Crosscut
News of the Great Nearby

Elwha River salmon, steelhead better off without hatcheries

With the dams being removed, a massive hatchery program threatens to impede effective use of the millions spent to open up the river and help salmon and steelhead runs recover.

By Will Atlas, Rich Simms, Kurt Beardslee, and Pete Soverel

August 02, 2011.

This summer, the longawaited dam removal on the Elwha River finally gets underway, marking the culmination of a two-decade effort toward restoring salmon to one of Washington's most pristine rivers. The Elwha, in many ways, is a chance to rewrite history, undoing a century of destruction wrought by two dams that block migrating salmon from 90 miles of their historic habitat. By all accounts, removing the dams from the Elwha watershed is an extraordinary opportunity, one that will bring about the rebirth of a river, which was once home to some of the largest Chinook ever documented and where a 65-pound salmon was more the norm than a rarity. Throughout their evolutionary history, wild salmon and steelhead have recovered from a range of catastrophic disturbances.

Despite the capacity of these fish to recover naturally**,** state, federal, and tribal fisheries managers are poised to squander the opportunity. They've opted to build a $16 million hatchery that will flood the river with more than 4 million juvenile salmon and steelhead each year, including more Chinook and steelhead than are released on the entire northern coast of Oregon. This is despite 20 years of research demonstrating conclusively that hatchery fish are a major contributor to the decline of wild salmon in our region.

Domestication alters salmon so dramatically that a recent study by the National Oceanic and Atmospheric Administration (NOAA) and the Oregon Department of Fish and Wildlife (ODFW) revealed that even when hatchery fish are only one generation removed from the wild, wild fish produce approximately twice as many offspring as their hatchery counterparts. The current plan on the Elwha will domesticate a majority of the remaining wild salmon in the basin, reducing their productivity, and threatening their ability to build locally adapted, abundant wild populations.

Despite all the public interest, decisions on the Elwha recovery plan have been made largely without public input, driven instead by the millions of dollars set aside for a misguided and counterproductive hatchery. Meanwhile, research and monitoring critical in tracking the progress of the recovery remains woefully underfunded. The recovery plan claims that hatchery releases will be phased out as wild fish recover in the watershed, yet to date no benchmarks for wild recovery have been set, giving hatchery managers a blank check to continue harmful hatchery programs in perpetuity.

For nearly 60 years, the Washington Department of Fish and Wildlife (WDFW) has followed the "more is better" hatchery paradigm, releasing hundreds of millions of fish annually in almost every flowing piece of water in the state. Last year the state spent $52 million on hatcheries alone. What have we gotten for our investment? Thirteen ESA listed stocks in our state alone, coho extinct in the Upper Columbia and Snake Rivers, and most populations of salmon and steelhead hovering between 1 and 10 percent of their historic abundance.

To be fair, a litany of factors, including dams, overharvesting and habitat degradation, share the

blame, but if hatcheries were at all effective in sustaining wild salmon, the fish would be thriving. In fact, throughout the state WDFW is trying to reduce the number of hatchery fish spawning in the wild as a means of recovering fragile wild stocks. So why, on the pristine Elwha River; where we're about to spend millions of dollars to remove two aging dams in order to recover wild salmon, would we ever consider a recovery plan almost entirely contingent on hatchery releases?

Managers are convinced that as reservoir levels drop, fish in the lower Elwha will be subject to catastrophically high sediment loads. During the fall when the first heavy rains fill the river with a summer's worth of eroded material, there is concern that there could be potentially lethal levels of suspended sediment passing through the lower river. Consequently, some believe that without major hatchery intervention there will be catastrophe, and they've pushed a plan that takes a significant portion of returning wild fish into captivity to raise their offspring in a hatchery. Yet an overwhelming body of science suggests hatchery fish will produce fewer offspring, undermine the genetic integrity of wild populations, compete for resources, attract predators, and spread disease to their wild counterparts.

Equally concerning is a plan by the Elwha Klallam Tribe to continue releasing non-native Chambers Creek winter steelhead into the Elwha despite written requests from the every co-managing agency asking that they discontinue the program. Originally native to the south Puget Sound, Chambers Creek steelhead have been released for decades throughout the state to supplement fisheries. These fish are so far removed from their original, wild ancestry that when spawning in the wild they produce close to zero offspring (and, in fact, the original wild Chambers Creek steelhead population is now extinct). On top of this, a five-year fishing moratorium will be in place during the dam removal period, so none of these fish will be caught in tribal or sport fisheries, yet they will return to the Elwha, possibly spawning with one of the few hundred wild steelhead that remain. That would effectively nullify the reproductive investment of the wild fish, which are the backbone of the river's recovery.

