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Klamath Water Allocation Background

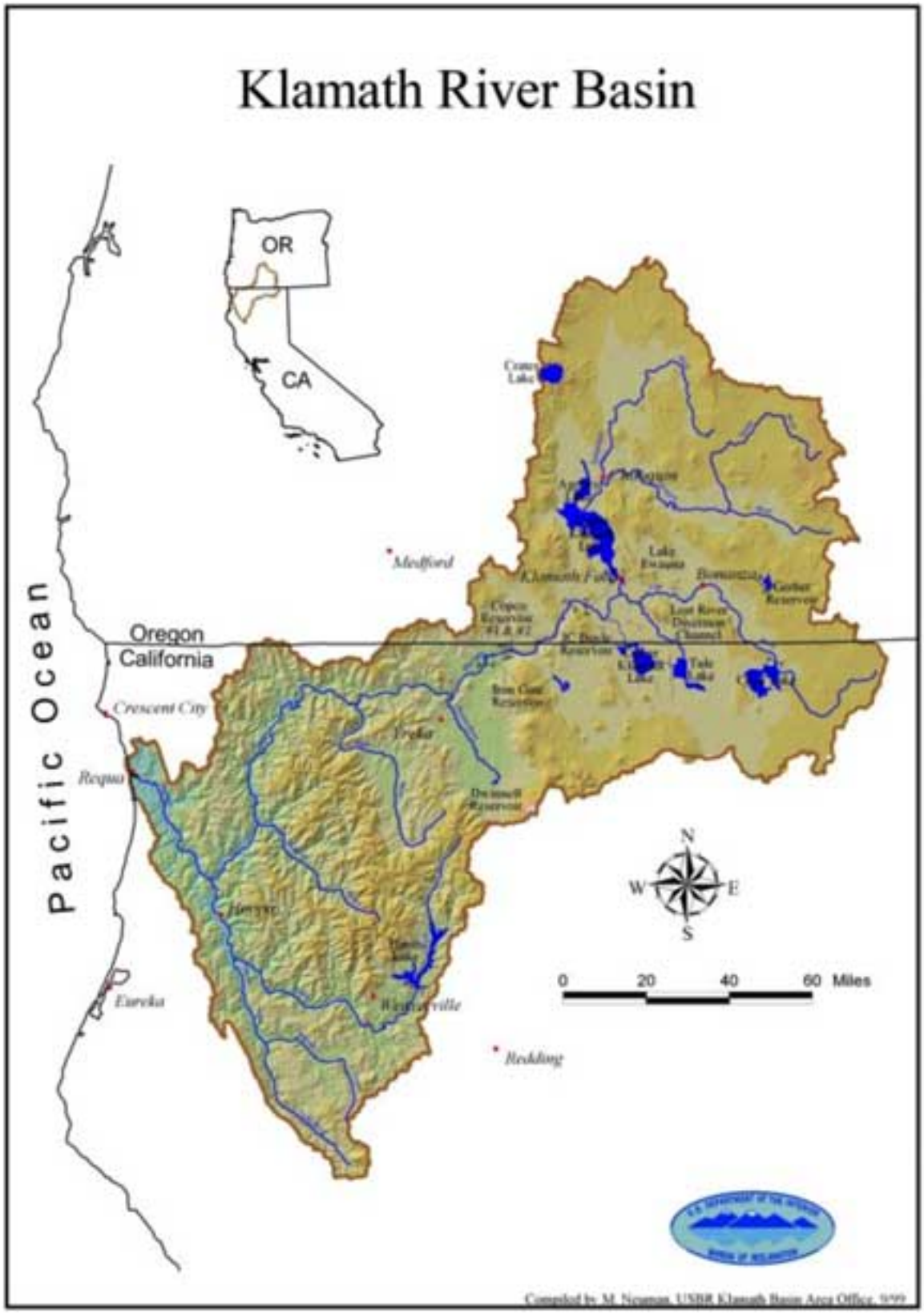
Ron Hathaway, Oregon State University Extension Service, Klamath County

The Upper Basin is a high-elevation, short-growing-season area created from volcanic and sedimentary events. Klamath Basin geology reflects repeated volcanic activity, erosion, and sedimentary rock deposition with episodes of landscape faulting and folding. It is an area where the high desert and the Cascade Mountain range meet. This provides the two dominant geophysical features that influence the climate and drainage of the basin. Elevations range from 4,000 ft. in the southern end of the Basin to 8,700 ft. at Crater Lake in the northern end. This variation in elevation causes wide temperature ranges with a possibility for frost any day of the year. The Cascade Mountain range to the west traps most of the coastal moisture, leaving the east side cooler and drier and exposing the Basin to a rain-shadow effect. The eastern and southern sides are formed by sage- and juniper-covered fault blocks and ridges.

Upper Klamath Lake is the largest lake in Oregon and the main storage reservoir for the USBR Klamath Project. It is 60,000 to 90,000 acres in size with a mean summer depth of 7 feet, as described elsewhere in this report. The lake fills a graben many thousands of meters deep, mainly with volcanic debris and sediments. This sedimentation continues today, producing a large, shallow lake. Link River is the outlet for Upper Klamath Lake, which empties into Lake Ewauna and Klamath River and reaches the Pacific Ocean through northern California. The town of Klamath Falls fans out south and east of Link River and Lake Ewauna.

