

Time to breach?

Diminishing fish returns on the Snake-Columbia river systems are sparking renewed calls for taking out the dams

· By ERIC BARKER of the Tribune October 22, 2017

More than a decade ago, the looming effects of climate change convinced one of the most respected salmon biologists in the Pacific Northwest to change his position on dam breaching.

Don Chapman, who had taught many of the fisheries biologists in the region as a professor at the University of Idaho, ruffled fins when he took a job consulting for the hydropower industry and staunchly backed keeping the lower Snake River dams.

It was a position in contrast with the beliefs of many of his former students, who endorsed breaching Ice Harbor, Lower Monumental, Little Goose and Lower Granite dams as the best thing that could be done to save endangered sockeye and threatened spring and summer chinook and steelhead.

Chapman later changed his stance, saying that a warming climate with the dams in place was one obstacle too many for the fish to overcome. That was 2005, and nothing that has happened in the intervening dozen years has eroded the strength of his argument.

"It's the biggest threat they are facing, it's what I call the fifth horseman of the apocalypse and it's coming galloping at us," he said recently in a telephone interview from his home in McCall.

Dam breaching on the table

The northern Pacific Ocean, which naturally flips between conditions that are alternately good and bad for salmon, is in the midst of a bad spell, and salmon and steelhead runs are in decline. The bountiful returns of hatchery fish of the recent past and modest gains made by protected wild fish have been replaced with returns that led to truncated fishing seasons, a decline in wild fish abundance and renewed calls for dam breaching.

Scientists say climate change, by altering weather patterns, has made the bad cycles worse and the good times less so. To wit: the infamous "blob," a mysterious mass of warm water off the coast of the Pacific Northwest that started to form in 2013 and

gained full strength in 2015, before fading last year. It hammered juvenile salmon and steelhead, robbing them of critical food sources and making the ocean more habitable to warm-water predators from the south.

Just as the blob was hitting its most damaging phase, an unusually dry and warm Pacific Northwest winter was followed by a scorching summer. Rivers saw record or near-record low flows and soaring water temperatures that devastated sockeye salmon in particular.

The hostile fresh water conditions and the blob also hit Snake River steelhead and spring and summer chinook. The 2016 return of A-run fish - composed primarily of steelhead that entered the ocean a year earlier during the peak of the bad conditions - tanked. This year, a disappointing spring and summer chinook run ended fishing seasons early, and now A-runs and B-runs are faltering.

In August, steelhead seasons that allow anglers to catch and keep the hard fighting sea-run rainbow trout were canceled in favor of catch-and-release regulations. Harvest, with lower-than-normal bag limits, was restored last week following a late push by mostly A-run steelhead destined for the Snake, Salmon, Grande Ronde and Imnaha rivers.

Climate scientists have said the hostile conditions seen in 2015 could become commonplace in the coming decades.

"I think this summer in many ways was a climate change stress test on Northwest salmon habitat," Nate Mantua, a climate and fisheries scientist for the National Oceanic and Atmospheric Administration in Santa Cruz, Calif., said in 2015. "You could see which runs were especially vulnerable to a situation with much higher temperatures, much reduced snowpack in our mountains and about average precipitation for Northwest watersheds."

All of which begs the question, in the face of a warming climate and what appears to be a period of bad ocean conditions, is the strategy employed by the federal government over the past two decades to save Snake River spring summer chinook, fall chinook and steelhead up to the task?

Chapman and many others say no and that removing the dams remains a critical step to preserve the wild fish.

"The more fish that we deliver in as good a condition as possible to this poor ocean the better," said Joseph Bogaard, executive director of Save Our Wild Salmon in Seattle.

The federal government is expected to take a new look at dam removal. U.S. District Court Judge Michael Simon of Portland all but ordered it to do so when he overturned the federal government's latest plan to reconcile dam operations with the needs of the fish.

Simon is directing the U.S. Army Corps of Engineers along with its partners, the Bonneville Power Administration and the National Oceanic and Atmospheric

Administration, to subject the dams to National Environmental Policy Act scrutiny via an environmental impact statement and has asked all options be on the table.

