

An hourglass-shaped graphic with a globe inside. The top bulb is dark blue, and the bottom bulb is light blue. The globe is a darker shade of blue. The hourglass is centered on the page.

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*Klamath River Basin Issues: An Overview of Water Use
Conflicts*

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Abstract. This report provides background on the geographic, historic, and legal underpinnings of the current conflict. It deals primarily with Klamath project operations and effects associated with water releases from Upper Klamath Lake.

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Klamath River Basin Issues: An Overview of Water Use Conflicts

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Klamath River Basin Issues: An Overview of Water Use Conflicts

Summary

Severe drought in 2001 affected the Klamath River Basin, an area on the California-Oregon border, exacerbating competition for scarce water resources and generating conflict among several interests – farmers, municipal and industrial users, commercial and sport fishermen, other recreationists, federal wildlife refuges, environmental groups, and Indian Tribes. The conflicts over water distribution and allocation are physically and legally complex, reflecting the varied and sometimes competing uses of limited water supplies in the Upper Basin.

On April 6, 2001, the Bureau of Reclamation (Bureau), which has supplied water to farms in the Upper Basin for nearly 100 years, announced that “no water [would] be available” for farms normally receiving water from the Upper Klamath Lake, so that scarce water could be used to protect species listed as endangered or threatened under the Endangered Species Act (ESA). Water was available to some farmers from other sources (*e.g.*, wells and other Bureau sources); however, many farmers were not able to plant or harvest crops due to severe cutbacks in water supplies. Emotions ran high on all sides of the issues, and the water control gates were unlawfully opened by protesters. Although the Basin has received significantly more precipitation in 2002, many issues remain in dispute. In addition, several judicial decisions have affected the issues with respect to the listed species as well as tribal rights.

On May 31, 2002, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service both issued Final Biological Opinions on the Bureau’s 10-year Operation Plan for the Klamath Project. The agencies found that the Bureau’s proposed action is likely to jeopardize the continued existence of the two listed suckers and coho salmon, as well as result in the adverse modification of proposed critical habitat; however, both Opinions also included “reasonable and prudent alternatives” for operating the Project that would remove the jeopardizing effects of the proposed action. However, on June 3, 2002, the Bureau formally rejected both Final Biological Opinions, but opted instead to operate under a one-year plan that it asserts complies with the Opinions.

Independently, in March 2002, the President appointed a high-level working group to develop solutions. Congress has responded to the controversy in a number of ways, including holding several oversight hearings and appropriating funds for water conservation activities in the area.

This report provides background on the geographic, historic, and legal underpinnings of the current conflicts. Because the report focuses on the current conflicts, it deals primarily with Klamath Project operations in the Upper Klamath Basin and effects associated with water releases from Upper Klamath Lake.

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Klamath River Basin Issues: An Overview of Water Use Conflicts

Introduction

Severe drought affected the Klamath River Basin in 2001, exacerbating conflicts among several interests in this California-Oregon border area – farmers, commercial fishermen, environmental groups, and Indian Tribes. These conflicts reflect the varied and sometimes competing uses of limited water supplies in the Upper Basin. The Bureau of Reclamation (Bureau), Department of the Interior, operates a federal water supply project in the Upper Basin, which has provided water for irrigation to farmers in the Upper Basin for nearly 100 years. The increase in irrigated acreage over the years reduced water levels in the Upper Klamath Lake, wetland acreage in the Upper Basin, and river flows to the Lower Basin. On April 6, 2001, the Bureau announced that “no water [would] be available” from Upper Klamath Lake to supply farmers in the majority of the Klamath Project (“the Project”) area so that the limited water supplies could be used to protect species listed as endangered or threatened under the Endangered Species Act (ESA). This announcement was based on determinations in Biological Opinions issued on April 5 and April 6, 2001, including that the Bureau’s proposed operations for that year would jeopardize the continued existence of endangered suckers¹ and threatened coho salmon, and would harm, but not jeopardize, the continued existence of bald eagles which also rely on Project water. Many farmers suffered economic losses as a result of the restricted water deliveries. Emotions ran high on all sides, and some of the water control gates were unlawfully opened in protest.

Water distribution and allocation in the Basin are both physically and legally complex. Basin waters serve farmers, municipal and industrial users, commercial and sport fishermen, other recreationists, federal wildlife refuges, and several Tribes. Consequently, farmers are not the only interest with a claim to waters in the Basin or to experience a cutback in water allocations, and these various needs for water come into direct competition even aside from times of drought. For example, since the Shortnose and Lost River suckers were listed as endangered in 1988, the Bureau has had to consult with the U.S. Fish and Wildlife Service (FWS, Department of the Interior) on its operation plan for the Klamath Project. In 2001, the FWS determined that certain water levels needed to be retained in the Upper Klamath Lake to maintain two species of endangered suckers, while the National Marine Fisheries Service (NMFS, within the National Oceanic and Atmospheric Administration, Department of Commerce) determined that certain flows of clean water needed to be released to maintain downstream coho salmon. However, in 2001, there was insufficient water to meet both species and agricultural needs. Indian Tribes have priority water rights

¹ “Sucker” is the common name for species of fish in the taxonomic family Catostomidae.

in the Basin and rely on salmon and the two species of endangered suckers for various tribal uses. In addition, commercial fishermen and sport anglers also rely on salmon spawned in Klamath Basin rivers. A large population of bald eagles and migratory birds at the Lower Klamath National Wildlife Refuge depends on the water released from the Upper Klamath Lake and on irrigation return flows. However, under the April 6 allocation, no water was to be released to the Refuge, although some water ultimately was donated or acquired for that purpose.

Increased listings of threatened and endangered species together with legal affirmation of Tribal water rights have resulted in irrigation needs receiving lower priority than was past practice. Thus, in years of scarce water, farmers may receive less water than previously. The 107th Congress has held hearings on Klamath Basin issues and has provided some emergency relief. In addition, there have been important court cases that affect the issues, and the President has appointed a high-level working group to develop Basin-wide solutions.

Although significantly higher water supplies have been forecast for 2002, issues remain. The Bureau operated under a two-month letter of concurrence issued by NMFS for the months of April and May and cut flows in the Lower Klamath River to less than those provided during the 2001 drought, despite a Draft Biological Opinion issued on April 25, 2002, finding that the Bureau's proposed 10-year (June 1, 2002 through March 31, 2012) water plan would jeopardize the continued existence of Basin species. In response to preliminary concurrence with the Bureau's 10-year plan, a lawsuit was filed to enjoin the Bureau from lowering Klamath Lake levels, but the request for a temporary injunction was denied.

Final Biological Opinions were issued by the FWS and NMFS on May 31, 2002, on the Bureau's 10-year plan, again finding jeopardy, but also recommending reasonable and prudent alternatives to avoid jeopardy. These Opinions are discussed further below. However, on June 3, 2002, the Bureau formally rejected both Final Biological Opinions, but opted instead to operate under a one-year plan that it asserts complies with the Opinions.

Overview

The Klamath River originates in southern Oregon and travels 263 miles before emptying into the Pacific Ocean in northern California. The Klamath River Basin – or watershed – covers approximately 12,100 square miles (see figure 1) and, for water management, is divided into Lower and Upper River Basins. The Upper Basin (see figure 2) lies largely above (upriver) and east of the Iron Gate Dam on the Klamath River and includes three major lake areas: Upper Klamath, Lower Klamath, and Tule Lakes.

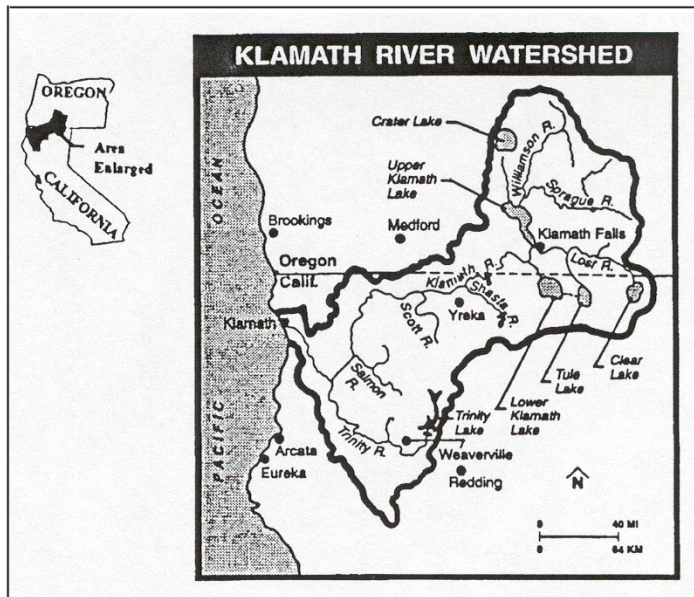
The Bureau operates the Klamath Project in the Upper Basin and, under contract, distributes water primarily to farms in the surrounding area. Authorized in 1905 and largely completed in 1907, the Project is one of the oldest U.S. reclamation projects and is the only reclamation project in the entire drainage. Project facilities *overall* serve approximately 1,400 farms (nearly 1,000 full-time farms) and provide

irrigation water to approximately 235,000 acres in an otherwise arid area.² Private irrigation predated the federal Project, perhaps beginning as early as 1882. State law governs many water rights in the Upper Basin. Rights have not been quantified, but an adjudication to determine pre-1909 water rights in that area is in progress in Oregon.³