The California-Oregon border approximately cuts the Basin in half. Clear Lake on the California side of the Basin is the second main source of water to the Klamath Reclamation Project, with a 25,760-acre surface area and maximum summer depth of 30 feet. It is the source of the Lost River, which flows north out of Clear Lake, turning west and south, eventually ending up in the Tule Lake sump, a closed basin system until man's manipulation in the 20th century.

Approximately 8,000 square miles of the three counties are irrigable lands serviced by the Klamath Irrigation Project, owned and operated by the U.S. Bureau of Reclamation (BOR), with 62 percent of the lands in south-central Oregon and 38percent in north-central California (U.S. Bureau of Reclamation 2001). The Project provides irrigation water to approximately 240,000 acres, including two national wildlife refuges. Upper Klamath Lake is the primary water storage feature of the Project. Other water sources are the Lost and Klamath Rivers, and Clear Lake and Gerber reservoirs. The project consists of 19 canals that total 185 miles. There are three main pumping plants. The Bureau contracts with 15 irrigation districts and has 20–25 independent contracts for water use.[1] Figure 1 details the extent of the Klamath Irrigation Project in southern Oregon and northern California.


Klamath River Basin
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Medford
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Eureka
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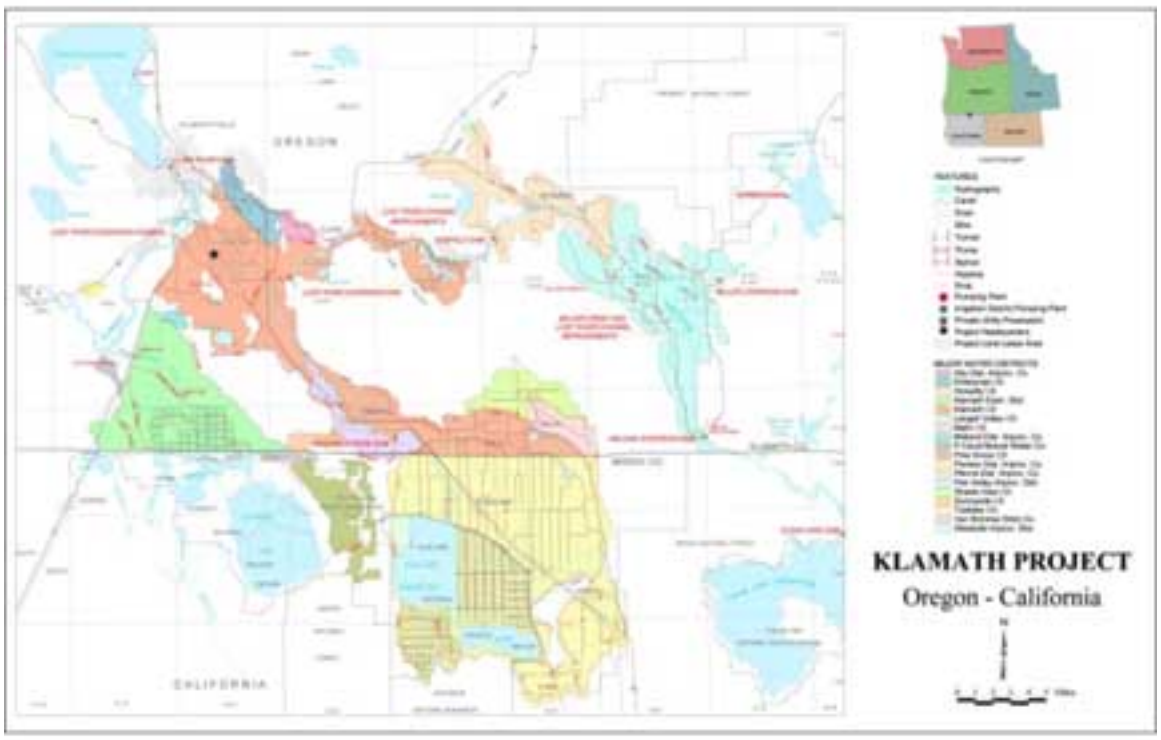


Climate and weather information are in the Water chapter.

Water allocation decision

On April 6, 2001, the Bureau of Reclamation Klamath Project Area Office mailed notice by letter to project water users below Upper Klamath Lake in the project notifying them that Project water would not be available for use until such time as the 2001 operations plan or other such written notification was completed.

> …Reclamation is currently operating the Klamath Project (Project) in accordance with the 2000 Annual Operations Plan that expires on March 31, 2001. Current conditions indicate a potential for shortage of water in the upper basin and, if precipitation does not increase significantly over the next few months, severe water shortages are likely during the upcoming 2001 irrigation season. **Therefore, you are notified that Project water is not available for use until such time as the 2001 Operations Plan or other such written notification is completed.**
>
> Reclamation submitted a final Biological Assessment on January 22, 2001, to NMFS with a request for formal consultation regarding the effects of ongoing Project operation on coho salmon. On February 13, 2001, a final Biological Assessment and request for formal consultation regarding bald eagles and Lost River and shortnose suckers was submitted to the Service. Draft biological assessments were reviewed by the Service, NMFS, Project water users,

PacifiCorp, and the four Tribes in the Klamath Basin. We anticipate sharing information as the consultation progresses.

