RECLAMATION

Managing Water in the West

2014 Annual Operations Plan

Klamath Project, Oregon-California
Mid Pacific Region

U.S. Department of the Interior
Bureau of Reclamation

April 2014

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to 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 Klamath Project (Project) delivers water for irrigation purposes to over 200,000 acres in southern Oregon and northern California. This 2014 Operations Plan (Plan) describes estimated Project operations during the 2014 spring/summer irrigation season (March 1 to November 15), based upon current and projected hydrologic conditions. The Plan is consistent with the biological opinions issued jointly by National Oceanic and Atmospheric Administration's National Marine Fisheries Service and the U.S. Fish and Wildlife Service (USFWS) on May 31, 2013 (BiOp).

This Plan is divided into two sections. The first section describes the estimated water supplies available for Project purposes during the 2014 spring/summer irrigation season. The second section discusses the voluntary drought mitigation measures that Reclamation and Project water users will employ to minimize and manage potential Project water supply shortages.

2014 Project Water Supplies

Reclamation uses several water sources to meet irrigation demands within the Project, including: live flow into and stored water from Upper Klamath Lake (UKL), Klamath River, Clear Lake Reservoir, Gerber Reservoir, and the Lost River. The estimated water supply available from each of these sources during the 2014 spring/summer irrigation season is discussed in turn below.

Upper Klamath Lake & Klamath River

Consistent with the BiOp, Reclamation uses the monthly 50% exceedance inflow forecasts from the Natural Resources Conservation Service (NRCS) as the basis for Project operations during the spring/summer irrigation season. For UKL and the Klamath River, Reclamation relies upon actual inflows to UKL and NRCS' inflow forecasts for UKL to determine three key operational values: (1) the volume of water to be reserved in UKL to meet BiOp requirements for UKL (UKL Reserve); (2) the volume of water designated to meet BiOp requirements in the Klamath River, referred to as the Environmental Water Account (EWA); and (3) the volume of water available for delivery for irrigation purposes to the Klamath Project (Project Supply).

Reclamation makes a preliminary calculation of these three values on March 1; however, those estimates are subject to change based on actual UKL inflows after March 1 and subsequent NRCS inflow forecasts. Reclamation recalculates these values on April 1, based on actual UKL inflows observed in March and NRCS' UKL inflow forecast for April 1 to September 30. This April 1 calculation

provides the Project Supply available from UKL and the Klamath River during the spring/summer irrigation season under the BiOp.

Reclamation will recalculate the Project Supply following the May 1 and June 1 NRCS inflow forecasts. According to the BiOp, the May 1 and June 1 recalculation can only increase the estimated Project Supply (i.e., if actual inflows exceed NRCS' forecasts and/or NRCS' inflow forecasts increase). The Project Supply will not fall below the April 1 Project Supply estimate, except under certain conditions. Specifically, as described in the BiOp, Reclamation will be required to reduce Project deliveries if observed inflows to UKL are lower than the forecasted amounts to the extent that Project deliveries would cause the surface level of UKL to fall below the minimum elevation required under the BiOp (4,137.72 feet above sea level, USBR datum).

Based on the April 1 NRCS inflow forecast, Reclamation calculates the UKL Reserve to be 121,505 acre-feet (AF), with a corresponding end of September elevation for UKL of 4,138.11 feet above sea level (USBR datum). Reclamation calculates the EWA to be 320,000 AF, and the Project Supply to be 239,000 AF from March 1 through September 30, 2014. A full Project Supply from UKL and the Klamath River for March 1 through November 15 is 390,000 AF. Accordingly, Reclamation anticipates a shortage in Project water supplies available from UKL and the Klamath River for the 2014 irrigation season. (See chapter 4 of the BiOp for further details regarding the calculation of UKL Reserve, EWA, and Project Supply.)

Reclamation tracks the Project Supply deliveries, EWA releases, and UKL elevations on a daily basis, and coordinates with districts and regulatory agencies as appropriate. Reclamation develops a flow schedule for PacifiCorp listing daily targets for Iron Gate Dam releases, based on BiOp requirements.

Reclamation will also be coordinating with federal and state agencies in regards to the additional Project supply available to the Project as a result of state water rights administration, as further described below. Reclamation, in coordination with districts and Project water users, will include any such additional water, as reasonably quantified, in the May 1 and June 1 Project Supply updates.