Bureau facilities control water flows of the Klamath and Lost Rivers in the Upper Basin between the Link River Dam at the outlet of the Upper Klamath Lake and a water level regulation dam at Keno, Oregon. Bureau water supplies are used by multiple landowners, as a portion

of irrigation water is returned to streams or canals for downstream use. Serious concerns over the poor water quality of these return flows, particularly including high nutrient levels, have surfaced in recent years. Upper Klamath Lake is a natural lake, with water releases controlled by the Link River diversion dam. This Lake is the primary source for Project water, but is not a storage reservoir such as is found at other reclamation project sites. It has little storage carryover from year to year and depends on current precipitation and snowmelt for water supply. Currently, there is relatively little storage capacity in the Klamath System compared to reclamation projects elsewhere, although some sump areas might be purchased and used for water storage. The Link River Dam controls flows from Upper Klamath Lake, sending some water downriver and some into the A Canal for irrigation distribution. The dam is operated and maintained by PacifiCorp, an energy company that operates several hydroelectric and re-regulating dams on the Klamath River, pursuant to a

Figure 1. Klamath River Watershed



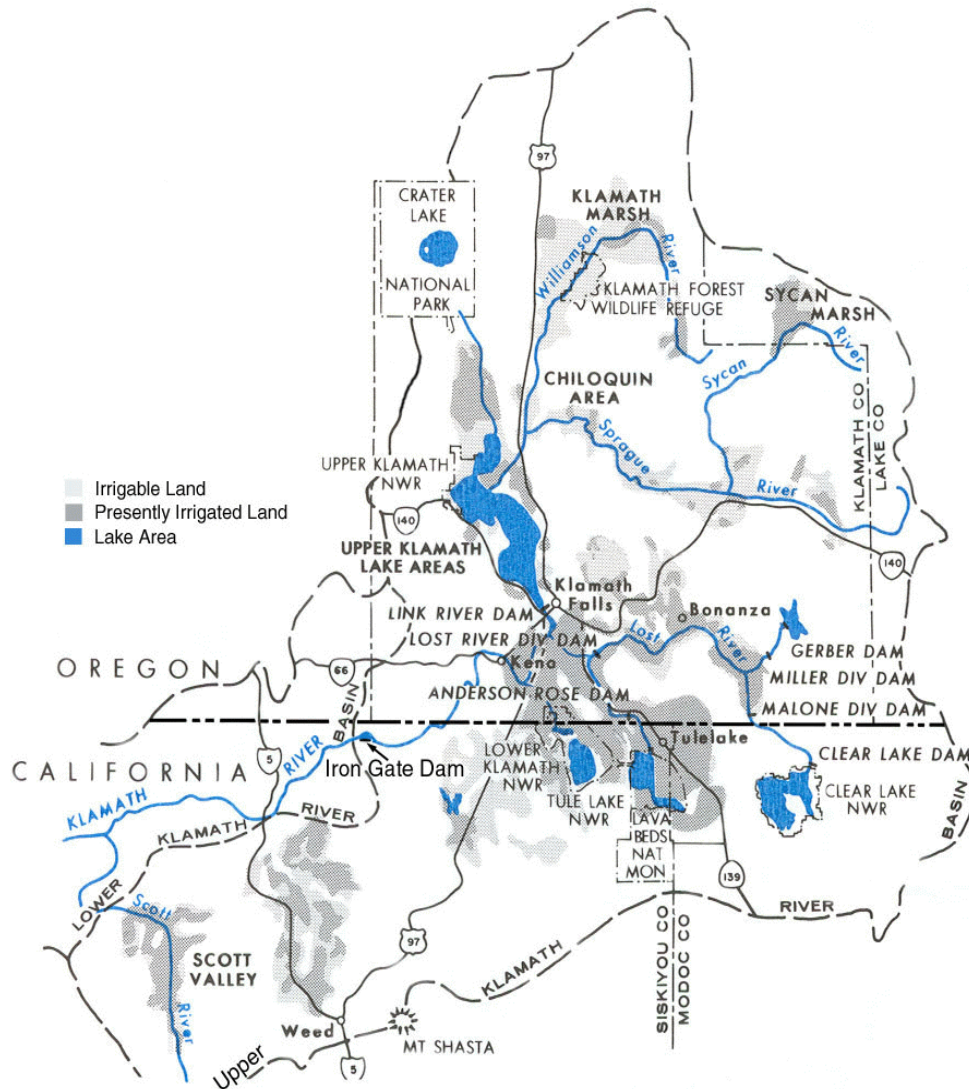
Source: U.S. Fish and Wildlife Service, *Klamath Restoration News*, Klamath River Fish and Wildlife Office (Yreka, CA: Winter/Spring 1995) p. 12.

² Different acreage estimates have been reported for the Project. According to the Bureau's *Factual Data on the Klamath Project* (Oct. 1995), the Project includes 233,625 acres, of which approximately 204,492 were irrigated in 1979. The Bureau's *1992 Summary Statistics, Water, Land, and Related Data* (the last edition to be published) reports the total Project area as 240,412 acres, including areas not in irrigation rotation, farmsteads, ditches, canals, and urban and suburban lands. This source reports that 232,020 acres (1,364 farms) were in irrigation rotation in 1992, and 190,234 acres were harvested with a gross crop value of \$98.4 million.

³ The adjudication process began in 1975 and involves an administrative process to determine pre-1909 water rights that will then be presented to a state court for a final decree. (Oregon began regulating water rights in 1909.) Claimants include the federal government, irrigation districts, the Klamath and Modoc Tribes, the Yahooskin Band of Snake Indians, and individuals who may have established or otherwise acquired rights before 1909.

contract with the Bureau. The relevant Federal Energy Regulatory Commission (FERC) licenses expire in 2006, and flow requirements may be adjusted as part of the renewal process.

Figure 2. Upper Klamath Basin



Source: U.S. Dept. of the Interior, Bureau of Reclamation, Factual Data on the Klamath Project (Oct. 1995)

The Bureau has contracts to deliver water from the Upper Klamath Lake to approximately 1,200 farms to grow various crops including malt barley, cereal grains, potatoes, onions, and alfalfa.⁴ Water is also used on pastures where beef cattle graze. The Bureau estimates that approximately 180,000 to 200,000 acres of irrigated land

⁴ Other farms in the Klamath Project are served by other sources, such as Clear Lake and Gerber Reservoir, which were not as severely affected by the April 2001 decision.

within the Project area were affected by the agency's April 6 announcement.⁵ Although water quantity issues have been the focus of much of the media coverage, water quality issues also are important, and the FWS has reported periodic, significant fish kills both in the Upper Klamath Lake and downstream.

In addition to being the principal source of water for the Bureau's Project, the Upper Klamath Lake is home to two species of fish that are listed as endangered under the ESA – the Lost River and shortnose suckers.⁶ Further downstream, below Iron Gate Dam (located in California just south of the Oregon/California border), the Klamath River is inhabited by the Southern Oregon/Northern California Coasts population of coho salmon, which was listed as threatened under the ESA in 1997.⁷ The Klamath River from Iron Gate Dam to the Pacific Ocean has been designated as “critical habitat” for this population of coho salmon.⁸ Salmon are extinct above the Iron Gate Dam, due to their inability to migrate upstream past the dam. The Lower Klamath National Wildlife Refuge and the Tule Lake National Wildlife Refuge, which provide habitat for numerous migratory waterfowl and bald eagles (which are listed as a threatened species under the ESA), also depend on the Project and irrigation return flows for water.

Project Operations and the ESA

Under the ESA, federal agencies and officials are required to “conserve” listed species, *i.e.*, to recover their numbers to the point that they no longer need the protections of the ESA.⁹ (For background on the ESA, see CRS Issue Brief IB10072, *Endangered Species: Difficult Choices*.) In furtherance of this goal, federal agencies are to consult with either the FWS (for terrestrial and freshwater species) or NMFS (for marine species and anadromous fish) on agency actions (*e.g.*, Project operations for a given year) that might affect a listed species and are to avoid jeopardizing its continued existence.¹⁰ As part of this process, the agency proposing an action prepares a “Biological Assessment” of the situation,¹¹ and then the FWS or NMFS issues a “Biological Opinion” as to whether the proposed agency action is likely to jeopardize a species. If so, FWS and/or NMFS identifies “reasonable and prudent alternatives” (RPAs) to the proposed agency action that would likely avoid jeopardy. If jeopardy cannot be avoided, the agency must forego the proposed action or, as the Supreme Court has noted, proceed at its “own peril” in light of the civil and criminal

⁵ Conversation with J. McCracken, Mid-Pacific Regional Office, Bureau of Reclamation, Dept. of the Interior, Sacramento, California, on Aug. 2, 2001.