With the all newly available habitat above the lakes, simply transporting wild fish around the dam removal locations would be a simple and cost-effective approach to start the recovery processes, while simultaneously ensuring that fish are not subject to dangerously high sediment loads in the lower river. Such "trap and haul" operations are commonplace throughout the state, and given the opportunity, the fish will be successful. Moreover, the history of the Toutle River in the years immediately following the explosion of Mount St. Helens shows the wild salmon and steelhead can deal with such short-term catastrophic disturbances of their native rivers.

Salmon are uniquely capable of rapid population growth during periods of low abundance, because lower competition between rearing juveniles leads to excellent survival. Swamping the upper Elwha with thousands of hatchery fish is not only expensive, it's counterproductive.

On the Cedar River near Seattle, a far more heavily impacted watershed, fish passage was constructed at Landsburg Dam in 2003. Enlightened managers opted not to release hatchery fish into the upper river and simply allowed fish from the lower river to stray into the newly opened habitat. In the first year, 150 coho found their way into the upper Cedar. Three generations later, in 2009, almost 800 fish passed the ladder and the population continues to grow.

Salmon are uniquely capable of such rapid population growth during periods of low abundance, because lower competition between rearing juveniles leads to excellent survival. Swamping the upper Elwha with thousands of hatchery fish is not only expensive, it's counterproductive, conflicting directly with the stated goal of recovering healthy wild populations.

All eight of the salmonid species historically found in the Elwha remain; from kokanee and rainbow trout (the landlocked forms of sockeye and steelhead respectively) to winter steelhead, Chinook, coho, chum, and pink salmon in the lower river. If allowed to migrate freely through their natal watershed again, they will thrive, but only if unimpeded by industrial scale hatchery intervention. Wild fish have been the backbone of our Northwest ecosystem for 10,000 years. Only in the last century have population growth, resource extraction and failed hatchery intervention driven populations to their current depressed levels.

The Elwha has a chance to rewrite the manual for salmon management, leading us into a future less dependent on an expensive and failing hatchery system that squanders tax dollars and

undermines wild fish recovery. With a majority of the watershed protected within the Olympic National Park, the habitat remains pristine throughout most of its length, giving the river the capacity to one day support abundant runs of wild salmon once more. Dam removal on the Elwha means that we're investing in an integral part of our region's tremendous natural wealth, wild salmon.

The Elwha is one of our very few opportunities to be given a second chance. We owe it to the fish, the many species that depend on them, and ourselves to see what they can do.

Will Atlas is chair of the steelhead committee of the Federation of Fly Fishers. Rich Simms is president of the Wild Steelhead Coalition. Kurt Beardslee is executive director of the Wild Fish Conservancy. Pete Soverel is president of The Conservation Angler.

Comments:

Posted Tue, Aug 2, 4:05 p.m. Inappropriate

These guys are seriously confused about where those "Hatchery" fish come from. They are harvested from the wild stocks that return the river. The only difference is that the juvenal mortality rate is lower because the hatchery hangs onto the fish until they are a bit larger than they would be if they just hatched out and flushed down the river.

The real danger to the salmon from the Elwah is the ocean net fishery.

— GaryP

Posted Tue, Aug 2, 4:06 p.m. Inappropriate

Anyone who would like to know more can read about it here: "King of Fish: The Thousand-Year Run of Salmon" by David Montgomery a local MacArthur Grant winner and professor at the UW.

— GaryP

Posted Tue, Aug 2, 4:09 p.m. Inappropriate

"These fish are so far removed from their original, wild ancestry that when spawning in the wild they produce close to zero offspring (and, in fact, the original wild Chambers Creek steelhead population is now extinct). On top of this, a five-year fishing moratorium will be in place during the dam removal period, so none of these fish will be caught in tribal or sport fisheries, yet they will return to the Elwha, possibly spawning with one of the few hundred wild steelhead that remain."

So which is it? That the hatchery fish are incapable of spawning or that they will spawn but dilute the native fish stock? Can't be both ways.

If you want to see a successful hatchery program just look at Baker Lake. 2nd year in a row that there has been any Sockeye fishing at all.

— GaryP

Posted Tue, Aug 2, 4:16 p.m. Inappropriate

OK you got rid of the dams. I thought that this removal was going to magically restore the salmon run. I am in favor of no hatchery and just waiting and seeing what happens.

What I find quite humorous is the tribe is now concerned about flooding from their now natural river. You wanted natural you got it - live with it.

