWS. Note that DPS diverted to the NWRs may be subject to evaporative and transmission loss that may reduce the volume available for re-diversion at a later date.

Klamath Project Drought Response Program

Reclamation is extending a 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 contractors. KPDRA's 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.

Due to the above average hydrology and Project water supply anticipated to meet full Project demand, KPDRA programs are not expected to be needed this year.

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 contractors in accordance with the respective 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 LKNWR or TLNWR 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 or the authorized quantity of water between the transferring parties.

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

Voluntary Water Conservation

There are several active conservation efforts that Project contractors can employ to conserve water and to extend available Project supply. Such strategies may include Project-wide actions, district initiatives, and individual efforts at the farm or field level.

Reclamation works with districts and individuals to encourage independent initiatives aimed at conserving Project supply. 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 contractors 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, up to 43 TAF from sources legally accessible to Reclamation may be available for delivery to LKNWR and TLNWR for the purpose of maintaining minimum elevations in Unit 2 and Sump 1A, respectively, in accordance with the terms and conditions of the BiOps.

Legally accessible sources include releases due to flood control, Lost River flows, and return flows from irrigation. Voluntary transfers, exchanges, unused Project supply, or other arrangements in accordance with federal and state authorizations can also make water available to Lower Klamath NWR, including Area K, through November 30.