⁶ 53 Fed. Reg. 27130 (July 18, 1988). The scientific names of these fish are *Deltistes luxatus* and *Chasmistes brevirostris*, respectively.

⁷ 62 Fed. Reg. 24588 (May 6, 1997). The scientific name of this fish is *Oncorhynchus kisutch*.

⁸ 64 Fed. Reg. 24049 (May 5, 1999).

⁹ 16 U.S.C. §§1531(c) and 1536(a)(1).

¹⁰ 16 U.S.C. §1536(a)(2).

¹¹ 50 C.F.R. §402.12(a).

penalties applicable under the ESA.¹² Thus, even though civil or criminal penalties have seldom been imposed, the Opinions and suggestions rendered by the FWS and NMFS in practice are compelling. Alternatively, the agency and certain others may petition the Secretary of the Interior to convene an Endangered Species Committee, a high level committee that can grant an exemption for the proposed action from the penalties of the ESA. However, this Committee has seldom been used.

Forces driving the current controversy in the Klamath Basin result from the Bureau's annual operation of the Project – specifically the appropriate levels of and releases from Upper Klamath Lake each month – and its effect on threatened and endangered species in the Upper and Lower Basins. Since the FWS listed the suckers as endangered under the ESA in 1988,¹³ several studies and proposals have addressed the Klamath Basin and its species. In 1992, the Bureau prepared a Biological Assessment of the situation, and the FWS subsequently issued a Biological Opinion on the long-term effects of Project operations on the two listed suckers. In 1993, FWS issued a recovery plan for the two species of suckers.¹⁴ In 1997, the NMFS listed the Southern Oregon/Northern California Coasts population of coho salmon as threatened under the ESA.¹⁵

The 1992 FWS Biological Opinion required the Bureau to develop a long-term operations plan, which has only recently been completed. The Bureau consulted with the FWS annually since 1995 on the effects of yearly Project operations on endangered suckers, and with NMFS (for coho salmon) for 1998 and 1999. However, a federal district court faulted the Bureau for failing to formally consult with NMFS on the effects of irrigation releases on downstream coho salmon under its 2000 operating plan, and enjoined (prohibited) the Bureau from making further releases until it formally consulted on its next annual (2001) plan.¹⁶

At the time of the court's decision, the Bureau was in the process of consulting with the two federal agencies on possible effects of its 2001 Operating Plan on several species – with the FWS on the two species of suckers and bald eagles, and with NMFS on coho salmon.¹⁷ FWS and NMFS each issued a Draft Biological Opinion

¹² See: *Bennett v. Spear* 520 U.S. 154, 170 (1997).

¹³ 53 Fed. Reg. 27130 (July 18, 1988).

¹⁴ Under the ESA, a recovery plan is recommendatory only. 16 U.S.C. §§ 1533(f), 1538.

¹⁵ 62 Fed. Reg. 24588 (May 6, 1997). The scientific name of this fish is *Oncorhynchus kisutch*.

¹⁶ *Pacific Coast Federation of Fishermen's Assoc. v. Bureau of Reclamation*, 2001 WL 360146 (N.D. Cal. April 3, 2001). The court was addressing the year 2000 Operating Plan; the Bureau then consulted on the year 2001 Operating Plan.

¹⁷ The Bureau requested reinitiation of consultation on the 1992 Biological Opinion in December of 1999. On February 13, 2001 – less than two months before the typical release (in April) of water from Upper Klamath Lake for the 2001 agricultural season – the Bureau submitted a Final Biological Assessment to the FWS, which included a multi-year operations plan. In March 2001, the Bureau requested the plan only be considered for the 2001 operating year. According to FWS, the Bureau's request for consultation did not
(continued...)

recommending RPAs to the proposed operation of the Project that would not cause jeopardy. The FWS Draft proposed retaining certain water levels in Upper Klamath Lake, and NMFS Draft proposed releasing certain flows from the Lake to benefit the coho salmon (and also the Refuge and bald eagles). Because of severe drought conditions, NMFS and FWS determined that there was not enough water to implement both Draft Opinions as well as provide irrigation water for farmers. The 1992 Biological Opinion had included an RPA that allowed lower minimum (*i.e.*, less restrictive) lake levels than the more recent April 2001 Biological Opinions, thereby allowing more water to flow to farms and other downstream areas than was allowed under the 2001 Opinions.

On April 5 and April 6, 2001, within 3 days of the court's ruling on the 2000 annual plan, FWS and NMFS each released a Final Biological Opinion that again concluded that the Bureau's proposed operation of the Project for 2001 would jeopardize the continued existence of the two species of suckers and the population of coho salmon, and would harm, but not jeopardize, the continued existence of the bald eagles. FWS and NMFS recommended adjusting the minimum levels of Upper Klamath Lake and Klamath River flows to reflect the reduced water available for the 2001 water year. FWS proposed a minimum lake elevation of 4139 feet above sea level, provided that a minimum surface level of 4140 feet was sustained on a long-term basis.¹⁸ FWS maintained that this elevation level would improve water quality and increase habitat for juvenile and adult suckers and provide sucker access to spawning areas. NMFS proposed a range of minimum stream flows below Iron Gate from April through September. The Bureau announced its response on April 6, implementing proposed alternatives that severely limited the delivery of irrigation water. For the 2001 water year, the Bureau stated that the normal (for a non-dry or non-critically dry year) 70,000 acre-feet (af) of water would be available for lands receiving water from Clear Lake and Gerber Reservoirs, but that no water would be available from Upper Klamath Lake for deliveries to irrigators or to the Lower Klamath National Wildlife Refuge. In a "normal" (non-dry or non-critically dry) year,

¹⁷ (...continued)

include the bald eagle; however, because of potential effects on the bald eagle, FWS included an analysis of the plan on the bald eagle as well.

¹⁸ According to the FWS in its April 2001 Biological Opinion, the lowest minimum levels proposed for the Upper Klamath Lake (in September) in the Bureau's February Biological Assessment, on which the 2001 annual operating plan was based, was 4,136.8 feet above mean sea level. FWS notes the Bureau's proposed level "is more than 2 ft below the elevation the Bureau previously considered minimally necessary to protect the suckers [4,139 feet], and is more than 3 ft below the level that the Service recommended in its formal consultation stage...". The minimum level established in the April 2001 Biological Opinions is 4140 feet, unless the Bureau advises FWS that anticipated water flows into the Lake will not be sufficient to meet that target. In the latter case, a coordination process outlined in the April 5 Biological Opinion is to be used. The 1992 Biological Opinion on the effects of Project operations on the suckers established minimum levels for Upper Klamath Lake in September at 4,139 feet, which "could be compromised in no more than 4 of 10 years with a minimum elevation of 4137 feet." Bureau data indicate that 4139.9 feet is the historical lowest lake level prior to the construction of the Link River Dam.

net water deliveries for agricultural use from the Lake could range from 325,000 af to 400,000 af.¹⁹

The possibility that the lack of water for refuge lands could ultimately result in the death of bald eagles prompted a notice of intent to sue, but suit was not filed at that time because of ongoing efforts at mediation. Irrigators and local counties did sue to enjoin the 2001 Operating Plan, but this request was denied.²⁰ In July 2001, Bureau water gates were unlawfully opened to allow a flow of water into irrigation canals. Local authorities declined to intervene, leaving law enforcement to federal authorities. On behalf of several irrigation districts and water recipients, the Pacific Legal Foundation and two Congressmen petitioned the Secretary of the Interior to convene an Endangered Species Committee to exempt water releases by the Bureau from the ESA. However, this petition was denied on July 13th, since under the ESA only a federal agency, a permit or license applicant, or the Governor of the relevant state may apply for an exemption.²¹

On July 24th, Secretary of the Interior Gale Norton announced that about 70,000 to 75,000 af of water would be released from Upper Klamath Lake to assist farmers. This amount of water represented about 15%-20% of the water typically delivered to Project users from the Lake in non-drought years, but could have restored some wells and saved pastures, hay, and some row crops. The availability of the water was attributed to higher than anticipated inflows into Upper Klamath Lake and to water conservation measures. Initially, no water was made available to the Lower Klamath National Wildlife Refuge, but subsequently some water was made available.

