

Steelhead struggling home in record low numbers

Originally published August 18, 2017 at 6:00 am *Updated August 18, 2017 at 1:16 pm*

Warm-water conditions in the Columbia and Snake Rivers are challenging cold water salmon and steelhead — and the problem is likely to get worse because of climate change.

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Salmon and steelhead are in hot water — a problem scientists warn is going to get worse because of climate change.

Steelhead returning this year to the Columbia and Snake rivers migrated out of the river during horrendous conditions in 2015, which included record low flows and high water temperatures.

Those steelhead also were at sea during the so-called “blob” — [a mass of warm water that began forming off the West Coast in 2013](#) and wreaked havoc in the ocean, including depressed food supplies for marine animals of all sorts.

Now those steelhead are migrating back through reservoirs where water temperatures at some Columbia and Lower Snake River dams, thanks to a record Northwest heat wave, have been stuck this summer above 70 degrees for days on end — potentially lethal for salmon and steelhead.

“They are just getting creamed everywhere they turn; conditions in the Columbia and Snake are the worst I have ever seen them,” said Steve Petit, a steelhead biologist with Idaho Fish and Game for 32 years before retiring, he hoped, to fish the Clearwater River that runs past his home.

But not this year. The state of Idaho closed all rivers for sport harvest of steelhead this week because there are so few fish. Only about 400 steelhead had crossed Lower Granite Dam on the Snake River when the agency [announced a fall steelhead season closure](#), a precipitous drop from the 10-year average of more than 6,000 steelhead over the dam near Lewiston, Idaho.

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Salmon are tough beasts that since the Pleistocene have radiated over a wide geography, with brilliant adaptive capacity and an adventuresome proclivity to stray to colonize new habitats. But the Northwest salmon and steelhead nonetheless have genetics tuned for cold water, noted Jack Stanford, an emeritus professor of ecology with the University of Montana, affiliated with the Flathead Lake Biological Station.

In water warmer than 70 degrees, Stanford said, Pacific salmon and steelhead tend to slow down, or stop migrating altogether. Their susceptibility to disease goes way up.

And Michele DeHart of the [Fish Passage Center](#) in Portland noted that while warm water is a chronic problem, not a new one, on both the Columbia and Snake rivers, climate change is exacerbating it.

“What we see is since 2012 we have had a gradual increase in temperature,” DeHart said of the two rivers. But what is different now is how much earlier in the summer the heat sets in — and how long it lasts, she said.

“Before the dams, the river would get hotter for a few days. This is different, 30, 40 days, and that is where it really takes a toll. It has always been a problem but climate change is making it worse.”

Climate change affects the future of salmon in the Northwest in several ways. More precipitation is predicted in the Northwest, in the form of rain, rather than snow, reducing snowpack. And melt-out is predicted to come earlier, extending periods of lower flows.

[A 2016 scientific literature review of climate change and its effects on Pacific Northwest salmon](#) notes extreme heat events, among other problematic conditions for salmon, are more likely in the future. [An Environmental Protection Agency review of effects of climate change on the Northwest](#) — posted on the agency’s website until the Trump administration removed it — found that by the year 2100, one-third of current habitat for Northwest salmon and other cold-water fish will be too warm for salmon to tolerate.

A federal judge [in a court order last](#) year demanded that managers of the federal hydropower system start fresh on crafting a plan for running the system that won’t jeopardize salmon and steelhead.

It is the fifth such court order over more than 20 years of controversy over management of the river. But this time, and for the first time, agencies are specifically required to examine the effects of climate change when assessing dam operations and conditions for salmon and steelhead survival.

The judge also was clear that dam removal on the Lower Snake, the homestretch for endangered [Red Fish Lake sockeye](#) in their journey of more than 1,000 miles to the Stanley Basin, must be on the table. Temperature is compounding their other troubles, including ocean conditions.

“Every summer we are in chronic hot water,” said Joseph Bogaard, executive director of [Save Our Wild Salmon](#), a nonprofit salmon-conservation group that advocates for dam removal on the Lower Snake. “With a free-running Snake we would have ephemeral spikes, not these sustained events.”

Miles Johnson, clean-water attorney with [Columbia River Keeper](#), in a new white paper found that [even in 2015, salmon could have managed the Lower Snake River](#) without the dams, which exacerbate the warming trend.

Only [56 endangered Red Fish Lake sockeye](#) made it home in 2015. But most died in the Columbia, before even reaching the Snake River.

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