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Removing dams, restoring culture

When Rob Young called me in 2005, it was to talk about a local dam removal proposal.

A geosciences professor at Western Carolina University, Rob offered a scientific explanation of why Duke Energy's plan to demolish the Dillsboro Dam was the right thing to do. He also told me about some work he was doing with officials in the Pacific Northwest, where he was participating in the planning of the nation's largest dam removal project – the dismantling of two dams on the Elwha River, which flows through Washington state's Olympic National Park.

Once the controversy and legal battles were over, the 12-foot high Dillsboro Dam was gone in about six weeks; it will be two to three years before the 210-foot Glines Canyon Dam on the upper Elwha and the 108-foot-tall Elwha Dam are completely dismantled. The process began in September, with the ceremonial removal of the first chunks of concrete, and Rob was on hand for the event.

Construction of the two dams more than 80 years ago choked off salmon runs and dramatically changed what was once a sandy coastal environment, Rob said, adding that the hydroelectric projects also had a major effect on the Lower Elwha Klallam Tribe, flooding sacred grounds and changing their way of life.

"It was incredibly moving to be at the ceremony in September," he said. "I've met several members of the Klallam Tribe who have vivid memories of the loss their parents felt after the river was dammed."

The Elwha dams may be much larger than our former Dillsboro Dam, but their history is similar. Glines Canyon was built in 1927 by Thomas Aldwell, who Young describes as "Port Angeles' (Wash.) C.J. Harris. Aldwell built the Elwha Dam in 1913 – one year after Harris built his first dam in Dillsboro – which at one time supplied electricity to Port Angeles and surrounding towns, just as the Dillsboro Dam once powered Dillsboro and Sylva.

In another interesting parallel, Aldwell "championed timber interests and was a vocal opponent of a larger-than-expected Olympic National Park," according to The Peninsula Daily News, Port Angeles' local paper. Harris, as has been reported here before, opposed the creation of the Smoky Mountains National Park for similar reasons.

Removing the Elwha dams will restore the river and the salmon in the river, which will in turn restore the Klallam Tribe's traditional culture, Rob said.

His involvement began around 2004 when the National Park Service hired him to consult on the project and study what would happen when the sediment trapped behind the dam reached the Pacific Ocean. Rob, who also directs WCU's Program for the Study of Developed Shorelines, said no dredging is planned as part of the Elwha dam removals, both because it would add cost and because the sand is needed at the end of the river. Where the Elwha meets the ocean was once a delta that fed the Tribe's beaches, he said. Since the river was dammed, those beaches have been eroding.

"It's like in Louisiana, on a smaller scale," Rob said. "Letting the sand go down river is restoration also."

The one thing that bothered Rob when he initially became involved in the planning for the dams' removal was the realization that no one from the Klallam tribe was part of the process, even though tribal members were the

driving force behind dismantling the dams. In addition, Native Americans are the least represented group among those who choose a career in geosciences, which includes the study of rivers, beaches, soils and soil development.

“If there’s any field to get Indian kids interested in, it should be geosciences,” Rob said.

With that in mind, he submitted grant proposals and received two National Science Foundation grants totaling \$1.7 million. With that money, Rob and his colleagues have worked to use the removal of the dams to help increase the number of Native American youths interested in careers in geosciences and environmental restoration.

“What we have been doing with our partners at the Olympic Park Institute and tribal elders is to try to show middle school and high school students in the tribe that science matters to them,” he said. “We are teaching science and culture side-by-side and showing that the science that goes along with the restoration of the Elwha River to its natural state is culturally relevant to them and the members of their tribe.”

Rob’s not only interested in Native American culture a continent away; he and the PSDS are also working with the Eastern Band of Cherokee Indians on a river cane restoration project at the Cherokee School.

“Both efforts are using environmental restoration to restore culture,” Rob said.

In Washington state, the educational effort appears to be paying off. Since the project began, high school graduation rates for the tribe’s young people have increased dramatically, said Tracey Hosselkus, tribal education coordinator.

“The Geoscience Education Program run by Western Carolina University and local partners here in Port Angeles has made a big difference in our ability to provide meaningful cultural education and an appreciation for the sciences,” Hosselkus said. “With the help of this program, our graduation rates have never been higher.”

Inspired by that success, Rob and his wife, Leigh Anne Young, recently established a scholarship fund to send these new high school graduates on to college – the Bea Charles Scholarship in Environmental Restoration. The scholarship is named for Bea Charles, an elder of the Lower Elwha Klallam Tribe who fought for the restoration of the native environment and native culture within her community. Charles died in April 2009 at the age of 90.

“The hope is that we can remove cost as an impediment to a young person’s decision to attend college,” Rob said. “It has been our privilege over the last eight years to work with many young people and educators within the Lower Elwha community. It also was our great privilege to share time with, and learn from the wisdom of, Bea Charles. We hope that this scholarship will help encourage the tribe’s young people to pursue environmental science as a means of healing and uplifting the community.”

In addition, the Elwha Science Education Project, which holds camps and field trips for youth from the Lower Elwha Klallam and other tribes, has caught the attention of a national magazine. The December issue of Smithsonian features an article titled “Native Journey,” which describes the PSDS’ effort to interest Native American youth in science and chronicles the impact the dams’ removal will have on the Klallams’ tribal culture.

Besides exposing Native American youngsters to geosciences, the NSF funding to PSDS has also enabled numerous WCU undergraduate and graduate students in geology and environmental science to travel to Washington to conduct fieldwork and get first-hand experience at the scene of a precedent-setting coastal restoration project. WCU students will continue to monitor changes to the Elwha River environment as the dams come down over the next two to three years.

Attendees at the September celebration that marked the first step of dam removal included PSDS supporter Yvon

Chouinard, the outdoor recreation icon who founded the Patagonia clothing company; Washington Gov. Christine Gregoire; U.S. Sens. Patty Murray and Maria Cantwell; U.S. Secretary of Interior Ken Salazar; former Sen. Bill Bradley of New Jersey; and actor Tom Skerritt, who is on the board of American Rivers.

Prior to the ceremony, Rob gave a keynote address at the Elwha Science Symposium. In his talk, titled “The Elwha River Restoration Project as a Signature Example of What Environmental Restoration Should Be,” he described how the dam removal project meets the Society for Ecological Restoration International definition of environmental or ecological restoration – one that returns the ecosystem to its historical trajectory; re-establishes a characteristic assemblage of species found in the native ecosystem; and is sustainable.

Rob, who has co-authored a book on the potential effects of sea-level rise, testified before congressional committees and discussed the impact of coastal development on NPR, says his involvement with the cultural restoration and education initiative brought on by the dams’ removal is personally fulfilling.

“This project has turned into one of those things that makes me feel better about myself than anything else,” he said.