

[← Back to Original Article](#)

Scientists find holes in Klamath River dam removal plan

\$1.4-billion project — dismantling four hydroelectric dams to restore Chinook salmon runs in the upper Klamath River — amounts to an experiment with no guarantee of success, independent report says.

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A \$1.4-billion project to remove four hydroelectric dams and restore habitat to return Chinook salmon to the upper reaches of the Klamath River amounts to an experiment with no guarantee of success, an independent science review has concluded.

A panel of experts evaluating the proposal expressed "strong reservations" that the effort could overcome the many environmental pressures that have driven the dramatic decline of what was one of the richest salmon rivers in the nation.

Even after the decommission of dams that have for decades blocked migrating salmon, the panel said, biologists would probably have to truck the fish around a stretch of the river plagued by low oxygen levels.

"I think there's no way in hell they're going to solve" the basin's water-quality problems, said Wim Kimmerer, an environmental research professor at San Francisco State, one of six experts who reviewed the plan. "It doesn't seem to me like they've thought about the big picture very much."

Over the last century, the Klamath's waters have been diverted for irrigation, polluted by runoff and dammed for hydropower. The number of fall-run Chinook that swim up the river and its tributaries to spawn has in some years amounted to fewer than 20,000, compared to historic populations of half a million.

The plummeting levels of native fish have pitted farmers against environmentalists and tribes whose traditional cultures and diets revolved around salmon fishing.

Many of the warring parties last year signed two agreements intended to bring peace to the river, which winds from southern Oregon through the Cascade and Coast ranges to California's Pacific Coast.

One of the pacts calls for the removal, starting in 2020, of four hydropower dams operated by PacifiCorp, a subsidiary of billionaire Warren Buffett's Berkshire Hathaway empire. The other includes fishery restoration programs as well as promises of a certain level of water deliveries to Klamath basin farmers and two wildlife refuges that are important stopovers for migrating birds.

The dam removal must still be approved by Congress and the U.S. secretary of the Interior, who will rely on reviews by the independent panel, federal agencies and others to determine if the decommissioning is in the public interest.

The scientists' June 13 report describes the proposals as a "major step forward" that could boost the salmon population by about 10% in parts of the upper basin. But to achieve that, the panel cautions, the project must tackle vexing problems, including poor water quality and fish disease.

The report concluded that the agreement doesn't adequately address those issues. Under the proposal, vegetation in restored wetlands and stream banks would be expected to absorb the phosphorus from natural and agricultural sources that promotes harmful algal blooms. But such a method, Kimmerer said, would require converting an area roughly equivalent to 40% of the irrigated farmland in the Upper Klamath Lake watershed to wetlands.

"This does not seem like a feasible level of effort," the report notes.

Dennis Lynch, who is overseeing a team of federal scientists gathering information on the effects of dam removal, said his group agrees that major water-quality problems will take decades to fix. But the federal scientists are more optimistic that they can be resolved.

"I think they were pretty conservative in their analysis," Lynch said of the panel's report. There are other options for controlling nutrients, he added, such as using chemicals to bind phosphorus to lake bed sediments or mechanically scooping up algae. And new federal and state pollution standards are expected to reduce runoff contamination in coming decades.

"All of us involved in this would agree more needs to be done," said Steve Rothert of American Rivers, one of the groups that signed the pact. But "by removing the dams, we're removing the biggest obstacle to upstream migration and productivity."

The agreements have strong critics, including the Hoopa Valley tribe, which refused to sign. "The agricultural practices that led to salmon being threatened in the system are the agricultural practices that will be continued," argued Thomas Schlosser, a Seattle attorney who represents the tribe. He cited provisions that call for the continued leasing of wildlife refuge lands for farming and substantial water diversions for irrigation.

The agreements require nearly \$1 billion in federal funding for water management, habitat restoration and monitoring efforts. PacifiCorp customers in Oregon and California are expected to pay \$200 million more to dismantle the dams, and if necessary the state of California would provide as much as \$250 million in bond money.

"If federal taxpayers are going to be asked to spend this kind of money, it better be for a program that works," said Steve Pedery of Oregon Wild, which favors taking a significant amount of cropland out of production to reduce water demand.

Schlosser said he doubts Congress will approve the legislation, which proponents expect to be introduced this summer. But he predicted that the utility will

eventually remove the dams anyway because demolition is cheaper than building the fish passages required to renew federal licenses.

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