All we do now to save salmon could mean nothing

Fish that spawn in the south and in the summer will die first as the world warms. Idaho's high-elevation runs may offer one of the best chances the species has.

By Rocky Barker, Idaho Statesman

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Shawn Raecke / Idaho Statesman
Idaho Department of Fish and Game biologist Mike Peterson holds a male sockeye salmon for the camera crews before releasing him into Redfish Lake near Stanley Tuesday morning, 900 miles from the Pacific. The event including State, Federal and local officials including Governor Butch Otter were all on hand to release 56 sockeye salmon into the lake.

The Pacific Northwest has spent two decades retooling dams, rebuilding damaged watersheds and restoring stream flows to keep salmon from disappearing.

The United States has invested billions in the effort - $350 million in 2004 alone - by far the most money spent on any endangered species.

But a new threat is more devastating than the gill nets that sent dozens of salmon runs into extinction. It is more deadly than the hydroelectric turbines that still kill millions of migrating smolts. In fact, it raises doubts about whether salmon will survive in the Northern Pacific at all.

Climate change already has made rivers warmer and spring runoff earlier, disrupting the life cycle of the fish that are an icon of the region.

No matter what actions the world takes to reduce greenhouse gases, river temperatures in more than half of the lower-elevation watersheds may exceed 70 degrees by 2040 - too hot for salmon.

"The only salmon that are going to survive the century mark are the ones in the large populations in the higher elevations that are still going to have snow and cold water," said Jim Martin, a former chief of fisheries for the state of Oregon.

But even these runs and those as far north as Alaska would be threatened if the world does not reduce gases like carbon dioxide over the next 50 years.

This means the hydroelectric dams that provide more than half of the electricity in the region - without emitting carbon dioxide - are more valuable than ever.

That presents an ethical challenge to the environmentalists, Indian tribes and commercial and sport fishermen who have fought for years to reduce the impacts of dams on the fish. The dams are no longer just economic drivers in the region. They could be - at least for the short term - critical tools for reversing the most dramatic environmental peril of our time.

The dilemma is another for environmentalists who are slowly recognizing that they will have to reconcile their decades-old efforts to "save all the parts" of the environment with the increasingly urgent need they see to stop or reverse climate change.

Environmentalists can't simply try to stop what they consider harmful activities, said Pat Ford, executive director of Save our Wild Salmon. They need to offer solutions.

"If you are not working both, you are setting up a blind spot you cannot sustain," he said.

"We are no longer in the time when these are economic versus environmental arguments," said Steve Wright, administrator of the Bonneville Power Administration, which markets the power from the dams and uses some of the proceeds to pay for fish recovery. "Increasingly these are environmental versus environmental arguments."

Scientists expect climate change to force an ecological bottleneck. Even in a best-case scenario, a period of maximum impacts from climate change will affect living conditions for all species - including humans - before human efforts can reverse climate change.

That means making painful choices about priorities - choices being faced by environmentalists worldwide.

"I think global warming demands leadership from conservationists in a way we haven't consistently done yet," Ford said.

ARE WE WASTING MONEY ON SOME FISH?

Idaho's Snake River sockeye were listed under the Endangered Species Act in 1991, requiring that the federal government take no action that will jeopardize the existence of the species. That has driven the management of the dams, farming, logging and residential development in salmon-spawning habitat across a Columbia watershed about the size of France.

In many ways, this has focused the attention on the weakest salmon runs - often in the most degraded habitat with the most dams blocking migration.

Now the threat of climate change has brought another approach to the forefront: preserving the strongholds of salmon populations not just here but across the Pacific.

Some scientists say salmon in places like Kamchatka in Russia's Far East, Bristol Bay in Alaska and many Northwest watersheds are the most healthy and genetically fit and have the best chance of surviving growing population pressures and climate change.

Guido Rahr, president of the Wild Salmon Center in Portland, said protecting these strongholds is the most cost-effective way to make sure salmon survive.

"Look at salmon populations as a stock portfolio," Rahr said. "Most of our stocks are the most expensive and the highest risk."

He is careful politically to say protecting strongholds and recovering all endangered salmon shouldn't be an either/or proposition. But the growing realities of climate change may force society to make those choices down the road.

"If our goal is to have healthy salmon runs on some part of the Pacific Northwest in 50 to 100 years, we have to do something different," Rahr said. "The Endangered Species Act is not enough."

SAVING SPECIES FOR THE FUTURE, NOT TODAY

Imagine the Pacific Northwest of 2109, where the salmon of the future will have to survive:

Portland and Seattle have quadrupled in size.

