



# BRING THE SALMON HOME

## *The Karuk Tribe's effort to remove Klamath Dams*

### **Introduction**

Fed by snowmelt from the Cascade Mountains, the Klamath River begins as a series of wetlands, marshes, and lakes in the high mountain desert of Southeastern Oregon. Often called the “Everglades of the West”, this area once hosted an incredible diversity of wildlife, from the millions of migratory fowl that winter in the marshes to unique species of fish that inhabit the lakes and river. With up to 1.1 million adult fish spawning annually, including chinook, coho, pinks and chum salmon as well as abundant steelhead, the Klamath was once the third most productive salmon river in America.

For thousands of years Native People, including the Klamath, Karuk, Hoopa and Yurok Tribes, sustained themselves on the bounty of the river. As white settlers came to the area, a sustainable commercial fishery developed.

Today all of this has changed. Currently, Klamath River fall chinook runs are less than 8 percent of their historical abundance. For coho salmon the numbers are less than 1 percent. Chum and pink salmon, once abundant in the Klamath, are extinct. Coho salmon are listed as a threatened species, the Lost River Sucker, and the Short Nosed Sucker are listed as Endangered Species. Spring chinook, once the largest run of salmon, are on the brink of extinction.

Many factors can be blamed for the Klamath's decline, but none are greater than the dams which stand between salmon and their home spawning grounds in the Upper Basin.

### **Dams**

When the Copco 1 Dam was constructed on the Klamath River in 1918, it permanently blocked access to more than 350 miles of salmon and steelhead habitat in the main stem of the upper Klamath and its tributaries. Another dam, Copco 2, was constructed just a quarter-mile downstream of the original facility in 1925.

The aptly named 173-foot-high Iron Gate Dam was constructed in 1962 to re-regulate the wildly varying flows from the upstream Copco dams and run a 20 megawatt power plant. With the construction of Iron Gate, an additional seven miles of spawning habitat in the main stem as well as important tributaries such as Jenny Creek were blocked.



**J.C. Boyle Dam diverts the majority of the river's flow through a mile of flume (photo courtesy of Steve Pedery)**

Today, all anadromous runs of salmon and steelhead, once abundant in the upper basin, are extinct above Iron Gate Dam. This means over 350 miles of historic salmon habitat is unreachable by fish and much of it buried beneath reservoirs.

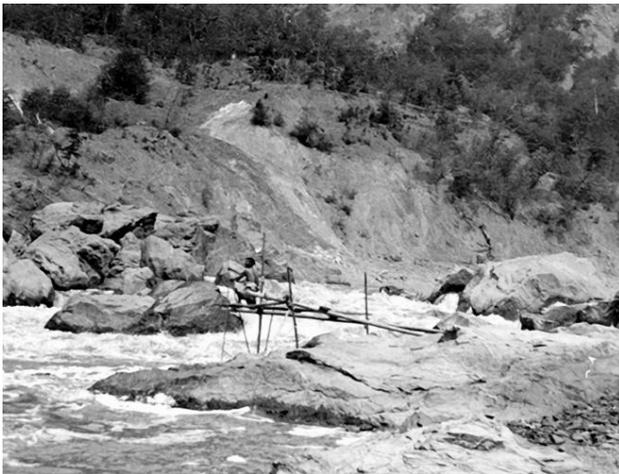
In all, there are six dams on the main stem of the Klamath River: Iron Gate, Copco I and Copco II, J.C. Boyle, Keno, and Link River. Since Keno and Link effectively replace natural reefs that were destroyed and they serve the need of re-regulating erratic flows for the upstream irrigation project, the Karuk Tribe and its allies seek the removal of the lower four dams. However, Keno and Link must be fitted with functional fish ladders.

## The Impact on Klamath Basin Tribes

Often discounted by the Bureau of Reclamation are the water and fishing rights of the Basin's Native People. Originally the Upper Klamath Lake supported a Tribal subsistence fishery of more than 50 tons per year as well as a booming recreational fishery and at least one cannery.

The Klamath Tribes, located above all six dams in the Chiloquin, Oregon area have been denied access to salmon and steelhead for over 87 years.

For down river tribes, the dams have contributed to the near extirpation of spring salmon, and a dramatic decline



Karuk fishermen at the turn of the century (Tribal archives)

in salmon and steelhead numbers overall. This robs the Karuk, Klamath, Hoopa, and Yurok Tribes of an important economic resource. More importantly, the dams deny the Tribes' of a vital cultural resource and subsistence fishery.

In 2004, the Karuk harvested less than 100 salmon from their last remaining dip net site, Ishi Pishi falls.

## The Disaster of 2002

In the fall of 2002 we saw the region's worst single ecological disaster when over 68,000 fish died in a matter of days. This represents the largest fish kill in US history. The fish kill was caused by an infection that spread rapidly in the shallow, warm waters of the Klamath- a situation created by a combination of low flows from the Upper Klamath Irrigation Project and water quality degradation by the dams.

## Opportunities Afforded by Hydrorelicensing

In February, 2004 PacifiCorp filed a license application for the operation of Iron Gate, Copco 1, Copco 2, J.C. Boyle, and Keno dams. The current license expires in 2007. Despite years of meetings with Tribes, environmentalists, and fishermen, PacifiCorp ignored all calls for fish passage in their final license application.

When the Federal Energy Regulatory Commission (FERC) issues a new license, it will last for 50 years. Thus relicensing provides a once-in-a-lifetime opportunity to address restoration via dam removal.