Habitat work still needed

Much but not all of the salmon recovery efforts of the past two decades focused on juvenile fish. Billions of dollars have been spent on efforts to improve spawning and rearing habitat in headwaters of the basin and to make changes at dams so the fish can pass them at higher rates of survival and in better condition.

There has been some success. Cooling flows released from Dworshak Reservoir on the North Fork of the Clearwater helped to mitigate temperatures for juvenile fish in Lower Granite Reservoir. But the cooling effect largely dissipates by the time the water reaches the downstream side of Lower Granite Dam.

Removable spillway weirs have made it easier for the fish to find their way over the dams, but the warm slackwater reservoirs remain and they are increasingly hurting returning adults.

Even so, many say the focus on headwater habitat work was and remains desperately needed. David Johnson, director of Nez Perce Tribal Fisheries, points to legacy land-use practices such as clear-cutting and road building that have degraded fish habitat in parts of the Clearwater and Salmon river basins. The tribe has worked with money provided by the Bonneville Power Administration on things like replacing old culverts with bigger pipes that allow fish to reach formerly blocked spawning grounds, obliterating old logging roads that cause erosion, restoring flood plains that keep water cool and filter out sediment, and planting brush and trees along denuded stream sides.

"Using the (Bonneville Power Administration's) fish and wildlife program to improve juvenile habitat on those streams was a great opportunity and it was a good thing to do, you can't deny that whatsoever. The hatchery programs coming into full swing like they have, provided harvest for folks and made it a reality like it wasn't really in the 1980s and 1990s," Johnson said. "It's just, boy the things we are seeing - it's really kind of scary things that are happening - and it's scary to me because it's going to take a huge lift for our country and our society to kind of address it."

As proof for the need for bold actions, some point to poor salmon returns to areas where the habitat is in pristine condition. Rick Williams, an independent fisheries scientist based in Eagle, cites the Middle Fork of the Salmon River in the Frank Church-River of No Return Wilderness Area. Spring and summer chinook runs there have produced an average smolt-to-adult return rate of 0.9 percent since 2000. That is below the 2 percent needed for the run to simply replace itself annually and well below the 4 to 6 percent biologists say is needed for the runs to grow.

Ritchie Graves oversees efforts to improve salmon passage on Snake and Columbia river dams for the National Oceanic and Atmospheric Administration. He said salmon recovery to date, combined with previous good ocean conditions, helped boost the runs far above the numbers seen when the fish were listed.

That could change quickly and he compares it to the hit savings can take if you lose a job or suffer serious expenses.

"If you know you are going to have withdrawals on your bank account you better have more money in there to begin with," Graves said. "All that means is you can withstand one or two or three bad ocean years before getting down to the lower level."

But he also believes continuing to work on spawning habitat is important. There have been years when the capacity of headwater streams to support more spawning adults and their offspring has been in question. A good run might lead to more spawning and more juveniles but in many cases those juveniles must compete with each other for limited food and space in their natal streams.

"A lot of the habitat work is aimed at removing those problems so we have capacity of generating more smolts," Graves said.

More may be needed and he acknowledged that fresh water remains the focus over dam removal. But Graves doesn't dispute breaching would improve fish survival.

"Dams are not good for fish. My agency has never said dams are good for fish. We have worked to try to minimize those effects the best we can. Will fish be better off without dams? I think the answer is yes but how much better?"

A recent study, still in draft form, by the Fish Passage Center determined that dramatic increase in spill at Snake and Columbia river dams would produce a 2 to 2.5 percent increase in Snake River spring and summer chinook and breaching the lower Snake dams combined with increased spill in the lower Columbia would garner up to a fourfold increase in fish returns.

When good ocean conditions have aligned with good water years, many wild fish stocks have exceeded the 2 percent smolt-to-adult return levels. But Williams said salmon recovery policies can't rely on the best of conditions.

"This is like a big slot machine. When it comes up all sevens or cherries everything works but how often can you count on that? At the other end of that, there is the possibility of coming up with all Xs."

His prescription calls for employing fixes that empower nature, not those like hatcheries that substitute technology for natural processes. That means doing things such as dramatically increasing spill at Snake and Columbia river dams and planning for a future without the dams on the lower Snake River.

"My gut feeling is if nothing is changed on the lower Snake River dams the Idaho fish won't persist long term."