Temperatures have risen and the Northwest's climate resembles that of San Francisco and Sacramento today. Despite the world's efforts to stem global warming, temperatures have increased enough that many rivers once red with fish are now uninhabitable for salmon.

California runs - troubled enough in 2009 that coastal fishing was called off for the second year in a row - have become only a memory. In fact, many of the stocks we are spending the most money on today may be extinct no matter what we do.

"Those populations whose life cycles put them in the river in the summertime either for their spawning migration or juvenile rearing are likely to see the biggest negative impacts from climate change," said Nate Mantua, University of Washington assistant professor of atmospheric sciences and a researcher focused on the impacts of climate change on the Pacific and its ecosystems. "From southern British Columbia down to California, many of the southern stocks are already seriously compromised."

Salmon in and among the Northwest's cities will face vastly different hurdles than they do today, said Martin, the former Oregon fisheries chief.

"Right now we're trying to save salmon in these little suburbia streams on the edge of the city," he said. "But in the longer term, we understand the population development and climate change are going to overwhelm the salmon in those streams."

The federal salmon recovery plan now before U.S. District Judge James Redden emphasizes an ambitious program of habitat restoration, hatchery improvements and dam modifications instead of removing the four dams.

BPA cut a deal in 2008 with all Northwest Indian tribes except the Nez Perce that increases spending on salmon by another billion dollars over the next decade. Most of the money would go to expensive habitat restoration programs in low-elevation watersheds long altered by human activities. Another big chunk of money goes to hatcheries to meet harvest demands and treaty rights or to augment severely depressed wild stocks.

"What we have now is a strategy that emphasizes the number of salmon that survive the decade," Martin said. "This strategy will actually reduce the number of salmon that will survive the century."

POWER CONSERVATION COULD BE KEY

So far, Ford and other fish advocates aren't ready to give up on any salmon stocks. Preventing society from making "Noah's choice" - deciding which species survive - is one of their core values.

Instead, they seek to keep open as many options as possible, such as the nearly $30 million captive breeding program that seeks to preserve Redfish Lake's sockeye and their genetic fitness that scientists see as so precious.

And still, their first priority - even for protecting the salmon they hope will survive a climate change bottleneck - is the same as always: Remove four dams on the Snake River in Washington that present major barriers to the salmon of Idaho and eastern Washington.

Idaho shares some key attributes with the salmon strongholds of Alaska's Bristol Bay and Russia's Kamchatka: pristine undeveloped habitat and diverse and potentially productive genetically fit stocks of salmon, said Jack Williams, a fisheries biologist with Trout Unlimited.

The region once accounted for 50 percent of the 8 million to 16 million salmon that historically spawned in the Columbia Basin.

Williams and many other fisheries biologists believe that potential can be tapped again, if we can remove four of the eight dams standing between the Pacific and more than 22 million acres of wild and roadless high-elevation watersheds in central Idaho and eastern Oregon.

If the dams were removed, they believe that among all the southern runs, these salmon and steelhead have the best chance to survive climate change.

But the four dams generate about 1,000 megawatts of electricity a year - close to what Idahoans use now - without spouting the nearly 4 million tons of greenhouse gases that coal plants would produce to make that power.

With the right plan, the Pacific Northwest doesn't need to make this choice, said Sara Patton, executive director of the Northwest Energy Coalition, which promotes energy efficiency and low costs for consumers.

A coalition study shows that energy-efficiency programs - along with wind, solar, geothermal and biomass generation plants - can boost power generation by 6,500 megawatts by 2020, enough new electricity to power 845,000 of today's homes for less than a penny a kilowatt.

It would also be enough to meet the electric demand as the region's population doubles, while retiring 1,000 megawatts of coal-produced power and removing the four dams.

Patton said the trade-off to keep prices down was to plan for coal plants - many of which serve Idaho Power customers - to generate power through the life of the plants instead of shutting them down immediately. When they do close, it will reduce 80 percent of the region's greenhouse gases, the coalition predicts.

And even as the price of energy rises, customers' light bills will drop because they will individually use less power.

Wright, the BPA administrator, doesn't support removing the four dams, but he agrees that much of the region's demand could be met through energy-efficiency - though he is doubtful it can be done so cheaply.

He thinks it is too soon to talk about triage.

"It's way too early to say we understand how microclimates will change, to be able to write off species," Wright said.

Save Our Wild Salmon's Ford agrees. He figures Martin is right, but he acknowledges how little is known about how climate change will affect the Columbia Basin.

He wants to give salmon and the interconnected ecosystems on which they depend every chance he can. Ultimately their future - and ours - depends on the ability to adapt.

"Salmon are going to bring themselves through global warming," Ford said. "We aren't."

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