Reclamation is in the process of developing the 2001 Annual Operations Plan. Biological opinions resulting from current consultations will be a critical part of the plan's formulation. While it is possible that there may be drastic reductions in Project agriculture and refuge deliveries in 2001, Reclamation is working diligently to avoid such an outcome. However, until Reclamation completes the consultation process, no diversion of Project water may occur that would result in a violation of Section 7(d) of the ESA which prohibits *"….any irreversible or irretrievable commitment of resources…"* pending completion of consultation. To date, Reclamation has not made a determination as to whether and to what extent Project water could be delivered in advance of completed consultations. Thus, until such a determination is made or the consultations are completed, no Project water may be diverted or used unless expressly authorized by Reclamation.…

Klamath Reclamation Project

The Klamath Reclamation Project construction was authorized May 15th, 1905, in accordance with the Reclamation Act (43 U>S>C> S 372 *et seq,* Act of June 17, 1902 Stat. 388). A complete history of the Klamath Project is available from the Klamath Basin Area Office "Klamath Project Historic Operation. November 2000.". In 1907 construction of the California Northeastern Railway line which served as a dike between the Klamath River and Lower Klamath Lake. Clear Lake Dam was constructed in 1910. Wilson Dam and the Lost River Diversion Canal were completed in 1912. Link River Dam was constructed in 1921. Gerber Dam was completed in 1925. Pumping Plant D, which moves water from Tule Lake Sumps to Lower Klamath Lake area, was completed in 1941.

Major features of the project are summarized. These are taken from the Water Chapter of this report, which cites the 2001 Biological Opinion (BiOp). The editorial additions are in bold, the 2001 BiOp in italic.

Klamath/Agency Lake

"*UKL (including Agency Lake), with a surface area ranging from 60,000 to 90,000 acres depending on lake levels, is currently the largest water body in the Klamath Basin. [The USBR area capacity table cites a surface area of 77,593 acres at 4,143.30 ft and 44,200 acres at 4,136.0 ft elevation]. Historically, the lake had a surface area of about 105,000 acres (Rosborough 1917, cited by Gearheart et al. 1995). Mean summer depth is about 7 feet. Hydraulic residence time is approximately 0.5 years. Its waters are generally well mixed because of shallowness. The major sources for UKL are the Williamson/Sprague (46% of total inflow) and Wood (15%) rivers, and various large springs (17%) which provide about 78% of the annual inflow (Miller and Tash 1967). Regulation of water levels in UKL began in 1919, with completion of the Link River Dam. By 1921 the reef at the entrance to Link River was lowered. Prior to construction of the dam, the lake level varied from about 4,139.9 to 4,143.1 ft, with a mean*

annual variation of about 2 ft (USBR data). However, the range may have been even greater, from 4,139.9 to 4145 (USBR 2000b). Since 1921, water levels have varied from 4,136.8 to 4,143.3 ft, a range of about 6.5 ft (USBR data). Water level regulation has also changed the seasonal timing of high and low elevation by making the highest and lowest elevations occur earlier in the season as well as prolonging the period of low water. This has had profound effects on the ecology of the lake, as described below" (Biological Opinion, 2001).

A-Canal

The A-Canal (Main), constructed in 1905, was the first irrigation facility completed on the Klamath Project. The canal supplies irrigation water, either directly or indirectly through return flows, to the majority of the Project. The headworks for the canal are located on Upper Klamath Lake, west of the city of Klamath Falls, and are operated by the Klamath Irrigation District (KID). The earth channel with lined sections is 60 ft wide x 8 ft deep x 9 miles long. Maximum flow is 1,150 cfs.

The canal is operated on a demand basis. Generally, the canal is charged with water in March or April. Flows average 500 cfs for the charge-up period. Orders for water are placed by irrigators with the watermaster [an employee of KID, not the state watermaster] who then schedules the flow in the canal. At the end of the irrigation season, generally during October, the canal is drained into the Lost River and the Lost River Diversion Channel. (Biological Opinion, 2001).

Clear Lake Dam and Reservoir

Clear Lake Dam *is located in California on the Lost River about 39 miles southeast of Klamath Falls, Oregon, and provides storage for irrigation and reduced flow into the reclaimed portion of Tule Lake and the restricted Tule Lake Sumps in Tulelake National Wildlife Refuge. The dam is an earth and rock fill structure with a crest length of 840 ft and a height of 36 ft above the streambed. The crest of the dam is at elevation 4,552.0 ft and is 20 ft wide. At the normal maximum water surface elevation of 4,543 ft, the dam will impound a total of 527,000 acre-ft in* ***Clear Lake Reservoir.***

