

# Managing Multiple Species in the Klamath



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Perhaps nowhere in the country has the federal Endangered Species Act (ESA) been more at the forefront of water management issues than in the Klamath River Basin, which crosses the Oregon-California border. The Klamath River flows some 250 miles from Upper Klamath Lake in southern Oregon through agricultural diversions of the Klamath Project, over several hydropower-generating dams, and finally through northern California to the Pacific Ocean. Endangered sucker fish and important bird populations live in lakes and streams in the upper basin, above Iron Gate Dam (see map). Anadromous fish—those that spawn in freshwater and live their lives in saltwater—populate the lower basin. The ESA is administered jointly by the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS). FWS oversees the terrestrial and nonanadromous aquatic species, while NMFS watches out for the salmon and other anadromous fish in the lower basin.

## 100 Years of History

**Development:** For centuries, Indian tribes fished the length of the Klamath River. In the late 1800s, farmers moved into the upper reaches, reclaiming fertile wetlands for agriculture. In 1905, the newly formed Reclamation Service (later the Bureau of Reclamation) initiated construction of the Klamath Project, a set of dams and diversions designed to promote farming and settlement in the upper basin by providing a dependable water supply. During the 1920s, hydroelectric power facilities began to be constructed, culminating with PacifiCorp's seven-dam project in operation today.

**Fish and Wildlife:** The Klamath Basin historically contained about 185,000 acres of shallow lakes and wetlands that seasonally supported over 6 million

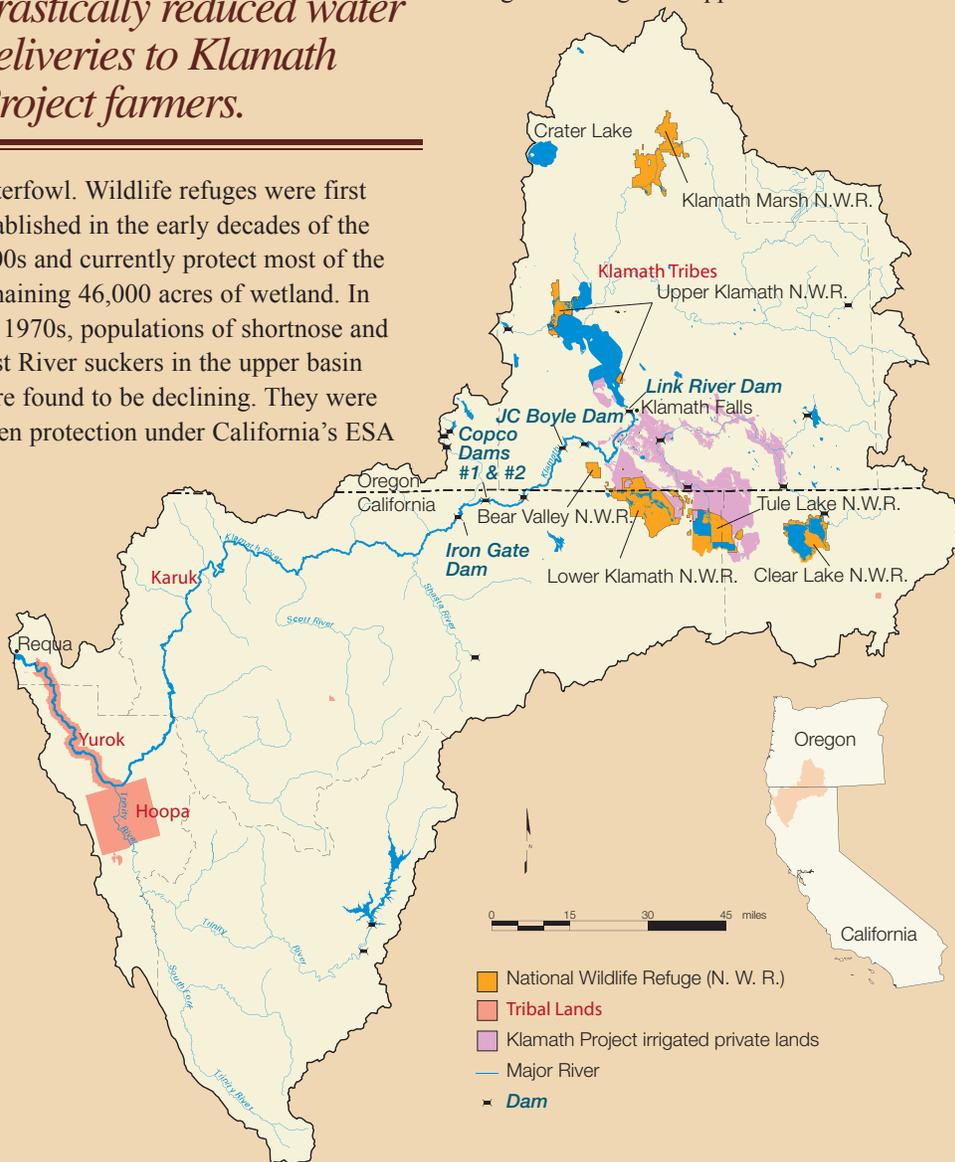
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waterfowl. Wildlife refuges were first established in the early decades of the 1900s and currently protect most of the remaining 46,000 acres of wetland. In the 1970s, populations of shortnose and Lost River suckers in the upper basin were found to be declining. They were given protection under California's ESA