Clear Lake Reservoir

The estimated Project water supply available from Clear Lake Reservoir is based on several factors, including current hydrologic conditions, NRCS' monthly inflow forecasts for April through September, the end of September minimum elevations required under the BiOp, as well as Reclamation's estimates on the rate of irrigation releases and non-beneficial losses (i.e., evaporation and seepage). The estimated available remaining water supply is tracked daily, with updates to Project water users occurring every two weeks during the irrigation season or as needed, generally corresponding to NRCS' inflow forecasts. Clear Lake

Reservoir presents a unique challenge in storing water supplies for irrigation, as the reservoir was originally constructed in part to evaporate water, in order to facilitate the reclamation of Tule Lake.

As of April 1, 2014, the water surface elevation in Clear Lake Reservoir was at 4,521.71 feet above sea level (USBR datum), representing a total volume of 54,230 AF of stored water. The end of September minimum elevation in Clear Lake Reservoir required under the BiOp is 4,520.60 feet above sea level (USBR datum). The NRCS' 50% exceedance April 1 inflow forecast for Clear Lake estimates that approximately 14,000 AF of additional inflow will occur from April 1 to September 30. Between the limited volume of water stored in Clear Lake Reservoir, low inflow forecast, and estimated evaporation and seepage rates, Reclamation cannot make discretionary releases from Clear Lake Reservoir during 2014 under the BiOp. As such, Project water is currently unavailable from Clear Lake Reservoir for irrigation purposes. The average historic Project demand from Clear Lake Reservoir is approximately 34,000 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, NRCS' monthly inflow forecasts for April through September, the end of September minimum elevations required under the BiOp, as well as Reclamation's estimates on the rate of irrigation releases and non-beneficial losses (i.e., evaporation and seepage). The estimated available remaining water supply is tracked daily, with updates to Project water users occurring every two weeks during the irrigation season or as needed, generally corresponding to NRCS' inflow forecasts.

The water surface elevation of Gerber Reservoir, as of April 1, 2014, was at 4,810.64 feet above sea level (USBR datum), representing a total volume of 18,578 AF of stored water. The end of September minimum elevation in Gerber Reservoir required under the BiOp is 4,798.10 feet above sea level (USBR datum). The NRCS' 50% exceedance April 1 inflow forecast for Gerber Reservoir estimates that approximately 5,500 AF of additional inflow will occur from April 1 to September 30. With the anticipated rates of evaporation and seepage, Reclamation estimates there will be approximately 19,500 AF of Project water available from Gerber Reservoir during the 2014 spring/summer irrigation season. The average historic demand from Gerber Reservoir is approximately 35,000 AF.

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 do not count against the Project Supply available from UKL and the Klamath River under the BiOp during the corresponding period. As such, the Project water supply from the Lost River is primarily constrained by the physical availability of water, as opposed to operational constraints imposed by the BiOp. Accordingly, Reclamation does not formally 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.

Voluntary Drought Mitigation Measures

Given the limited availability of surface water supplies to meet the full irrigation demands of lands served under the Project, Reclamation and Project water users will employ four general strategies to eliminate or minimize the extent of involuntary shortages. These four strategies include: (1) active conservation; (2) the Water User Mitigation Program (WUMP); (3) voluntary transfers among Project water users; and (4) state water rights administration. Deliveries to national wildlife refuges served by the Project are also a consideration in managing limited Project water supplies. These strategies are briefly discussed in turn below.

Active Conservation

There are a number of active conservation efforts that Reclamation and Project water users can employ 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.

A common historic Project-wide conservation practice is to delay the start of the irrigation season in order to extend how long the supply will last during the growing season. Reclamation coordinates with the districts operating the Project's principal diversion points about timing the start of the irrigation season, as it relates to Project water supplies.

Another Project-wide measure for managing the limited supply is to apportion the available Project supply throughout the course of irrigation season. The BiOp established monthly threshold water surface elevations for UKL, which can be used to track the release of the Project Supply from UKL and the Klamath River during the spring/summer irrigation season to ensure Project operations remain in compliance with the BiOp. Reclamation will coordinate with Project water users about potentially adjusting Project deliveries to meet monthly BiOp UKL threshold elevations.

Reclamation will also work with districts and individuals in employing independent initiatives aimed at conserving limited 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. On-field efforts may include planting less water intensive crops, using high-efficiency irrigation systems, such as sprinklers or gated pipes, and employing so-called "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 tools at their means to keep demands at a minimum.

Water Users Mitigation Program

The Water Users Mitigation Plan (WUMP) is a study funded by Reclamation under a cooperative agreement with the Klamath Water and Power Agency (KWAPA), pursuant to the Klamath Basin Water Supply Enhancement Act of 2000 (Pub. L. No. 106-498, 114 Stat. 2221). KWAPA administers the funding and manages the WUMP. The WUMP is designed to assess the feasibility of a non-federal program to assist in balancing water supply and demand through market-based approaches.