Clear Lake Dam was constructed in 1910 to increase the storage capacity of the pre-existing lake, and to control releases of water for irrigation and flood control. It was also designed to increase evaporation rates by creating a large lake with shallow depths in order to reduce downstream flows to reclaimed wetlands near Tule Lake; thus it is not an efficient water storage facility. Seepage losses are also high. Annual evaporation and seepage losses account for over half of the average inflow of water, 128,120 acre-ft, at higher elevations. At maximum storage capacity of 4,543 ft above mean sea level, the reservoir has a surface area of 25,760 acres and a maximum depth of about 30 ft. However, Clear Lake elevations have only surpassed 4,540 ft in four years since 1910 and have never reached maximum storage (Service 1992a); recently Reclamation has had to control lake levels because of dam safety issues. Approximately 8,000 acres of

irrigated land in the Langell Valley depends on water from Clear Lake. These irrigation projects operated by Langell Valley and Horsefly irrigation districts divert approximately 36,000 acre-ft of water each year from Clear Lake (Service 1994b). Prior to construction of the dam a natural lake and marsh/meadow existed. During most years the Lost River below the present dam would run dry from June through October. Since construction, Clear Lake has been lower than the October 1992 elevation [1992 Biological Opinion minimum lake elevation—4,519.29 ft] in only 4 years, all during the prolonged drought of the 1930s. In 1934, the water surface elevation was the lowest on record, reaching 4,514.0 ft. Contour maps provided by Reclamation indicate the lowest lake bed elevation is 4,513.09 ft. Pre-impoundment elevation records for Clear Lake only exist for a few years, (1904–1910), but 4,522 ft is the lowest elevation recorded for the natural lake. Inflow to Clear Lake averages 128,120 acre-ft but has varied from 18,380 acre-ft in 1933–1934 to 368,550 acre-ft in 1955–1956 (Service 1994b).

The outlet at Clear Lake is opened in the spring, usually around April 15, to provide irrigation water to the Langell Valley Irrigation District (LVID), Horsefly Irrigation District (HID) and private "Warren Act" contract lands. In most years the outlets are shut off around October 1. No other releases are made from the dam unless an emergency condition dictates otherwise. Since the reservoir has a storage limitation of 350,000 acre-ft from October 1 through March 1, summer drawdown releases are occasionally necessary. (Biological Opinion, 2001).

Gerber Dam and Reservoir

"Gerber Dam is located on Miller Creek about 14 miles east of Bonanza, Oregon. Gerber Reservoir has a surface area of 3,830 acres and an active capacity of 94,270 acre-ft at the spillway crest, elevation 4,835.4 ft. In an average year, Gerber Dam, the source of water for Miller Diversion Dam, releases about 40,000 acre-ft of irrigation water.

Construction of Gerber Dam was completed in May of 1925. The reservoir is used to store seasonal runoff to meet irrigation needs (17,000 acres) of the Project, primarily for the Langell Valley Irrigation District (LVID), and to limit runoff into Tule Lake. Prior to construction of the dam, no reservoir existed and Miller Creek would run dry from June to October in most years. (Biological Opinion, 2001).

Lost River

The Lost River traverses approximately 100 miles from Clear Lake Reservoir to Tule Lake. Throughout most of its length, the river is highly channelized and managed. Two important structures include the Lost River Diversion Dam (Wilson Dam) which allows discharge of up to 3,000 cfs to the Lost River Diversion Channel, and the Anderson-Rose Dam, which facilitates diversion to the J-Canal for irrigation of land within the Tulelake Irrigation District (TID). The J-Canal has a capacity of 800 cfs and typically diverts about 135,000 acre-ft to TID. The Lost River has lost all semblance of a natural river system and is a highly managed

feature of the Project with several impoundments. USBR documents refer to the Lost River as the Lost River Improved Channel. Implementation of the decision to drain and reclaim Tule Lake and the Lower Klamath Lake for agricultural production required changes in and management of the Lost River.

Lost River Diversion Channel

"The Diversion Channel, operated by Reclamation, begins at Wilson Diversion Dam and travels in a westerly direction, terminating at the Klamath River. It was constructed originally in 1912 and enlarged in 1948. It is an earthen channel 8 miles long. The channel is capable of carrying 3,000 cfs to the Klamath River from the Lost River system during periods of high flow. The channel is designed so that water can flow in either direction depending on operational requirements. During the irrigation season the predominant direction of flow is from the Klamath River. Miller Hill Pumping Plant is located on the channel along with the Station 48 drop to the Lost River system.

During the fall, winter and spring, the channel is operated so that all of the water that enters from the Lost River is bypassed to the Klamath River. During periods that the flow is in excess of 3,000 cfs water is bypassed into the Lost River. During the spring of most years it is necessary to import water from the Klamath River to the Lost River for early irrigation in the Tulelake area. During the summer months the channel is operated as if it were a forebay for the Miller Hill Pumping Plants and the Station 48 turnout. Depending on the needs of these two irrigation diversions, water that is not able to come from the Lost River must come from the Klamath River" (Biological Opinion, 2001).

Tule Lake Sumps

Historically, Tule Lake covered a maximum area of about 95,000 acres (Abney 1964), making it about the same size as UKL, before diking and draining reduced its surface area. Tule Lake is the terminus of Lost River, but historically, flood flows from the Klamath River would also enter Tule Lake by way of the Lost River Slough. Lost River got its name from the fact that it did not directly connect to the sea.

In the 1880s, white settlers built a dike across the Lost River Slough in a first attempt to reclaim Lower Klamath and Tule Lakes. Reclamation began actively reclaiming historic Tule Lake with the construction of Clear Lake Dam in 1910 and the Lost River Diversion Dam in 1912 (USBR 1953). In 1932, a dike system was constructed to confine the drainage waters entering Tule Lake to a central sump of about 10,600 acres. In 1937, maintaining the dike system became difficult as heavy inflows required an additional 3,400 acres of surrounding lands to be flooded. In 1938, the sump was increased to 21,000 acres. During the winter of 1939–40, heavy flows entered the sump again and dikes broke, flooding an additional 2,400 acres and damaging crops. Thus it became necessary to control the level of Tule Lake by installing a pumping station. In 1942, a 6,600 ft long tunnel through Sheepy Ridge and Pumping Plant D were completed, allowing

water to be pumped from Tule Lake into Lower Klamath Lake (USBR 1941). This pumping station provides flood control for Tule Lake and is now the primary source of water for Lower Klamath NWR.