in 1974 and listed as endangered under the federal ESA in 1988. In 1997, coho salmon were listed as threatened under the federal ESA. A number of other fish, birds, amphibians, reptiles, invertebrates, and plants in the Klamath River basin have also been listed under the ESA. The Klamath basin is on the Pacific Flyway, and millions of waterfowl live on or migrate through the upper basin lakes.



## Stuck Between Laws

The California Department of Water Resources (DWR) is in a bind when it comes to managing the Scott River, a tributary to the Klamath. The court completed adjudication of the river in 1980 but did not specify any flow for fisheries or instream use. As watermaster of the state, DWR implements the court adjudication order. But with river flows decreasing, the agency risks drying up the river

if it allows full adjudications to be taken—causing violations of the federal and California ESA. If it keeps water in the river for the fish, the agency could be in contempt of court for violating the adjudications. What to do? DWR is working with the California Department of Fish and Game (DFG) to identify locations where fish are most likely to be stranded and asking diverters to voluntarily keep some water in the

river. Meanwhile, DFG is developing incidental take permits for the affected water rights holders of the Scott and Shasta rivers that would allow some fish deaths, provided mitigation plans are in place to improve habitat elsewhere. Even with such permits, the watermaster may be out of compliance unless the court provides a variance.

**Law:** In 1957, the Klamath River Compact was signed, allocating water between Oregon and California and setting the following order of priority for Klamath water: domestic, irrigation, recreation (including fish and wildlife), industrial, hydropower production, and other uses for those water rights established after 1957. But in 1995 and 1997, congressional legislation changed the priority order to: ESA requirements, tribal rights, agriculture, and refuges. This had significant consequences: endangered species now had the highest priority and refuges had the lowest even though they harbored some federally listed species.

**Drought:** In the early 1990s, drought prompted the first reductions in deliveries to farmers so that lake levels in the upper basin could be maintained for fish.

### ***It All Comes Together... or Falls Apart***

In 2001, the Klamath made national news when Reclamation drastically reduced water deliveries to Klamath Project farmers, following biological opinions by FWS and NMFS that called for higher flows to be maintained in both the upper and lower basins. Later that year, a published report (Hardy and Addley, 2001) found no strong connection between river volume and fish health. This finding was upheld by a National Research Council panel review.

In 2002, Reclamation tried to operate its system to provide water to both farmers and the fish downstream. But in September 2002 one of the nation's worst fish kills affected at least 34,000 (possibly as many

as 80,000) adult salmonids (primarily the nonthreatened chinook) in the lower 40 miles of the Klamath River and its tributary, the Trinity. The fish kill was attributed to a pathogen that thrived in the unusually warm water, but an above-average run of salmon combined with atypically low river volumes likely contributed to stressful conditions for the fish. Last summer, congressional testimony absolved Klamath Project operations from having significantly contributed to the fish kill.

The fish kill attracted the attention of the governors and state water quality regulators of Oregon and California, who convened a task force to help identify triggers to prevent another such event from happening again.

### ***Hydropower Also a Factor***

Also in the early 2000s, PacifiCorp's Federal Energy Regulatory Commission (FERC) hydropower license was due to be

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renewed. In preparation for the renewal application, the company began talking to stakeholders in hopes of developing an operating plan agreed upon by all parties, which could be presented to FERC. In 2004 the parties studying the fish kill, PacifiCorp, and others formed the Klamath River Settlement Committee, representing 26 different stakeholder groups, including farmers/ranchers; tribes; federal, state, and county agencies; and conservation and fishing groups. After about a year, PacifiCorp withdrew from the committee as discussions shifted increasingly toward requiring removal of four of its dams.

The settlement group continued to meet. On Jan. 15, 2008, four tribes, the Klamath Water Users' Association, the Pacific Coast Federation of Fishermen's Associations, Trout Unlimited, and American Rivers jointly issued a press release announcing that "after over two years of negotiation among 26 diverse stakeholder groups," an agreement had been reached to "settle many of the key issues that have for years divided the Klamath Basin's diverse communities." However, the agreement hinged on the four dams coming down—which PacifiCorp had not agreed to (see sidebar). News reports since Jan. 15 indicate that agreement even among the settlement group is not, in fact, total, and widespread signing of the agreement is not imminent.