Because many disagreed over the fundamental guidance contained in the 2001 Biological Opinions, the Secretary of the Interior sought and secured review of the scientific decisions by the National Academy of Sciences (NAS). On February 6, 2002, NAS released its Interim Report from the Committee on Endangered and Threatened Fishes in the Klamath River Basin.²² (A final report is due March 2003.) The Committee concluded that there was insufficient scientific support for FWS and NMFS recommendations to maintain minimum water levels in Upper Klamath Lake and increase minimum flows in the Klamath River. While the report noted that all other components of the Biological Opinions appeared to have scientific support, it stated that these critical decisions did not. At a House Resources Committee oversight hearing on March 13, William Lewis, Chairman of the NAS Committee, noted that “Despite the availability of a substantial amount of data collected by federal scientists and others, no clear connection has been documented between low water

¹⁹ Written communication *via* facsimile, U.S. Bureau of Reclamation, Klamath Project, October 1, 2001.

²⁰ *Kandra v. United States*, 2001 U.S. Dist. LEXIS 6932 (April 30, 2001).

²¹ 16 U.S.C. § 1536(g)(1).

²² Committee on Endangered and Threatened Fishes in the Klamath River Basin, *Scientific Evaluation of Biological Opinions on Endangered and Threatened Fishes in the Klamath River Basin*, Interim Report. Washington, DC: Board on Environmental Studies and Toxicology, Division on Earth and Life Sciences, National Research Council (February 2002), 26 p.

level in Upper Klamath Lake and conditions that are adverse to the welfare to [sic] the suckers.”²³ He also noted that the NAS Committee found no “... sound scientific basis for NMFS recommendations on increased minimum flows in the Klamath River main stem.” However, the NAS Committee further concluded there was also no sound scientific basis for operating Upper Klamath Lake at the lower levels proposed in the Bureau’s 2001 Biological Assessment. In other words, the NAS Committee found that scientific data were insufficient to support either of the management regimes proposed by federal agencies for the 2001 growing season.

Meanwhile, on September 10, 2001, a federal district court in *Alesea Valley Alliance v. Daley*²⁴ struck down the listing of the Oregon Coast Evolutionary Significant Unit (ESU) coho salmon (*i.e.*, the coastal population north of the Klamath River drainage) as threatened on the grounds that, while NMFS treated hatchery and wild salmon alike for some purposes and evidence was before the court to the effect that the two were genetically identical, NMFS considered only the wild salmon in declaring a population of this species to be threatened. The court set aside the listing decision as arbitrary and capricious, and remanded the matter to NMFS for further consideration consistent with the opinion. The government did not appeal the ruling, announcing instead that it would review 23 other listings of salmon populations in light of the court’s opinion. An environmental organization was allowed to intervene for purposes of appeal and the 9th Circuit has stayed the delisting pending appeal. Additional lawsuits have been filed challenging the listing of other salmon populations on similar grounds. Some assert that “junk science” was used in connection with these other listings; others rejoin that inadequate and outdated genetic evidence was presented in *Alesea*. Broader issues as to the role hatchery fish should play in listing and recovering declining species also underlie the current controversy, since several hatcheries supplement salmon production in the Klamath River drainage.

In a different but related matter, a federal district court held in March 2002 that the economic analysis supporting a designation of critical habitat was insufficiently specific.²⁵ Although this case related to habitat for a bird, in reaction to this case, NOAA is seeking approval of a consent decree to withdraw critical habitat designations for 19 salmon and steelhead populations.²⁶ The Pacific Coast Federation of Fishermen’s Associations and other groups were denied intervenor status in this case, but have filed objections questioning, among other things, whether critical habitat can be withdrawn by a judicial settlement or whether withdrawal must be done by rulemaking.

Many private efforts are ongoing to devise long-term solutions to the Klamath dilemma by increasing water storage capability, decreasing agricultural water usage, and improving water quality. Possibilities might include the purchase and flooding

²³ William M. Lewis, Jr., Ph.D. Statement before the House Committee on Resources, March 13, 2002. p. 6.

²⁴ 2001 U.S. Dist. LEXIS 14443 (D. Or. 2001).

²⁵ *New Mexico Cattle Growers Association v. United States Fish and Wildlife Service*, (248 F. 3d 1277 (10th Cir. 2001)).

²⁶ *National Association of Home Builders v. Evans*, (00-2799 CKK, D. D.C.).

of low-lying areas to store winter and spring runoff, the purchase of farm lands from willing sellers to retire the lands from production, the elimination of leased farmlands within the federal refuges, and the prevention of cattle wastes from discharge to the river.

On March 1, 2002, President Bush announced the formation of the Klamath River Basin Federal Working Group, a high-level interdepartmental group comprised of the Secretary of Agriculture, the Secretary of the Interior, the Secretary of Commerce, and the Chair of the Council on Environmental Quality. The group held its first meeting March 11 and announced measures to improve water quality and availability, including \$1.6 million in Department of Agriculture funds to deliver conservation, technical, and financial assistance for irrigation water management, increased filter strip use, and wildlife habitat creation; an extension of the deadline for enrolling in the Emergency Conservation Program; stream improvement projects in the Winema-Fremont National Forest; completion of Biological Opinions for the operation of the Project on a highest priority basis; and the acceleration of fish screen construction to minimize the number of fish entering the A Canal (the major water diversion from Upper Klamath Lake). These screens may be in place by the 2003 growing season.

The Klamath diversion gates were opened on March 29, 2002, to begin delivery of water to farms for the 2002 season, following issuance of 2002 Interim Biological Opinions by NMFS and FWS approving annual operation of the Project for April-May 2002. The Bureau proceeded, based on these two-month "letter(s) of concurrence" issued by NMFS and FWS for the months of April and May. By late April 2002, the Bureau had reduced mainstem flow below Iron Gate Dam to 1,350 cubic feet per second (cfs), despite significantly increased rainfall in the Klamath Basin. This flow was 350 cfs less than the amount identified by NMFS's 2001 Biological Opinion as the minimum flow necessary to prevent coho salmon extinction. The Pacific Coast Federation of Fishermen's Associations (PCFFA) and others filed suit to enjoin these reduced flows.

On April 25, 2002, the FWS released its Draft Biological Opinion on the impact of the Klamath Water Project on Upper Klamath Basin species, indicating that the Bureau's proposed 10-year (June 1, 2002 through March 31, 2012) plan would jeopardize the continued existence of species, and noting a number of actions needed to mitigate impacts. Higher lake levels were not required except in dry and critically dry years. On May 16, 2002, NMFS released its Draft Biological Opinion, also concluding that the Bureau's 10-year plan would likely jeopardize the downriver coho salmon. The PCFFA lawsuit is the first challenge to the Bureau's 10-year plan, which has been criticized by fishermen and the California Department of Fish and Game as reducing the chances for successful fish restoration and having devastating impacts on downriver salmon fisheries.

The Final Biological Opinions from both FWS and NMFS were released on May 31, 2002. Both Final Opinions found the Bureau's 10-year plan likely to jeopardize the continued existence of ESA-listed species. The NMFS jeopardy determination focused on incremental depletions of Iron Gate Dam flows over the 10-year plan, increasing risk to coho salmon. The FWS jeopardy determination focused on 1)

sucker entrainment losses²⁷ at Project dams and diversions in Upper Klamath Lake; 2) adverse Project effects on water quality and sucker health in Upper Klamath Lake; and 3) sucker habitat loss in Upper Klamath Lake. FWS and NMFS each developed a reasonable and prudent alternative (RPA) to avoid the jeopardizing effects of Project operations.

The FWS RPA focused on an adaptive management approach to implement Project operations at Upper Klamath Lake to address water quality, entrainment, and habitat effects. Elements of this adaptive management would 1) require the Bureau to improve the accuracy of Upper Klamath Lake inflow forecasts, ensure that Lake levels more accurately reflect the water-year types,²⁸ and reduce the threat of adverse water quality in the Lake in late summer; 2) require the Bureau to prepare a draft entrainment reduction study by December 31, 2002, to reduce the entrainment of suckers past the Link River Dam, and implement an FWS-approved plan beginning April 1, 2003; and 3) require the Bureau to work with FWS in studying factors affecting water quality leading to fish die-offs and implement actions to reduce die-off frequency.

The NMFS RPA focused on providing adequate water flow for coho salmon. Elements of this RPA include 1) specific water management measures; 2) a water bank and water supply enhancement program to provide flows to the Klamath River below Iron Gate Dam to improve coho salmon habitat; 3) an agreed-upon long-term flow target to be achieved by 2010; 4) an inter-governmental task force to develop, procure, and manage water resources in the Klamath Basin; and 5) an inter-governmental science panel to develop and implement a research program to identify and address gaps in existing knowledge regarding coho salmon and their habitat requirements during various life history stages. The RPA includes measures whereby a multi-agency task force would procure water from non-Project sources in both Oregon and California, and the Bureau phase-in higher water flows in the Lower Klamath River as more water is purchased through the “water bank” mechanism recently established by the Bureau. Monitoring and testing would determine what flows coho salmon need for recovery.