The present Tule Lake is highly modified and consists of two shallow sumps, 1A and 1B connected by a broad channel, the "English Channel." The two sumps have a surface area 13,000 acres and a maximum depth of 3.6 ft. Water entering Tule Lake comes from three sources: (1) direct rainfall, (2) agricultural return water, and (3) the Lost River. In winter, most of the Lost River flows are diverted at the Lost River Diversion Dam to the Klamath River via the Lost River Diversion Channel. In the irrigation season, this channel is also used to supply water from the Klamath River by reverse flow for lands in the Tule Lake area. Therefore, most of the water entering Tule Lake during the irrigation season originates from UKL, via the Klamath River in the Lake Ewauna area. The total mean annual inflow into Tule Lake is about 90,000 acre-ft (Kaffka, Lu, and Carlson 1995). Water level elevations in Tule Lake sumps have been managed according to criteria set in the 1992 BO. From April 1 to September 30, a minimum elevation of 4,034.6 ft was set to provide access to spawning sites below Anderson-Rose Dam for dispersal of larvae and to provide rearing habitat. For the rest of the year, October 1 to March 31, a minimum elevation of 4,034.0 ft is set to provide adequate winter depths for cover and to reduce the likelihood of fish kills owing to low DO levels below ice cover"
(Biological Opinion, 2001).

Klamath Straits Drain

The Klamath Straits Drain, constructed in 1941 and operated by Reclamation, begins at the Oregon/California border and proceeds north to the Klamath River. It is a 60 ft wide x 4.6 ft deep x 8.5 mile earth channel with relift pumping stations. The water is lifted twice by pumps and is then discharged to the Klamath River. The Straits Drain is in the Lower Klamath National Wildlife refuge, which in turn receives drainage water from the Tule Lake National Wildlife Refuge. The Straits Drain was enlarged in 1976 to provide additional capacity to drain problem areas within the refuge. Maximum flow is 600 cfs.

The Klamath Straits Drain is operated at levels that will provide adequate drainage to both private lands and refuge lands. The pumps are operated to meet flow conditions within the drain. Water quality conditions are monitored continuously near the outlet of the channel to the Klamath River" (Biological Opinion, 2001).

ADY Canal

"The [headworks] structure, a concrete box culvert with slide gates and stoplogs, was constructed in 1912 by the Southern Pacific Railroad in cooperation with Reclamation to control the water flow into the Lower Klamath Lake area through the Klamath Straits Channel. It is operated by Reclamation. At the present time

these gates are left open to allow irrigation water into the lower Klamath area in a controlled manner. Water flow is controlled by the Klamath Drainage District using automatic gates located downstream from this facility. Irrigation flow is 250 cfs" (Biological Opinion, 2001).

North Canal

The North Canal diverts water from Klamath River to approximately 10,000 acres of private agricultural lands in the Klamath Drainage District of the Lower Klamath Lake area. The diversion has a capacity of approximately 300 cfs. Total annual diversions through the North Canal have ranged from a low of 28,000 acre-ft in 1992, 1994, and 1998, to a high of 49,000 acre-ft in 1995 (Table 1). In 1999 and 2000, the total April through October inflow was about 35,000 acre-ft (USBR data). Winter flooding of agricultural fields provides control of rodents (drowning and/or exposure to raptor predation), weeds, and plant diseases, and habitat for waterfowl. Surplus water is discharged to the Klamath Straits Drain. The 10-year average diversion to the North Canal has been 37,000 acre-ft. Much of this returns to the Klamath River through the Straits Drain after flood irrigation during winter months. As in the ADY Canal, gates to Klamath River are left open and the canal is holding water year-around at the elevation maintained in the Klamath River.

Other Klamath Project features

Minor laterals, which divert 95 percent of actual deliveries to farms, include 680 miles of channels. A total of 728 miles of drain ditches range in depth from a few ft to 10 ft with discharge capacities up to 600 cfs (Straits Drain) (Biological Opinion, 2001). Most drains retain water throughout the year and are important sources of recharge for shallow domestic wells, as are main canals and laterals during the irrigation season. This fact has been clearly demonstrated during the current drought by many wells becoming inoperable by mid-summer 2001. These canals and drains provide several thousand acres of habitat for birds, amphibian species, reptiles, and mammals.

Homestead Project lands

Agricultural lands in the Klamath Project were homesteaded, with the first public lands opened March 1917. The Tule Lake area of the project was open to 10 public homesteaded entries from 1922 to 1948.