Photo taken during 2002 fish kill (courtesy of Tim McKay)

Federal agencies such as Fish and Wildlife Service and National Marine Fisheries Service (NMFS) have demanded that a new license provide salmon access to the Upper Basin. NMFS has recommended dam removal as the best way of doing this. The California State Water Resources Control Board has mandatory conditioning authority in regards to water quality. This means the state of California can demand protection of the Klamath's "beneficial uses" in the license. This includes water quality, recreation, and fish habitat. Therefore Gov. Schwarzenegger has the power to require a feasible strategy to return salmon to the upper Klamath Basin. The state's demands could include a combination of functional ladders and dam removal to achieve these goals.

## Dams are Dangerous for Fish and People

Dams deny salmon access to habitat and degrade water quality by heating the river and hosting algae blooms. These algae blooms are dangerous for people too.

Last summer, in an effort to better understand and describe the water quality problems the dams create, Karuk Water Quality staff began sampling the reservoirs to learn more about the blue-green algal blooms that occur each summer. What we found could lead to the closure of the reservoirs this summer.

Blue-green algae, or cyanobacteria, come in many varieties-some benign, some toxic. What the Tribe discovered is called *Microcystis aeruginosa*, which secretes a potent a liver toxin and proven tumor promoter called microcystin.

Although the United States EPA does not have guidelines for acceptable levels of microcystin, the World Health Organization (WHO) does. According to

the WHO, algal levels of 100,000 cells/milliliter of water represent a moderate health risk for recreational users. The Tribe found sample sites with over 100 million cells/ml-1000x times greater than the WHO moderate risk levels!



Karuk water quality team takes samples of toxic algae at Iron Gate Reservoir

The symptoms of microcystin poisoning include: skin rash, eye irritation, nausea, vomiting, diarrhea, mouth ulcers, liver damage, kidney damage, and in extreme cases, liver failure and death.

Studies suggest that the toxin can accumulate in the flesh of fish; however the Tribe has not determined whether or not the toxin is present in Klamath salmon.

### **Dam Removal is Necessary to Restore Spring Salmon**

Spring chinook were once the largest salmon run in the Klamath and many other rivers in the Pacific Northwest. Spring chinook, or springers, migrate up river in the spring when the river is flush with cold water from melting snow pack. Since springers will not actually spawn until the following fall, they must find areas suitable to live out the summer. These areas, called cold water refugia, are typically at the headwaters of the river and its tributaries. Historically, springers used cold water refugia upstream from Upper Klamath Lake such as the Williamson, Sprague, and Wood Rivers.

Dams prevent springers from reaching these areas and have thus caused a dramatic decline in their numbers. One of the last refuges for Klamath spring chinook is the Salmon river. In 2005, only 90 of these fish were found during annual fish counts- the fewest ever.

The Karuk Tribe believes that restoring spring chinook is the key to a sustainable and harvestable salmon fishery on the Klamath River.

Currently federal agencies consider spring and fall chinook to be the same species, however, that could

change if the genetic differences between the two were better described. If spring chinook were considered to be unique from fall chinook, they would undoubtedly be candidates for ESA listing.

### **Dam Removal is good for the Economy**

For river communities such as Happy Camp, fish have served as the cornerstone of the economy for thousands of years. Once considered the 'steelhead capital of the



Salmon is the cornerstone of a healthy traditional diet

world,' Happy Camp played host to anglers from around the globe. Today, the fishery and tourism is in decline. Dam removal is a key step in restoring the fishery and the fisheries based economy.

Dam removal will require an investment of \$200 - \$500 million – most of it in Siskiyou County. Given the scale of this deconstruction project, many jobs would be created. In the long term, the enhanced fishery would again draw tourists to our communities and improved water quality would add to property values.

### **Myths told by dam supporters:**

*Myth:* The dams improve water quality

*Fact:* Dams degrade water quality by allow otherwise cold water to warm as it sits behind the dam, stagnant beneath the sun. The Klamath water is unusually loaded with nutrients from fertilizers used upstream. This allows water in the reservoirs to host massive algal blooms that create a host of water quality problems downstream

**Myth:** We are desperate for the electricity the Klamath dams produce

**Fact:** The Klamath dams produce a relatively small amount of energy, 147 mega-watts. According to the California Energy Commission's 2002 *California Hydroelectricity Outlook Report*: "Because of the small capacity of the Klamath hydro units...removal of these units will not have a significant reliability impact on a larger regional scale."

**Myth:** These dams are needed by agriculture

**Fact:** None of the dams targeted for removal are used to create irrigation diversions

**Myth:** The dams are needed for flood control

**Fact:** The dams were not designed for nor are they effectively used for flood control. In fact, the most devastating flood the area has seen since contact was in 1964, two years after the construction of Iron Gate dam.

### **Who owns the Dams?**

The dams are owned and operated by PacifiCorp. PacifiCorp is a division of Portland based Pacific Power which is a wholly owned subsidiary of Mid American Energy Holdings Co. of Des Moines Iowa. In turn, Mid American is owned by billionaire investor Warren Buffet of Omaha, Nebraska.

### **What you can do to help:**

Keep pace with the latest news and action alerts which can be found at: [www.karuk.us](http://www.karuk.us). Just click on our campaign link.

Write or call your elected officials and let them know that you want to see the Klamath salmon return home.

**It is important ecologically.** The Klamath is one of the most ecologically diverse regions in America. The Klamath once hosted 1.1 million spawning fish. In 2006 the expected number of wild spawners is expected to be less than 25,000.

**It is important economically.** Again this year commercial fishery closures will cost the California economy over \$150 million. With construction of the Klamath dams, the economic base for CA north coast communities is slowly being destroyed. Dam removal coupled with other restoration strategies could rebuild it.

**It is the moral thing to do.** Klamath Basin tribes are suffering from the loss of fish. The Karuk, Hoopa, Yurok, Klamath Tribes and others lived along the river for thousands of years and thrived. Loss of the fishery intimately affects the Tribes' cultures and robs Tribes of the basis for a modern economy.

Send your letter to:

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