On May 1, 2008, NMFS banned commercial and sport fishing for Chinook salmon from California to northern Oregon for one year—for the first time ever—due to extremely low numbers of the fish, estimated at fewer than 60,000 adults in the Sacramento River.

### **More Complications**

Several additional factors bear on this complex situation:

- If the dams are taken down, decades of accumulated sediment could be released, severely impacting the ecosystem of the lower reaches. Some estimate it would take 100 years for the system to recover—what would happen to the fish in the meantime?
- Managing the upper basin to benefit the

## **PacifiCorp Acts**

Although PacifiCorp did not participate in the Klamath Settlement Agreement, it continued negotiations with Oregon Wild, a conservation group that also was not involved in the agreement. Last year, Oregon Wild threatened to sue PacifiCorp for violating ESA by harming too many fish through its hydropower operations, but instead of proceeding with litigation, the two parties agreed to talk. In April they announced a settlement whereby PacifiCorp will shut down power production at the Link River Dam (the farthest upstream dam) during periods in the summer and fall when endangered fish migrate to the southern part of Upper Klamath Lake. In addition, PacifiCorp will donate 22 percent of the proceeds generated from dam operations throughout the

year to support enhancement projects for endangered fish, particularly wetlands restoration.

PacifiCorp's position with respect to removal of the four dams is that its "customers should not be expected to pay an enormous price for implementing public policy and covering the complex needs of numerous stakeholder interest groups in the Klamath Basin." The power company does not consider the issue to be a simple tradeoff between the cost of dam removal and the cost of building fish ladders. The company claims that environmental evaluation must include the tradeoff of replacing hydroelectric power with fossil fuel and the consequences of a large release of sediment if the dams are removed.

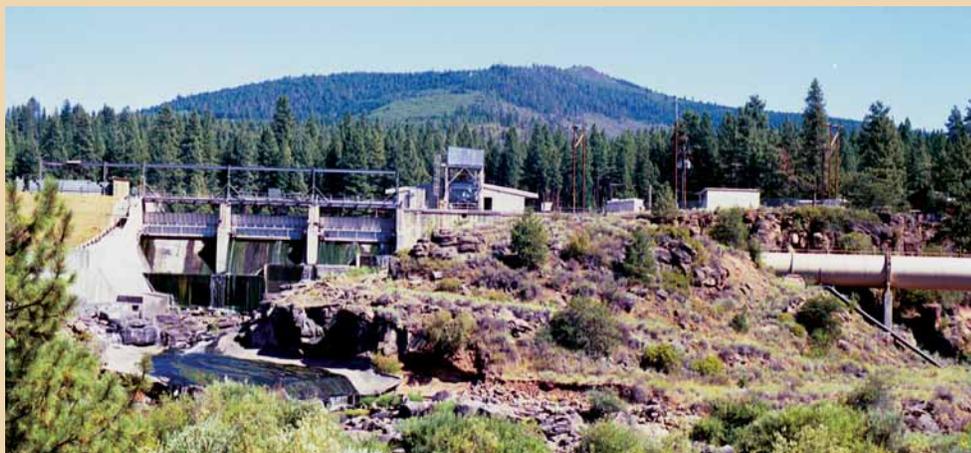


Photo: PacifiCorp

*The J.C. Boyles Dam is one of the hydropower dams on the Klamath River operated by PacifiCorp.*

suckers and refuge habitats could mean holding more water in wide, shallow reservoirs and wetlands where it will warm up; even if sufficient quantities were released downstream for the salmon, they need cold, clear water.

- Only about half of all irrigators in the upper basin are associated with the Klamath Project, yet they are the only ones who must give up water for the species. Until Oregon completes adjudication of the river, withdrawals by other users remain unaccounted for.

Meeting all water needs in the Klamath Basin will require finding additional sources of water or making significant management changes. Solutions under consideration include assigning water to a

water bank during the winter, using more groundwater, and developing conjunctive-use approaches. Basin-scale modeling with support from the stakeholders is needed to evaluate operating scenarios that take all the demands into account. Although challenging, a solution is not impossible.

*Dwight Russell is the former District Chief of the Northern District, California Department of Resources. His contributions to this article are his own and do not reflect the opinions or policies of California DWR.*

### **Reference.....**

Hardy, T.B., and R.C. Addley, 2001. *Evaluation of interim streamflow needs in the Klamath River, Phase II – Volume 1, Final Report. Prepared for U.S. Department of the Interior, Institute for Natural Systems Engineering, Utah Water Research Laboratory, Utah State University, Logan, UT. 148 pages.*