Klamath River Basin Compact

The Klamath River Basin Compact was ratified by Congress September 11th, 1957. The purpose of the compact was to deal with water resources in the Klamath River Basin. Purposes of the compact were "to facilitate and promote orderly development, use, conservation and control thereof." An additional purpose of the Compact was to further intergovernmental cooperation for equitable distribution among the two states and the federal government; for preferential rights to the use of water; for prescribed relationships between beneficial uses of water. The Klamath compact established water priorities. Priorities were established as: 1) domestic use, 2) irrigation use, 3) recreational use, including use for fish and wildlife; 4) industrial use; 5) generation hydroelectric power; 6) such other uses as are recognized under laws of the state involved. The Compact created a three-member commission to administer the compact. Representation on the commission is one member from California Department of

Water Resources, one from Oregon State Water Resources Board, and one federal representative appointed by the President.

Wildlife refuges

Two national wildlife refuges are located within the Project area. The Lower Klamath National Wildlife Refuge, our nation's first waterfowl refuge, containing 46,900 acres, was established by President Theodore Roosevelt in 1908. The refuge was established as a "preserve in breeding ground for wild birds and animals." Tule Lake National Wildlife Refuge was established in 1928again as a "preserve in breeding ground for wild birds and animals." Tule Lake refuge consisted of 39,116 acres of mostly open water and croplands. The Kuchel Act of 1964 was passed to settle issues related to wildlife refuge and agricultural use of lands within the project area. The Kuchel Act was "dedicated to wildlife conservation…for the major purpose of water management, but with full consideration to the optimum agreeable use that is consistent there with."

Tule Lake and Lower Klamath National Wildlife Refuges

"*The 2001 Habitat Management Plan for the Tule Lake NWR calls for Sump 1A to be permanently maintained and Sump 1B to be drawn down in May and flooded again in September or October or later as supply permits. Evaporation losses for Sump 1A, assuming an area of 9,500 acres, is estimated to be 36,400 acre-ft. Sump 1B is about 3,500 acres and will require an estimated 7,000 acre-ft of water to re-flood. Additionally, there will be 400 acres of flood fallow lots and 885 acres of seasonal wetlands on Tule Lake NWR outside of Sump 1A and Sump 1B. The flood fallow lots will be permanently flooded and will require approximately 1,200 acre-ft of water to meet ET losses throughout the year. The water requirement for the seasonal wetlands would be an estimated 1,800 acre-ft. Seasonally flooded areas will be drawn down in May and flooded again in September or October or later as supply permits. The seasonal areas include the Headquarters fields (85 acres), Covey Point (200 acres), and 600 acres of new seasonal lands in Sump 3. The total water requirement for Tule Lake NWR is 46,400 acre-ft. This does not include any irrigation needs for farmed areas on the lease lands. The 2001 Habitat Management Plan for Lower Klamath NWR calls for a total of 11,163 acres of permanently flooded wetlands, 11,379 acres of seasonally flooded wetlands, 4,476 acres of grain fields, and 4,561 acres of flooded upland areas. Of the total seasonal acreage, 8,161 acres will be flooded from September 1 to October 31. The remaining seasonal acreage as well as all grain and upland areas will be flooded after October 31. Water requirements were estimated using the ref_for982.xls model for Lower Klamath NWR, assuming median precipitation and the 20% exceedence ET rate for the permanent wetlands. The total water requirement for the period May 1–October 31 is 50,660 acre-ft. Of the 50,660 acre-ft, 26,110 acre-ft is for permanent wetlands and 24,540 acre-ft is for seasonal wetlands to be filled before October 31. After October 31, additional water will be needed to fill the remaining 3,236 acres of seasonal wetlands (9,090 acre-ft), the 4,476 acres of grain fields (11,190 acre-ft), and the roughly 300 acres of upland area that will be flooded with ADY water this year (about 1,000 acre-ft). In addition, the permanent wetlands will*

require freshening flows of up to 5,480 acre-ft at some point during the winter. The total demand for the period November 1–April 30 is 26,760 acre-ft. This brings the total water requirement for the refuge in 2001 to 77,420 acre-ft. This does not include any lease land irrigation needs" (USFWS- Klamath Basin NWR, 2001).

Project operation

The Klamath Project currently (2000) includes 240,000 acres plus national wildlife refuge lands. The Project generally provides water to 200,000 acres, varying annually. In an average year of operation, inflow in the Upper Klamath Lake is 1.3 million acre-feet average. Usable storage of Upper Klamath Lake is 486,830 acre-feet. The Project, including wildlife refuges, consumptively uses approximately 350,000 acre-feet of water annually. The Klamath Project is noted for high irrigation efficiencies, which are achieved project-wide through water reuse. Normal year net use is 2.0 acre-feet per acre, including water for Tule Lake and Lower Klamath national wildlife refuges.

Endangered Species Act

Protection of threatened coho salmon in the Klamath River below Iron Gate Dam, and protection of the Lost River and Shortnose suckers in UKL, under the federal Endangered Species Act (ESA), were primary influences of the 2001 water allocation for the Klamath Project. The endangered species act (ESA) was passed by Congress in 1973. Purpose of the ESA is to "provide a program for the conservation of…endangered and threatened species" (16 U.S.C. § 1531[b]). Additionally, the ESA is "to provide a means whereby the ecosystems upon which endangered species and threatened species may be conserved, to provide a program for the conservation of such endangered species and threatened species and take steps as may be appropriate to achieve that purposes." The ESA is "not merely to avoid elimination of that species, but to bring the species back from the brink sufficiently to obviate the need for protected status" (Id. § 2[b]).