As the RPAs are implemented, water releases during initial years of the 10-year plan would likely continue to be low, since flow targets are not to be achieved until 2010. This situation might be expected to raise the same questions and challenges as did the low flows in April and May, 2002. However, on June 3, 2002, the Bureau formally rejected both Final Biological Opinions, but opted instead to operate under a one-year plan that it asserts complies with the Opinions.

²⁷ Entrainment (*i.e.*, entrapment) occurs when sucker larvae, juveniles, sub-adults, and adults enter water diversions and become trapped. Screening of water diversions to reduce sucker entry is the primary means to address this concern.

²⁸ A water-year type (*e.g.*, above average, below average, dry, critically dry), upon which water management decisions are made, is forecast determination by the Bureau, based upon a number of water supply criteria.

Water Allocation and Conflicting Water Needs

Conflicts over the amount of Klamath Basin water allocated to irrigation, to the Tribes, and to flows for fish and wildlife survival and habitat have been at issue for decades. Some assert that there hasn't been enough water for both irrigation and healthy fish populations for years because irrigation uses as much or more than the annual rainfall in the area. Salmon abundance began to decline by 1920, following the irrigation of farmlands by the Klamath Project, causing California to prohibit more dams on the Klamath below the Shasta River.²⁹

Controversy has significantly intensified since the listing of the suckers as endangered in 1988 and the listing of the coho salmon population as threatened in 1997. These listings, together with judicial recognition of the senior rights of the Tribes, have resulted in the re-prioritization of water, such that in times of drought it is now the irrigators who may receive less water. However, with the State of Oregon's adjudication of water rights not yet completed and the status of the coho listing pending appeal, there currently appears to be no clear resolution to the question of how and when specific amounts of water shall be allocated and to what purposes.

The Bureau began acquiring water rights for the federal Project in 1905 and filed a formal application with the State of Oregon in 1909 to appropriate water for delivery to landowners within the Project area. In addition, the Lower Klamath National Wildlife Refuge (established in 1908) may have federal reserved water rights for an as yet undetermined amount of water sufficient to accomplish its purposes that was unappropriated when the Refuge was created,³⁰ and other Refuges depend on Basin waters. In 1957, a bi-state compact known as the Klamath River Compact³¹ gave domestic (including municipal) users and irrigators in the Upper Basin preferential use of "unallocated" water supplies; however, the effect of the Compact is not clear because it excepts the rights and obligations of the United States. In addition to the federal rights and obligations, some private rights also may predate the 1909 federal rights for reclamation purposes.

The State of Oregon controls allocation of that state's waters, except to the extent of federal or trust rights, *e.g.*, Tribal rights and water for federal reservations (national forests, national wildlife refuges, Bureau of Land Management lands, etc.). A general adjudication of Oregon water rights and priorities began in 1975 and is still underway. This process will establish or register quantities and priorities of all rights in the Upper Basin. It is not clear when this adjudication might be completed.

²⁹ California Legislature, *Proposed Klamath and Trinity River Diversions and Other Projects in the Central Valley*, Joint Committee on Rivers and Flood Control (Sacramento: California State Printing Office, 1945), p. 39.

³⁰ *Pacific Coast Federation of Fishermen's Associations v. Bureau of Reclamation*, 138 F. Supp. 2d 1228, 1231 (N.D. Cal. 2001).

³¹ P.L. 85-222, 71 Stat. 497.

Irrigation

Approximately 1,400 farms (1,000 full-time farms) rely on water from the Bureau's Project facilities overall, and approximately 1,200 full- or part-time farms were believed to be affected by the April 6, 2001 announcement regarding deliveries from the Upper Klamath Lake. Some of the farmers who traditionally received water from the Lake were able to use well water or water from other sources; however, because water supplies were in doubt at the beginning of the planting season, many farmers did not plant crops in 2001. (Water was made available in April 2001 to approximately 200 farms in the Project area served by other Bureau water storage and delivery facilities.) In mid-July 2001, the Bureau released limited water flows from Upper Klamath Lake (70,000 af – 15% to 20% of deliveries in a non-drought year) based on higher inflows to the Lake than expected and water conservation measures. Some users complained that this was “too little, too late,” and it is not clear what economic effects this release may have had. Overall, approximately 150,000 af were delivered in 2001, compared to the approximately 450,000 af normally delivered; however, farms receiving water from Upper Klamath Lake received 70,000 af in 2001, compared to the 350,000 af to 400,000 af they would normally have received.

Prior to the mid-July 2001 release, Project water users estimated losses to the surrounding economy for the 2001 crop year of between \$160.7 million and \$222 million.³² The Association estimates the annual value of crops grown in the Klamath area at \$110.8 million, based upon a five-year average (1996-2000). A study by the Oregon State University's Agricultural and Resource Economics Department estimated that the Bureau's recent water allocation plan would reduce personal income in the Klamath area by \$70 million and reduce total gross sales in the area by \$157 million during the first year of implementation.³³ Although some of these losses may be offset by payments under federal crop insurance and other disaster assistance programs, it is not clear to what extent this relief was made available. To date, Congress has provided \$20 million to affected producers to promote water conservation in the area (P.L. 107-20, §2104). An additional \$50 million was included in the farm bill, P.L. 107-171 (§2301, amending Title XII of the Food Security Act of 1985, §1240I(c)(2)).

For the farms involved, the issue is not simply their 2001 crop year losses. Perennial crops may be damaged or lost, with consequences for future years. Beyond that, there is the risk that the drought may persist. Those who depend on Bureau irrigation water may be wary of the possibility that the water management decisions of 2001 that curtailed farmers' shares will be seen as precedents for the future, thereby potentially decreasing land values as well as annual income. Further, some farmers argue that they or their relatives were enticed to settle and reclaim wetlands and other

³² Klamath Water Users Association, letter “To Whom It May Concern,” dated May 22, 2001.

³³ Oregon State University, Dept. of Agricultural and Resource Economics, *Economic Impacts of 2001 Klamath Project Water Allocation*, (Corvallis, OR: May 22, 2001). The primary difference in this study's conclusion as compared with the water users' estimate appears to be that the OSU study uses more conservative multipliers when estimating indirect effects on the local economy.

areas for farming as part of long-established federal programs. They contend the government is now breaking earlier “promises” of water and land to farm. Although farming today is a relatively small share of local income at the county level, which some see as a justification for downplaying farmers’ claims to water, it is still a significant share of income in the rural areas of many counties.³⁴ There remains the largely intangible role that farming plays in the fabric of local communities and the rural, agriculture-based culture that has developed since the initiation of the Project in the early 1900s.

Tribal Rights and Issues

In addition to federal and private water rights within the Basin, several Tribes hold treaty and non-treaty fishing and water rights. The Klamath, Modoc, and Yahooskin Band of Snake are generally known as the Klamath Tribes. In addition, the Yurok and Hoopa Valley Tribes in the Lower Klamath also have interest in the fisheries resources. The two species of endangered suckers play an integral role in the Klamath Tribe’s customs and traditions, and the coho salmon are important to the Klamath, Yurok, and Hoopa Valley Tribes. Past efforts by the Tribes to raise concerns regarding fish population health were highlighted by the ESA listings. Several studies (the *Trihey*,³⁵ and two *Hardy* reports³⁶) have been conducted regarding flow releases necessary to maintain and protect species and resources important to the Tribes.

A court has held that the rights of the Klamath Tribes have a priority date of “time immemorial”³⁷ and are not restricted by the date of the Tribes’ 1864 Treaty with the U.S. Government.³⁸ Therefore, these tribal water rights take precedence over any other water rights in the Basin; however, these rights have not yet been quantified in Oregon’s Klamath Basin adjudication. A recent court decision clarified both the

³⁴ There are several ways to portray the importance of agriculture to a region, such as share of personal income, proportion of employment, and contribution to economic activity. These can give quite different indications; for example, estimates of agriculture’s share of personal income for Klamath County may be as low as 1%-2%, while its contribution to economic activity could be 8%-10%. Even so, these numbers do not convey the extent to which outlying areas rely on agricultural income. For example, Klamath County’s economic activity is dominated by the town of Klamath Falls, to which agriculture may contribute a relatively small share, while in more rural parts of the County agriculture may be virtually the sole source of business activity.

³⁵ Trihey and Associates, *Instream Flow Requirements for Tribal Trust Species in the Klamath River*, Prepared on behalf of the Yurok Tribe, March 1996, 43 p.