Due to the anticipated shortage in Project water supplies for the 2014 spring/summer irrigation season, KWAPA is in the process of entering into contracts with Project water users to forego the use of Project water (i.e., land idling). Participating water users will not be able to use limited surface water supplies available from the Project. KWAPA is also planning on contracting with groundwater well owners to produce supplemental groundwater to augment surface water supplies available to the Project.

Voluntary Project Water Transfers

Reclamation supports voluntary transfers of Project water as means of promoting flexibility in managing limited water supplies and maximizing Project benefits. Accordingly, Reclamation may allow transfers of Project water, within the limits of applicable federal and state law.

With respect to state law, Reclamation may require that parties to a proposed transfer first demonstrate compliance with applicable state law. With the drought declaration for Klamath County by Oregon Governor John Kitzhaber, dated February 13, 2014, the Oregon Water Resources Department (OWRD) has certain emergency drought relief authorities, which allow for expedited review and approval of temporary water right transfers. Reclamation will coordinate with

OWRD to facilitate any transfers approved by OWRD in response to the declared drought.

Federal law also imposes certain limitations on transfers of Project water. Federal law, for instance, does not allow for the use of Project water on private lands except pursuant to a contract with Reclamation. Accordingly, Reclamation can only approve transfers of Project water among lands eligible to receive Project water under an existing contract with Reclamation, or for refuge purposes within Lower Klamath National Wildlife Refuge (LKNWR) or Tule Lake National Wildlife Refuge (TLNWR).

Reclamation's prior written approval is required to transfer Project water among Project lands, in accordance with existing contracts. 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. Reclamation will coordinate with and seek input from the districts involved in any proposed transfer. Transfers of Project water to LKNWR or TLNWR will also require the approval of USFWS and the districts that serve refuge lands. Compliance with other applicable federal laws may also be necessary.

State Water Rights Administration

The State of Oregon is in the process of adjudicating certain water rights for UKL, the Klamath River, and their tributaries. OWRD completed the administrative phase of the Klamath Basin Adjudication, with its issuance of the Final Findings of Fact and Order of Determination (FOD) on March 7, 2013. Water rights for the Project, as recognized in the FOD, are enforceable under Oregon law, absent a judicial order to stay enforcement of the FOD. OWRD's district watermaster is responsible for investigating and enforcing any "call" for water rights regulation pursuant to Oregon law. Reclamation will coordinate with Project water users regarding any decision to make a call on behalf of Project water rights.

The purpose of making a call for state water rights administration is to minimize, if not prevent, a shortage in Project water supplies. The Project Supply determination for UKL and the Klamath River, as described above, does not currently include any additional Project water supply resulting from state water rights administration, given the uncertainty associated with this potential additional supply. Reclamation will use the best available information to quantify this additional volume, to the extent one exists, and include it as part of the May 1 and June 1 Project Supply determinations, as described above.

National Wildlife Refuge Deliveries

LKNWR and TLNWR are also eligible to receive Project water for both irrigation and refuge-related purposes. LKNWR encompasses 51,713 acres, which were reserved by Executive Order "as a preserve and breeding ground for native birds." TLNWR consists of 39,990 acres, also reserved by Executive Order "as a refuge and breeding ground for birds." USFWS manages both LKNWR and TLNWR to provide a variety of habitat types for native birds, including wetland, open water, and agricultural habitats.

The United States holds separate water rights in connection with LKNWR and TLNWR for irrigation and refuge purposes. Irrigation for agricultural purposes within the refuges, through leases and cooperative agreements with individual farmers, occurs under the water rights connected to the Project, with a priority date of May 19, 1905. The water rights for refuge purposes carry later priority dates.

With respect to water for irrigation purposes, as described above, certain refuge lands are within the service areas of Tulelake Irrigation District (TID) and the Klamath Drainage District (KDD). As specified in various contracts with the United States, refuge lands within TID and KDD receive Project water for irrigation purposes in accordance with the priority of each district's respective contract.

Other irrigated refuge lands outside TID and KDD, specifically LKNWR lands within the State of California, only receive Project water from UKL and the Klamath River when the supply is adequate to first satisfy the demands of Project contractors. Accordingly, given the insufficient Project Supply currently available from UKL and the Klamath River, Reclamation does not anticipate being able to make any discretionary deliveries to LKNWR lands in California at this time. Reclamation will continue to coordinate with USFWS and other stakeholders about the availability of surplus Project water to meet the water demands of LKNWR lands in California.

As described above, lands farmed under lease and cooperative agreement within TLNWR will receive Project water in accordance with the contractual priority of TID. In addition, TID will be given the discretion to operate the Tule Lake Sumps (1A and 1B), in conjunction with irrigation deliveries and minimum sump elevations required under the BiOp.