Under the ESA, the Lost River and Shortnose suckers were listed as endangered July 18, 1988. 1992 was a critical dry-water year for the Klamath Reclamation Project. This was one of the driest records for the project. The Bureau of Reclamation developed a conservation plan for operation of the Klamath project during periods of critical water years. On July 22, 1992, the Bureau of Reclamation completed consultation with the U.S. Fish and Wildlife Service regarding the biological opinion on effects of long-term operations of the Klamath Project. This biological opinion provided for variance in minimum lake level in the Upper Klamath Lake. 1994 was another critical dry-water year for the Klamath Reclamation Project. It was the third-driest year on record for the Project. 1994 also marked the beginning of government meetings with tribes. This was also the year of the first attempt to initiate an annual operation plan, Klamath Project Operational Plan (KPOP). In 1995, the Bureau of Reclamation prepared an annual operation plan for the Klamath Project. Annual operation plans were subsequently prepared for the years 1996 through 2000. On April 7, 1995, the Bureau of Reclamation held the initial conferencing with the National Marine Fisheries Service (NMFS), the agency responsible for salmon. This conferencing found that the KPOP was not likely to jeopardize coho salmon. However, coho salmon were proposed for listing.

Water management

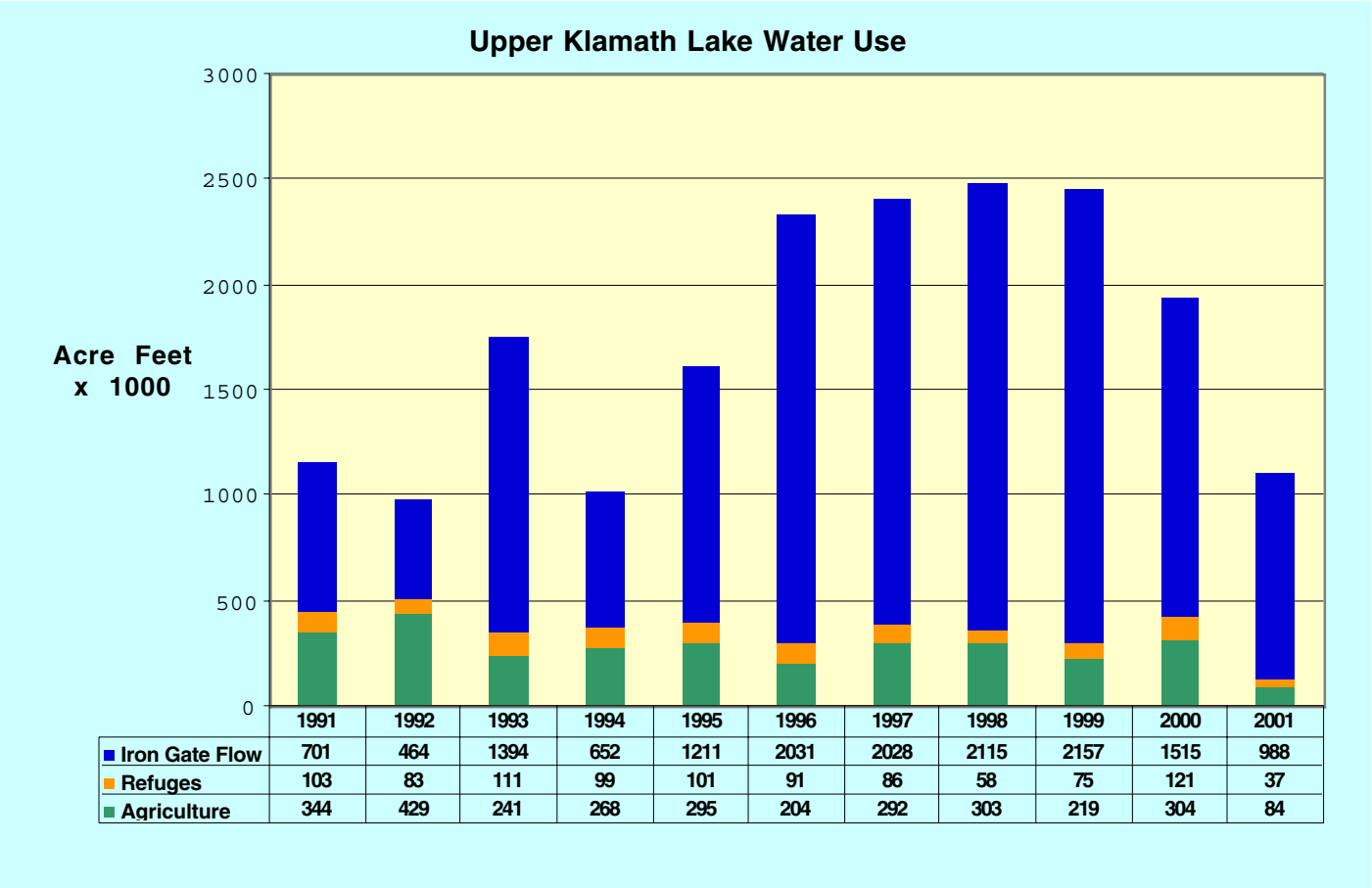
Water management, water rights, and other water uses are an issue within the Project. The BOR maintains it has authority to administer water in the Project while the State of Oregon differs in opinion. On July 25, 1995, a BOR solicitor sent a letter regarding water rights to the Klamath Project Area office. In this letter the solicitor stated that none of the rights for water are quantified—ESA, refuge, project, or tribes. However, the Klamath tribes' rights to hunting, fishing, and gathering were preserved. The solicitor further stated that reclamation is "not free to disregard these rights and its discretion to determine and to fill these rights." In response to the BOR solicitor's letter, the Oregon Water Resources Department (OWRD) responded with a letter dated March 18, 1996. OWRD stated that there are issues regarding the authority of the Interior Department to manage the project pending completion of the adjudication process. The OWRD also took issue regarding United States-claimed water rights. In response to the OWRD letter, the BOR solicitor wrote a letter (dated January 9, 1997) that said the Interior's conclusion regarding the number of issues differed from the OWRD's. The solicitor reaffirmed long-standing positions of the United States regarding management of water projects for irrigation, wildlife production, and Indian rights. The solicitor also stated that the BOR was free to develop a plan to govern operations pending completion ofn the Klamath Basin adjudication process.