³⁶ Institute for Natural Systems Engineering, *Evaluation of Interim Instream Flow Needs in the Klamath River: Phase I*, Final Report, Prepared for Department of the Interior by Utah Water Research Laboratory, Utah State University (Logan, UT: 1999), 54 p.; Thomas B. Hardy and R.C. Addley, *Evaluation of Interim Instream Flow Needs in the Klamath River: Phase II*, Draft, November 21, 2001, 148 p.

³⁷ *United States v. Adair*, 723 F. 2d 1394 (9th Cir. 1983); *Parravano v. Babbitt*, 70 F. 3d 539 (9th Cir. 1995); *Klamath Water Users Association v. Patterson*, 204 F. 3d 1206 (9th Cir. 2000).

³⁸ *United States v. Adair*, *supra*, at 1414.

priority date of the Tribes' rights and their possible scope. The federal district court for Oregon held that the Klamath Tribes have reserved gathering rights along with their hunting, fishing, and trapping rights, and that all of these rights have accompanying water rights.³⁹ These rights are to be quantified at a level that will sustain productive habitat so that there will be game to hunt, and fish to catch, as well as edible plants to gather. The State had looked to language in the cases that stated that the Tribes were entitled to rights to natural resources that would "provide the Indians with a livelihood – that is to say, a moderate living"⁴⁰ to conclude that the Tribes were entitled only to that amount of unconsumed water flowing through each described reach as of the date of the first Adair case, or the quantity of water claimed by the BIA for physical habitat maintenance flows, whichever is less. However, the court concluded that the Tribes' water could not be reduced below that necessary to maintain productive habitat and that to do otherwise would be tantamount to assigning a 1979 or 1984 priority date to the Tribes' water rights, a result that was not permissible because the priority date of the Tribes' rights is "time immemorial." How this holding will affect Klamath Basin water allocations is not yet clear.

The Ninth Circuit also held that the Bureau, rather than the power company that operates Link River Dam, is liable for water allocations, and irrigators are not third-party beneficiaries of the contract between the Bureau and the operator, and therefore cannot sue to enforce the terms of the operating contract. As part of its reasoning, the court agreed with the district court that the irrigators' rights to water deliveries were subservient to the duties of the Bureau to comply with the ESA and to meet senior Tribal water rights.⁴¹

On March 19, 2002, Secretary of the Interior Norton announced a series of upcoming meetings with the Klamath Tribes to work on long-term solutions to the issues in the Klamath River Basin, and indicated that the discussions may include possible return of additional Tribal lands.

Despite significant rainfall in the Klamath Basin, the Bureau, acting on a two-month "letter of concurrence" issued by NMFS for April and May 2002, cut flows in the Lower Klamath River. By April 26th, the Bureau had cut flows to 1350 cubic feet per second, 350 cfs less than the amount required during the previous year's drought as necessary to prevent extinction. Commercial fishermen sought an emergency injunction to require additional water to be left in the Lower Klamath River in order to increase survival of juvenile salmon attempting to migrate downstream, but on May 3, this request was denied. Although the judge indicated agreement with the fishermen on legal points, the court deferred to the Bureau, pending completion of a formal Biological Opinion by NMFS on the impacts of the Bureau's proposed operating plan for the Lower Klamath River.

³⁹ United States v. Adair, 2002 WL 276110, 2002 U.S. Dist. LEXIS 3397, (D. Or. February 27, 2002).

⁴⁰ 2002 WL 276110 * 3 discussing Adair, *supra*, at 1414-1415, and quoting from 443 U.S. at 686.

⁴¹ Klamath Water Users Protective Association v. Patterson, 191 F. 3d 1115 (9th Cir. 1999), *as amended on denial of rehearing and rehearing en banc*, 203 F. 3d 1175 (9th Cir. 2000), *reprinted as amended*, 204 F. 3d 1206 (9th Cir. 2000), *cert. denied* 531 U.S. 812 (2000).

On April 25, 2002, the FWS issued a Draft Biological Opinion on the impact of the Klamath Water Project on the Upper Klamath Basin fish species and bald eagles, that concluded that the 10-year plan would cause jeopardy to the suckers and would adversely modify proposed critical habitat. The FWS Opinion noted several actions that could be taken to mitigate the impacts, but, based on the NAS criticism, higher lake levels were not required except in dry years.

Fish and Wildlife

Several national wildlife refuges in the Klamath Basin are affected by Project water use and deliveries, including water and land uses on private lands within and outside the Project. Both water quantity and quality are of concern. For example, Upper Klamath Lake and Klamath River levels affect fish survival and reproduction, but poor water quality in the Lake has also led to fish kills and limits the recovery of listed fish. Additionally, releases of water at temperatures too warm for downstream salmon survival have also been a concern.

Refuges. Initially, the Lower Klamath National Wildlife Refuge was directly affected by the Bureau's April 6, 2001 announcement that no water was available to users downstream from Upper Klamath Lake. The Refuge was created in 1908 by President Theodore Roosevelt to protect migratory birds and holds the distinction of being the Nation's first waterfowl refuge.⁴² The roughly 50,000-acre Refuge is comprised of open water, shallow freshwater marshes, grassy uplands, and croplands (28% of the land area) that provide food and habitat for large numbers of waterfowl (nearly 80% of the Pacific flyway's migratory waterfowl) as well as for bald eagles (downlisted from "endangered" to "threatened" under the ESA in 1995) that migrate into the Klamath Basin during fall and winter each year. Unlike farms, the Refuge did not receive water from the Bureau's mid-July 2001 release of water from Upper Klamath Lake, and suit was filed by the Oregon Natural Resources Council and others, asserting that under FWS's Biological Opinion of April 5, 2001, the Refuge was to receive a minimum of 32,255 af of any extra water that might be available from the Upper Klamath Lake. That amount was identified as the minimum amount sufficient to sustain about a thousand bald eagles and 6% of the Refuge's 1.8 million birds during the fall migration. Subsequently, some water for the Refuge was made available from Clear Lake (2,600 af), an additional amount was donated by PacifiCorp, some water was purchased, and rain provided some water, such that approximately 23,815 af was actually received from May 1 through October 31.⁴³ As a result of the shortfall, there was less successful nesting and rearing of young waterfowl due to reduced habitat and increased concentration of birds, which made them more susceptible to predation.⁴⁴

⁴² U.S. Dept. of the Interior, Fish and Wildlife Service, Lower Klamath National Wildlife Refuge, at: [<http://www.klamathnwr.org/lowerklamath.html>], on June 12, 2002.

⁴³ Communication from Tim Mayer, Region 1, Fish and Wildlife Service, U.S. Dept. of the Interior, on April 2, 2002.

⁴⁴ Ibid.

Fisheries. Klamath Basin waterways support anadromous steelhead trout, sturgeon, and salmon necessary for Native American subsistence and ceremonial purposes, ocean commercial harvest, and recreational fishing. Yurok Tribal members conduct both subsistence and commercial gillnet fishing in the Klamath River between its confluence with the Trinity River and the Klamath's mouth at Requa. Members of the Karuk Tribe have fishing rights to use hand-held dip nets in the half mile of the Klamath River below Ishi Pishi Falls. Annually more than one-third of the 600,000 Chinook salmon taken by commercial hook-and-line trollers on the ocean between Fort Bragg, CA, and Coos Bay, OR, originate in the Klamath Basin. Beyond the direct revenues to fishermen of nearly \$6 million annually since 1986, this commercial fishing also supports various businesses in fishing ports that contribute substantially to local economies. Recreational fishing occurs in the ocean off the mouth of the Klamath River and upstream within the Klamath Basin.⁴⁵ All users of these fish have been harmed by increasingly restrictive fishing regulations and low fish populations during the last decade, exacerbated by even more stringent restrictions on fishing subsequent to the 1997 ESA listing of the coho salmon in the Klamath Basin.

Within the Klamath Basin, the allocation of drought-limited water to support the endangered suckers and threatened coho salmon contributes to the current tensions. Resident and migratory fish require sufficient streamflow to provide access to spawning habitat and to keep spawning areas submerged until young fish have emerged from spawning gravels. Scientists have varying opinions on the quantity and timing of water releases necessary to provide sufficient water for fish recovery in the Upper and Lower Klamath Basins; these flow and storage needs are critical to determining how much water might be available for other purposes. Because of large die-offs of suckers in Upper Klamath Lake since 1992 and new information on the potential adverse effects of low lake levels, the FWS concluded that higher minimum lake levels were needed than had been recommended in its 1992 Biological Opinion and included in the Bureau's proposed 2001 operating plan.⁴⁶ NMFS determination on water requirements for coho salmon in the Lower Basin further complicated matters by recommending the release of additional water from Upper Klamath Lake at the same time that FWS was recommending water be held to raise the lake level.⁴⁷ Some water users were critical of the agencies' conclusions and urged that the science underlying the Biological Opinions be reexamined; others concluded that NMFS's

⁴⁵ Chapter 1 of *Long Range Plan for the Klamath River Basin Conservation Area Fishery Restoration Program*, at [<http://endeavor.des.ucdavis.edu/kris/BIBLIO/httoc.htm>] on June 12, 2002.

