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## Removing Barriers to Salmon Migration

By **WILLIAM YARDLEY**

OLYMPIC NATIONAL PARK, Wash. — Beginning late this summer, one of the most promising and pure acts of environmental restoration the region and the nation have ever seen will get under way here, experts say, in the form of the largest dam removal project in American history.

It will demolish two massive [hydroelectric](#) dams, one of them 210 feet high, that block the otherwise pristine flow of the Elwha River, nearly all of which is within the boundaries of this remote national park.

For a century, since the first dam was built in 1912 to supply power for the town of Port Angeles and later a lumber mill, [salmon](#) have been trying, futilely, to follow their genetic GPS upstream on the Elwha. Instead, five miles south of where they enter the river from the Strait of Juan de Fuca, they hit a concrete wall.

“They pool at the bottom and go in circles,” said LaTrisha Suggs, the assistant director of river restoration for the Lower Elwha Klallam Tribe. “They swim up, they swim down, they swim up, they swim down.”

Biologists say that will change once the dams are fully removed, sometime in 2014, and that a migrating salmon population that has declined to about 3,000 fish will steadily begin replenishing itself from a small stock carefully perpetuated in rearing channels since the 1970s to preserve their lineage as “transitional species.”

These Chinook — one of six salmon species, all of which exist in the Elwha — are distinct from salmon that enter Puget Sound and those that spawn in rivers off the Pacific Ocean. Models

show that up to 392,000 fish will fill 70 miles of habitat now blocked by the dams, matching the predam peak. Chinook here once grew as big as 100 pounds, and experts say they should reach that size again.

“Because of the habitat we have,” said Brian Winter, the park’s project manager for the restoration project, “we expect success.”

It will have taken a long time and a lot of money to achieve. The first President George Bush signed off on the Elwha River Ecosystem and Fisheries Restoration Act after it was passed by Congress in 1992, and momentum had been building for more than a decade before that. The total cost, \$350 million, includes paying for new power sources and water treatment plants in the area as well as fish hatcheries and extensive revegetation projects.

The restoration of the Elwha comes as dams, often facing expiring operating licenses, are to be removed from several prominent rivers, including the White Salmon in Washington and the Penobscot in Maine. Four dams are scheduled to be removed in the Klamath River in southern Oregon in 2020.

Many conservationists see this as momentum for more ambitious goals, most notably their push to breach four dams on the Lower Snake River in eastern Washington that provide electricity, water and a channel for barge traffic between the ocean and the powerful agricultural interests inland. Their hopes increased when President Obama recently nominated Rebecca Wodder, the former president of American Rivers, which has pushed for dam removal on the Snake and elsewhere, to become assistant secretary for fish, wildlife and parks. The nomination, which has yet to be confirmed, is widely opposed by dam supporters.

Yet even advocates for larger dam removals acknowledge that they can draw only limited comparisons between the remote Elwha and dams like those on the Snake. The two dams on the Elwha, the Glines Canyon Dam and the Elwha River Dam, provided enough power on average for about 14,000 homes and allowed for no fish passage. The dams on the Snake can power a city the size of Seattle and have elaborate systems for fish passage, though a federal judge has repeatedly found them inadequate.

Even as it is planning to ambitiously promote the Elwha restoration, the Obama administration opposes removing the dams on the Snake, as did administrations before it. The judge, James A.

Redden of the Federal District Court for the District of Oregon, is expected to rule soon on a government plan to improve protections for salmon in the Snake and Columbia Rivers.

Here on the Olympic Peninsula, the National Park Service has helped lead a branding effort that includes posters and stickers saying “Elwha River Restoration; Natural Wonders Never Cease.” Local museums are collecting equipment from the powerhouse, which stopped producing power in June. A festival is planned in Port Angeles around the start of the removal in September. The public will be able to watch the dam removal from platforms during the next three years.

“Our Plan A is to use hydraulic hammers,” said Brian Krohmer, the project manager for the contractor overseeing the removal, Barnard Construction. “Plan B is explosives.”

The dams will be lowered slowly from top to bottom — “kind of like eating a corn cob, just going back and forth,” Mr. Krohmer said — to regulate the downstream flow of sediment accumulated behind them so it does the least damage to the river and the people below.

While experts say the habitat surrounding the river is pristine except for the dams, removing them has required extensive new plumbing elsewhere. The Lower Elwha Klallam Tribe, which has lived at the mouth of the river for thousands of years and has opposed the dams since they were built, is being connected to the sewer system next door in Port Angeles for the first time because of evidence that its septic system could be damaged by rising groundwater.

The reservation will also be protected by a [levee](#) that has been raised, widened and fortified with rocks as large as four feet across because the sediment flowing downstream will raise the level of the freed Elwha. The tribe wants all of this, but after a century of living with a tamed river and adapting as development increased on the peninsula, there is also concern.

“What worries me is that the river’s going to be unpredictable after they take the dams out,” said Ron Boulstrom, 46, a lifelong resident of the reservation and a commercial fisherman. “Four more years and I’ll have my house paid off, and I’m making a nice new garage. Hopefully, the river won’t take me out.”

Then again, according to tribal lore, the tribe’s creation site was flooded by the dams. And there are the Chinook, also called king salmon, remembered in stories told from generation to

generation, but now too depleted to fish.

“Back in the day, we had this whole place, the hills, the mountains,” Mr. Boulstrom said. “I’d like to catch another king out of the Elwha in my lifetime.”

*This article has been revised to reflect the following correction:*

***Correction: July 29, 2011***

*An earlier version of this article misstated the location of the White Salmon River. It is in Washington, not northern Oregon.*