ESA-Project issues

Under the ESA, listing of the southern Oregon or California coho salmon was completed May 6, 1997. Coho salmon were listed as threatened under the ESA. In 1998, the first formal consultation was held with NMSF regarding Klamath Project operations. In July 1999, NMFS issued a biological opinion stating that the project operation would not likely jeopardize coho salmon during the defined period of operation. In 2000, the BOR operated the project in accordance with the determination pursuant to section 7 (d) of the ESA in a below-average water year.

In September of 2000, the BOR and U.S. Fish and Wildlife Service (USFWS) held a consultation. As a result of this consultation, the variance for lake levels for critical (below average) water-year operation was removed. In January 2001, Reclamation forwarded to NMFS a biological assessment of Project operations on coho salmon and requested initiation of formal consultation with USFWS. On February 13, 2001, Reclamation forwarded a biological assessment of project operation on Shortnose and Lost River suckers to USFWS. The BOR requested formal consultation with the USFWS to develop reasonable and prudent alternatives (RPAs).

On March 13, 2001, the USFWS issued a draft Biological Opinion (BiOp). This draft BiOp concluded that the sucker population in Upper Klamath Lake was at risk. USFWS proposed RPAs that would include a minimum service elevation of Upper Klamath Lake of 4,140 and 4,142.5 ft. from January through October. On March 19, 2001, NMFS completed their draft BiOp. This opinion found that the Project operation would jeopardize coho salmon. NMFS proposed four RPAs of minimum water flows in Klamath River below Iron Gate Dam. The implementation of the RPAs resulted in severely limited availability of Klamath Project irrigation water. The RPAs provided that 70,000 acre-feet of water for irrigation would be made available from Clear Lake and Gerber reservoirs for the Horsefly and Langell Valley irrigation districts.



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Iron Gate Flow	701	464	1394	652	1211	2031	2028	2115	2157	1515	988
Refuges	103	83	111	99	101	91	86	58	75	121	37
Agriculture	344	429	241	268	295	204	292	303	219	304	84

Data is for water supplied from UKL only and does not include Agriculture and Refuge water use supplied by the Lost River system or from ground water wells.

10/08/01

On April 6, 2001, USFWS released to NMFS their final biological opinions on suckers, coho, and bald eagles. The biological opinions concluded that operation of the project as proposed by the BOR would jeopardize suckers and coho salmon. Further, it would cause harm—not jeopardy—to bald eagles. The BiOp also adjusted UKL elevations and Klamath River flows to reflect reduced water availability. The Klamath Lake minimum was set at 4,139 feet (elevation above sea level), with a long-term goal of 4,140 feet elevation. The Klamath River flows from April through September were increased. Klamath River flows below Iron Gate Dam were set at: April through June, 1,300 cubic feet per second (cfs); June 1–15, at 2,100 cfs; June 15–30 at 1,700 cfs; July through September, 1,000 cfs; and in October return to 1,300 cfs.

On April 6, 2001, BOR notified project irrigators that Project water was not available for use. On April 13, 2001, a judge's order declared that the BOR was enjoined from sending irrigation water deliveries to the Klamath Project whenever Klamath River flows dropped below the minimum Hardy Phase I flows, until such time as formal consultation to a no-jeopardy finding by NMFS or the BOR's final determination that the proposed plan is unlikely to adversely affect coho salmon.

These biological opinions resulted in a significant change in water distribution.

Early economic and social results

The Oregon State University Department of Agriculture and Resource Economics conducted an economic impact study indicating $157 million would be lost in Klamath Project total gross agricultural sales, and an additional $79 million in reduced personal, employment, proprietary income, and other property value would result from the water area allocation decisions.

On July 24, 2001, Secretary of the Interior Gale Norton released 70,000 to 75,000 acre-feet of water from UKL to assist farmers in the Basin Project. Early estimates of the effect on social services: the Klamath Lake County Food Bank had increased requests from 772 families; the Klamath County Mental Health Department requests for precommitment investigations were up by 67 percent; crisis services were up 64percent; and mental health medical services were up 32 percent. Klamath County also responded by opening the Drought Crisis Resource Center in Merrill.

This assessment resulted from efforts and interest from faculty of University of California and Oregon State University.

Note: References for this chapter are listed in other chapters throughout the report.