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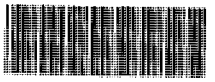





# Elwha Dam removal illustrates growing movement

**By Juliet Eilperin, Published: September 16**

The largest dam demolition in the nation's history will begin Saturday when an excavator claws away at the concrete supports for Washington's 108-foot Elwha River Dam, a ceremonial act of destruction that will signal not only the structure's demise but the latest step in a broad shift in the way Americans are managing rivers.

Faced with aging infrastructure and declining fish stocks, communities are tearing down dams across the country in key waterways that can generate more economic benefits when they're unfettered than when they're controlled.

"What once seemed radical is now mainstream," said American Rivers President Bob Irvin, whose group has advocated dam removal for environmental reasons. "All of these are experiments in how nature can restore itself, and the Elwha is the biggest example of that."

The pace of removal has quickened, with 241 dams demolished between 2006 and 2010, more than a 40 percent increase over the previous five years. Many of them are in the East and Midwest, having powered everything, including textile mills and paper operations at the turn of the 20th century.

A drumbeat of litigation by tribes and environmental groups has pushed federal officials to dismantle some dams that otherwise would have remained in place. Although this has led to political fights in regions where dams matter the most, such as the Pacific Northwest, it has also forged historic

compromises.

"The Elwha River restoration marks a new era of river restoration in which broad community support provides the bedrock for work to sustain our rivers and the communities that rely on them," Interior Secretary Ken Salazar said in a statement.

Although estimates vary on the economic value of restoring a river's natural flow, it creates construction jobs in the short term and eventually restores depleted commercial fisheries. It also draws tourists — anglers, rafters and kayakers. Federal officials estimate the $325 million, 2 1/2 year Elwha river restoration project will generate at least 760 jobs during its duration and 446 annual jobs in recreation and tourism once it's finished.

This push to demolish large dams on major rivers in the Pacific Northwest, which got 70 percent of its electricity supply from hydropower as of 2009, has been criticized by influential policymakers, such as House Natural Resources Committee Chairman Doc Hastings (R-Wash.). Hastings sought to block funding for dam demolition as well as the nomination of President Obama's choice for assistant secretary of fish, wildlife and parks, Rebecca Wodder, who advocated for dam removal as the former president of American Rivers.

"I am very skeptical of the removal of dams, period," Hastings said in an interview, noting that dams not only provide electricity but also irrigation, recreation and transportation.

Dams once played an outsize role in the nation's energy supply, providing 40 percent of U.S. electricity in 1940. Now they account for 7 to 10 percent, with only 3 percent of the nation's dams boasting generating capacity.

The two dams on the Elwha River generate a modest amount of electricity — 19 megawatts, compared with the 500 megawatts of an average coal-fired power plant.

Linda Church Ciocci, president of the National Hydropower Association, said hydropower's low carbon emissions makes it an ideal energy source. The industry hopes to increase its capacity 66 percent in 15 to 20 years by upgrading dams and converting non-powered dams, as well as through technological innovations such as wave and tidal energy.

"We have a tremendous opportunity in the United States to increase renewable generation through hydropower," Ciocci said.

States and local governments across the country, meanwhile, are grappling with how to deal with dams that have outlived their usefulness. Most of the country's 80,000 dams were built more than 50 years ago.

Martin Doyle, a Duke University professor of river science and policy, estimates that 85 percent of dams in the United States will be near the end of their operational lives by 2020.

The Federal Energy Regulatory Commission licenses hydropower dams for 50 years, with possible extensions of 35 to 50 years.

The decision to dismantle them is made on a case-to-case basis, driven by factors including local regulations, litigation and the availability of funding. Pennsylvania has dismantled 186 dams — more than any other state — largely because the Fish and Boat Commission overseeing dams there has used

existing laws to pressure owners to dismantle them and provided state funds to help finance the projects.

Tim Purinton, a director at the Massachusetts Department of Fish and Game's division of ecological restoration, said his state has conducted an assessment of its roughly 3,000 dams to determine which could be good candidates for removal.

"It's one of the biggest bangs for the buck in terms of the amount of restoration you can get, for one intervention," Purinton said, adding that his division has 30 potential dam projects but lacks the money to dismantle them.

In some cases, the removals have delivered human benefits as well as ecological ones. Purinton's division and its partners spent $650,000 to remove the Briggsville Dam in Clarksburg, Mass., this year, $100,000 less than what it would have cost to bring it up to code. In past years, the dam had raised the river's level, which caused it to jump its banks during storms. Last month the town avoided flooding from Hurricane Irene because the dam was gone, he said.

Maryland officials are working with environmental groups and federal officials to dismantle at least three of the four dams on the Patapsco River, which flows into the Baltimore harbor. For years officials had tried, with little success, to use fish ladders to help shad, herring and eel, which need to swim upstream to spawn, traverse the aging structures. Last year, they used $3.3 million in federal funds to take down two of the dams and are now hoping to dismantle the Bloede Dam downstream, which generated power for a only few years in the early 1900s.

Other dam removal projects are more controversial. Hastings has sought to block federal funding for the impact on navigation stemming from dismantling the 125 foot-high Condit Dam owned by PacifiCorp on southwest Washington's White Salmon River, which is scheduled to begin in late October, on the grounds that taxpayers shouldn't have to pay anything for it. Several groups are still locked in litigation over whether to remove four dams on the lower Snake River, a move that could help recover imperiled salmon and steelhead but would eliminate 1,100 megawatts of generating capacity.

The Lower Elwha Klallam tribe fought the Elwha Dam and the 210-foot Glines Canyon Dam upstream for years. It's taking part in a nearly week-long celebration around their demolition. Robert Elofson, the tribe's river restoration director, said his clan has such a close connection to the fish that once flourished there that "we were called the salmon people, to give them a status equal to the people."

Almost entirely contained within Washington's Olympic National Park, the Elwha is untouched aside from the concrete structures that have reduced its wild salmon spawning population from 400,000 to about 3,000. Three of the salmon species native to the river — chinook, steelhead and bull trout — are listed as threatened under the Endangered Species Act.

Amy Grondin, who operates a commercial fishing boat with her husband an hour away in Port Townsend, said removing the dams will ultimately produce more salmon for her and others to catch. "I'm an hour away. But an hour away is nothing, especially for salmon," she said.

Brian Winter, the Elwha project manager, estimates it will take 25 to 30 years for the river to return to its natural state. Once it does, he predicted that the hundreds of thousands of salmon traversing the river will provide sustenance for trees growing along the river's banks, orcas swimming in Puget Sound and others.

"We literally are restoring an ecosystem from mountain to sea," he said.