⁴⁶ U.S. Dept. of the Interior, Fish and Wildlife Service, *Biological/Conference Opinion Regarding the Effects of Operation of the Bureau of Reclamation's Klamath Project on the Endangered Lost River Sucker (Deltistes luxatus), Endangered Shortnose Sucker (Chasmistes brevirostris), Threatened Bald Eagle (Haliaeetus leucocephalus), and Proposed Critical Habitat for the Lost River/Shortnose Suckers* (Prepared by Klamath Falls Fish and Wildlife Office, April 2001). Section I, p. 1.

⁴⁷ National Marine Fisheries Service, *Biological Opinion, Ongoing Klamath Project Operations* (April 6, 2001), at [<http://swr.ucsd.edu/psd/kbo.pdf>] on June 12, 2002.

analyses and recommendations were based on the best available science.⁴⁸ Secretary of the Interior Norton asked the NAS to review the Opinions. As discussed above, the Interim Report concluded that there was insufficient scientific information to support FWS and NMFS recommendations to maintain minimum water levels in Upper Klamath Lake and to increase minimum flows in the Klamath River mainstem. This review also concluded that there was no sound scientific basis for operating the Lake at the lower levels proposed in the Bureau's 2001 Biological Assessment – that there were insufficient scientific data to support either management regime proposed by federal agencies for the 2001 growing season.

Fishery interests have been particularly concerned about water supplies benefitting salmon habitat in the Lower Basin. Because the Southern Oregon/Northern California Coasts population of coho salmon is listed as threatened,⁴⁹ the commercial harvest of coho salmon has been prohibited to protect these fish. In addition, the Chinook salmon harvest has been restricted in northern California and southern Oregon marine waters for several years to allow the Klamath River to attain the Pacific Fishery Management Council's spawning escapement goal of 40,000 fall-run Chinook salmon. Thus, fishermen, including tribal fishermen, are keenly focused on the recovery of the Klamath Basin's salmon populations. Currently, the commercial fishing industry in this area focuses on the ocean harvest of Chinook salmon originating from the Klamath and Trinity River Basins to sustain economic viability and the fishermen's way of life. In P.L. 99-552 (16 U.S.C. 460ss *et seq.*), Congress funded a 20-year fishery restoration plan, and a Klamath River Basin Fisheries Task Force was authorized and charged with implementing the program.⁵⁰ Various groups have attempted to negotiate fishery management and harvest agreements, with differing opinions on how many adult Chinook salmon should be permitted to spawn and how large a commercial harvest should be allowed. A group representing commercial fishermen who depend on river flows in the Lower Basin noted that appropriately timed releases of freshwater were needed to support economic interests downstream, such as those that rely on species that have not declined to the point they are listed under the ESA (*e.g.*, Chinook salmon and steelhead trout).⁵¹

⁴⁸ In *Kandra v. United States* (145 F. Supp.2d at 1210), the District Court rejected the irrigators' claim that agency science was "arbitrary and capricious".

⁴⁹ However, this listing could be rescinded. Refer to page 9 of this report for a discussion of the September 2001 decision on *Alsea Valley Alliance v. Evans*.

⁵⁰ Members of the Task Force include representatives of: 1) commercial and in-river sport fishermen; 2) the Yurok, Karuk, Hoopa, and Klamath Tribes; 3) Del Norte, Humboldt, Trinity, Siskiyou, and Klamath counties; 4) the California Dept. of Fish and Game and the Oregon Dept. of Fish and Wildlife, and 5) the U.S. Departments of Agriculture and the Interior, and NMFS (U.S. Dept. of Commerce).

⁵¹ Pacific Coast Federation of Fishermen's Associations, *Fishermen Demand Equal Enforcement of the Law, Call for U.S. Marshals to Stop Agri-Terrorism*, Press release (July 6, 2001).

Water Quality

Water quality is yet another aspect of these concerns, with two distinct issues: 1) in the Upper Basin, agricultural runoff harms water quality of Upper Klamath Lake and is addressed by the State of Oregon, while 2) in the Lower Basin, water quality concerns related to low flows below Iron Gate Dam are addressed by the State of California. Thus, while there are actions that can be taken by the Project to minimize impacts to listed fish (*e.g.*, install fish screens, alter Upper Klamath Lake levels, modify water releases affecting downstream river flows), salmon recovery will likely also require actions on private lands outside the Project, possibly including conservation easements or cooperative restoration projects with private landowners. Until both ESA-listed suckers and coho salmon recover, water quality concerns related to Upper Klamath Lake levels as well as downstream river flow requirements could result in water shortages for Project farmers (not just in drought years). The result could include steps to modify farming practices to reduce irrigation runoff, thus imposing another economic hardship on the Klamath farmers, and probably resulting in renewed requests for the federal government to assist them in addressing these new restrictions.

Upper Basin. Poor water quality in Upper Klamath Lake has killed fish and limits the ability to recover ESA-listed suckers.⁵² Water quality is largely influenced by the blue-green algae *Aphanizomenon flos-aquae*, which can become extremely abundant in Upper Klamath Lake. Fish kills are associated with extended periods of calm conditions and high algae populations. Collapse of the algae populations and algae decay cause dissolved oxygen levels in lake water to decrease below 4.0 milligrams per liter (mg/l) for 10-24 hours a day for as long as several days, a condition known as hypoxia. Fish kills continue for 20-30 days after the periods of hypoxia. The Project affects the water quality of Upper Klamath Lake to the extent that nutrients from lands within the Project area flow into Upper Klamath Lake and promote algae growth. Water quality problems are also related to the loss of wetlands adjacent to Upper Klamath Lake and to land use practices in the tributaries to the Lake, which are outside the Project area. The February 2002 NAS Interim Report could not substantiate any connection between fish mortality and the surface water level of Upper Klamath Lake.

In November 2001, the Oregon Department of Environmental Quality released a draft state plan for improving water quality of the Upper Basin's lakes and rivers,⁵³ focusing on reducing phosphorus in runoff by about 40%. The draft plan suggests an open-ended adaptive management process to identify how this reduction in phosphorus runoff might be achieved.

⁵² David L. Perkins, Jacob Kann, and G. Gary Scoppettone, *The Role of Poor Water Quality and Fish Kills in the Decline of Endangered Lost River and Shortnose Suckers in Upper Klamath Lake*, Report submitted to U.S. Bureau of Reclamation, Contract 4-AA-29-12160. (Reno, NV: U.S. Geological Survey, Biological Resources Division, September 2000), 39 p.

⁵³ Oregon Department of Environmental Quality, *Draft Upper Klamath Lake Drainage Total Maximum Daily Load (TMDL)* (November 2001) at [<http://www.deq.state.or.us/wq/TMDLs/UprKlamath/UprKlamathTMDL.pdf>], on June 12, 2002.

Lower Basin. Water quality in the tributaries to the Klamath River below Upper Klamath Lake is key to concerns for coho and Chinook salmon in the Lower Basin. For example, the Shasta and Scott Rivers were essentially drawn completely dry in the summer of 2001 by irrigation withdrawals on principally private lands. In addition, salmon populations of the mainstem Klamath River below Iron Gate Dam (river mile 190) are often exposed to impaired water quality that can cause stress-induced or direct fish kills.

The State of California has identified temperature, dissolved oxygen, and nutrients as water quality parameters of concern in the mainstem Klamath River below Iron Gate Dam. The California State Water Resources Control Board (SWRCB) is required under §303 of the federal Clean Water Act (CWA) and the California Water Code (§13240) to adopt water quality standards. In response to these requirements, the SWRCB has prepared a Water Quality Control Plan (Basin Plan) that designates the beneficial uses of waters to be protected, along with the water quality objectives necessary to protect those uses.

Agricultural and other land use practices that reduce riparian vegetation raise water temperatures in the Klamath Basin watershed. Temperatures periodically reach levels that are lethal to some fish species. This, combined with elevated nutrient levels, stimulates aquatic plant and algae growth. As water temperatures rise and plants and algae decompose, the level of dissolved oxygen decreases. Dissolved oxygen levels in the Klamath River often fall below California's water quality objective of 7.0 mg/l. As a result of enforcement of the CWA, the establishment of total maximum daily loads (TMDLs) is in progress and will be completed by 2003 for pH, dissolved oxygen, temperature, and probably for pesticides, herbicides and organic growth. Implementation of this TMDL process is likely to result in additional water quality measures on sources identified with these pollutants.

The February 2002 NAS Interim Report did not find scientific support for NMFS' proposed minimum flows below Iron Gate Dam as a means of enhancing the maintenance and recovery of the coho population. However, the NAS Committee noted that progressive depletions of flows in the Klamath River main stem would at some point be detrimental to coho salmon through stranding or predation losses.