— leitmotif

Posted Tue, Aug 2, 6:43 p.m. Inappropriate

GaryP

You misunderstand the consequences of spawning interactions between hatchery and wild steelhead. Based upon decades of WDFW research on the Kalama River and replicated in many other locations, when hatchery fish breed with wild fish that pairing produces no returning adults -- in effect the hatchery fish neuter the wild fish. In a recovering Elwha steelhead population where there will initially be only a few wild fish and, based upon tribal hatchery releases of about 60,000 Chambers Creek hatchery steelhead smolts, there will be many more returning hatchery steelhead. These hatchery steelhead will swamp the wild spawners and dramatically reduce the likelihood that the wild steelhead stocks will be able to recover. For example, suppose there are 9 hatchery steelhead returning for each wild adult. The likelihood of a WXW pairing is 1% while HXW, WXH and HXH pairings will comprise 99% of the spawning population.
PeteS

— soverel

Posted Wed, Aug 3, 12:37 a.m. Inappropriate

Unbelievable how people just can't leave anything alone. What a way to squander the opportunity of getting those dams out. Just like the forestry crowd that always, always thinks it can grow forests better than unassisted nature, the fish crowd always thinks they know better too. No amount of evidence to the contrary (and it is everywhere,) ever makes a dent on these people, not while they're on the gravy train of public funding.

Maybe when the state goes bankrupt we will at least be able to take some grim solace in the hatchery bureaucracy losing that 52 million a year, which is the real problem here.

— Snoqualman

Posted Wed, Aug 3, 7:34 a.m. Inappropriate

"Maybe when the state goes bankrupt we will at least be able to take some grim solace in the hatchery bureaucracy losing that 52 million a year, which is the real problem here."

Maybe state bankruptcy is the REAL goal of some of our salmon savers.

— BlueLight

Posted Wed, Aug 3, 9:51 a.m. Inappropriate

Hi Pete,
Sorry for the confusion, but your article mixes species up with your claims. Sockeye, Coho, and Chinook hatcheries seem to work quite well at increasing the fishing stocks. I'll buy that steelhead are different and perhaps should be left alone, and Pinks seem to be doing quite well with no interference at all.

Given my druthers there would be NO open ocean net fishing for Salmon. All fish would be harvested or not near the mouth of the river in which they spawn. This would allow fish management to spare some rivers and species which are under threat and leave others alone. That would encourage folks to improve a particular river system as they would see the economic benefit of the return on their investment.

I have high hopes that within 2 years of the dams being removed that fish from other rivers will return to this system and spawn.

— GaryP

Posted Wed, Aug 3, 11:15 a.m. Inappropriate

Would have been good to have interviewed some of the key players in the Elwha restoration in the Port Angeles area to get their opinion on this hatchery, rather than just make assumptions based on other rivers. While you might be right, I would have like to have heard from someone like the biologists working on the Elwha project, and maybe some local experts, like Dick Goin, who has been involved in this from a fish recovery point of view for multiple decades. There are many

others from both old line conservationists, tribal members and biologists. And yes, it appears that ocean factors will be more important than the spawning locales, once the dam is down. that is one reason they choose the Elwha, given that the run to Park protection is so short.

— 8string

Posted Thu, Aug 4, 2:12 a.m. Inappropriate

BlueLight, I doubt that the "salmon savers" (by that I assume you mean the hatchery crowd,) want the state to go bankrupt. If it does, there goes their gravy train. Like most parasites, they want to extract the maximum nourishment from their host without killing it. But there are so many other parasites out there competing for slices of the pie that all of them together look like they will end up killing the milch cow. In which case they lose, along with most of the rest of us. But, just maybe, the Elwha fish will win, if they go bust after the dams have been removed but before they can ruin the river by filling it with Frankenfish. Let's hope.

— Snoqualman

Posted Sat, Aug 20, 4:40 p.m. Inappropriate

Why not let some species recolonize themselves such as steelhead. The rainbow trout above the Dams on the Elwha are remininants of the original steelhead on the river. Once the dams are taken out some of these Rainbows will end up going down to the ocean. These rainbows will be what re-establishes the steelhead run. I don't have a biology degree, but I do fish a lot and know that Steelhead are one of the species that becomes domesticated very easily and once domesticated it lacks the natural ability to breed in a natural setting. Examples that prove this is the Mad River in Northern California. The Hatchery was shut down in 2002, before the hatchery was shut down it had one of the largest hatchery runs on the coast. Once the hatchery was out of commision for a few years the run went south in a hurry. In 2007 or 2008 the hatchery was funded again and the numbers rebounded. Now the Mad River is really only sutable for a hatchery run. If the so-called experts would leave the rivers steelhead alone I am willing to bet the farm that they would return in bigger numbers.

— egwaterguy

View this story online at: http://crosscut.com/2011/08/02/environment/21168/Elwha-River-salmon-steelhead-better-off-without-ha/

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