Discussion

Although water supply issues were made more acute by the severe drought of 2001, the water resources supply and demand in the Klamath Basin are such that conflicts will persist, because demands are greater than current supplies. Various interests have rights to Klamath Basin water, including farmers, other private interests, several Tribes, and the U.S. Government. Still others are interested in water-related resources of the Basin. While the Department of the Interior, through the Bureau, has contractual obligations to deliver available water to irrigators within the Project area, it also has statutory responsibilities to protect the ecosystems of which several species

may be a part,⁵⁴ and to avoid jeopardizing species listed as threatened or endangered under the ESA.⁵⁵ It may also have trust responsibilities for certain tribal treaty and non-treaty fishing and water rights within both the Upper and Lower Basins. In addition, the hydropower facilities in the area are licensed by FERC; these licenses are due to expire in 2006. These considerations, combined with the additional economic interests in the Lower Basin, make the Klamath situation far more complicated than a “fish vs. farmer” scenario outlined in numerous press reports.

While the water “crisis” in the Klamath Basin is itself a local or regional conflict, the contentions over water use in the Basin reflect broader national issues. First, the immediate situation calls into question the adequacy of Basin-wide planning for droughts that diminish water supplies below levels necessary to sustain both fish/wildlife and irrigation. Second, the competition for water in the Klamath Basin is by no means unique, especially in the arid West where scarce supplies remain static but human populations (and demands) continue to rise. Such competition is increasingly a concern even in more water-abundant areas of heavy population growth where competition among alternative uses of water is becoming more intense. Similar conflicts are brewing in other Basins, including the Columbia and Snake River System in the Northwest; the San Joaquin and Sacramento Basins in California (involving San Francisco Bay/Delta); the Missouri River System in the northern Plains States; and the Florida Everglades. In some areas, existing water needs or allocations actually exceed normal supplies; in which case drought (as in the Klamath Basin), even if transitory, highlights a more fundamental resource allocation problem.

Although the impacts of water shortages and the competition for limited resources are felt primarily at the local and regional levels, the institutions and rules that affect those impacts and mediate those competitions occur at all levels, and often ultimately occur at the federal level. The Klamath situation is a microcosm of similar situations. At the moment of conflict, the water, the land, the farmers, the fishermen, the Tribes, the fish and wildlife, the communities – all seem to be local concerns. But adjudication of water rights involves state and federal determinations; many of the wildlife are migratory, which invokes treaty obligations (as do some of the tribal considerations); endangered species are involved, invoking federal statutory responsibilities; parts of the land are federally owned; many of the private lands are served by long-standing federal reclamation and farm programs; and various citizens from across the Nation may feel they have a stake in outcomes. Thus, competing responsibilities among local, state, regional, and federal roles become inevitable.

⁵⁴ 16 U.S.C. § 1531(b).

⁵⁵ The federal government also has statutory obligations to study potential environmental effects of “major federal actions.” Although the preparation of such environmental studies has not been a part of the current debate, a court recently expressed concern that the Bureau was avoiding the usual process for considering alternatives for managing Basin water (via preparation of an environmental impact statement) by not developing a long-term, Basin-wide operating plan. (*Infra* note 20; Kandra, *supra*, at *35-36.) The Bureau has now released a 10-year plan.

Mediation efforts that began under a court's direction have continued voluntarily.⁵⁶ At the same time, various interests have turned to Congress to address Klamath Basin issues and seem likely to continue to do so. Approaches range from crafting site-specific legislation to compensate for losses resulting from a given policy, to repeal or rewriting of the ESA. Included in this mix are proposals to fund implementation of locally or regionally developed "ecosystem restoration" plans, such as those developed to address water management in the Florida Everglades and the California Bay-Delta. Some believe that it is time to rethink the desirability of the federal policy of using scarce water supplies to sustain traditional crops on arid lands to the detriment of other values that have come to the fore since 1909, and that it is time to attempt a Basin-wide approach to water allocation and use. They contend that the endangerment of species indicates a declining or unhealthy resource base. Others note further that the number of irrigated acres should be reduced to better correspond with the amounts of water likely to be available for that use, and some farmers in the area have offered to sell their lands to accomplish this result. Others, however, strongly object to such ideas and many wish to see the ESA amended or special statutory provisions enacted to ensure that farming is recognized as a priority in the Basin. Congress may consider a variety of responses to the situation in the Klamath Basin; congressional developments to date are discussed below.

Legislative Activity

The 107th Congress has reacted to the controversy in a number of ways. The Senate Energy and Natural Resources Committee held oversight hearings on the operation of the Project on March 21, 2001, just prior to the Bureau's announcement of its 2001 water plan, and the House Resources Committee held field hearings on Klamath Project issues on June 16, 2001. Congress provided \$20 million to eligible farmers in the Basin for water conservation as part of the FY2001 supplemental appropriations bill (§2104; P.L. 107-20). According to the Farm Service Agency (U.S. Department of Agriculture), the money was distributed to farmers directly affected by the Bureau's April 6 announcement as a one-time water conservation payment to those agreeing to undertake water conservation activities in the future. An amendment to the FY2002 Commerce, Justice, State appropriations bill (H.R. 2500) that would have provided \$200 million to farmers to compensate for the "taking" of water was rejected on the House floor on a point of order July 18 (H.Amdt. 178, amendment number 1 as printed in the *Congressional Record*). Nearly \$15.5 million was provided for the Project as part of the FY2002 Energy and Water appropriations bill (H.R. 2311, P.L. 107-66); the Administration had requested nearly \$13 million for FY2002 and is requesting \$14.3 million for FY2003.

A Senate amendment (SA899) to the FY2002 Interior appropriations bill (H.R. 2217), which would have prohibited the use of federal funds to manage water flows to implement both recent Biological Opinions, was rejected on a vote to table the amendment (52-48, Roll Call Vote No. 232, July 12, 2001). The amendment would have disallowed the use of water flows (including those established in April 2001), other than those previously set forth in the FWS 1992 Biological Opinion for the

⁵⁶ 2001 U.S. Dist. LEXIS 6932, *17.

suckers and a 1999 Biological Opinion on Project operations issued by NMFS, until FWS took certain actions identified in the 1993 recovery plan for the Lost River and shortnose suckers. Senator Gordon Smith (OR) asserted, in putting forward the amendment, that none of the recovery plan measures had been carried out and that Upper Klamath Lake levels ought not to be changed until they are, since their completion might make additional water available.⁵⁷

In November 2001, the House passed H.R. 2828, a bill to refund and waive Bureau operation and maintenance charges to certain Klamath Project water users. The bill has been referred to the Senate Energy and Natural Resources Committee; however, there has been no action to date on the bill in the Senate. A separate bill (H.R. 2389) has been introduced to compensate individuals in the Klamath area for their economic losses due to the Bureau's decision. The bill was referred to the House Judiciary Committee, but to date there has been no action on the bill. Additionally, a provision directing the Secretary of Agriculture to establish a Klamath Basin Interagency Task Force (§262) was included in the Senate-passed version of the farm bill (H.R. 2646). The language would have directed \$175 million of Commodity Credit Corporation funds to be used for a variety of Task Force related activities. However, this language was stricken in conference. Subsequently, conferees provided \$50 million in mandatory spending for water conservation activities in the Klamath Basin (Subtitle D, §2301 of P.L. 107-171, amending Title XII of the Food Security Act of 1985, §1240I(c)(2)). Finally, the House Resources Committee held an oversight hearing on March 13, 2002, to discuss findings of the NAS Interim Report on threatened and endangered Klamath Basin fish. The final NAS report is due in March 2003.

Debate over how and if area farmers and others dependent on the agricultural economy of the area ought to be compensated is likely to continue. Some have called for a re-examination of water uses in the Basin, including the possibility of retiring farm lands from production. As discussed previously, the status of water rights throughout the Basin is the subject of an ongoing water rights adjudication process at the state level.

During hearings and floor debate on the issues surrounding the situation in the Klamath Basin, several policy and oversight questions have emerged. These include:

- to what extent is this situation the result of over-commitment of scarce water, or of an unanticipated severe drought?
- were other reasonable and prudent alternatives available?
- could this situation have been avoided if actions laid out in earlier Biological Opinions and plans had been fully implemented?
- is compensation to farmers and others in the Basin suffering economic losses appropriate? and

⁵⁷ Cong. Rec., Vol. 147, S7555 (July 12, 2001).

- are other Basin-wide measures appropriate or desirable?

For more information on legislative developments on the Klamath Basin and related issues, see CRS Issue Brief IB10019, *Western Water Resource Issues*. For more information on legislative issues concerning the ESA, see CRS Issue Brief IB10072, *Endangered Species: Difficult Choices*.