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Main Image:
Eklutna River Dam 04 - 20150723.jpg-1437700565 [2]
Main Image Caption:
Rick Sinnott peers over the lower Eklutna River dam on Thursday, July 23, 2015. The obsolete 61-foot high dam, built in 1929, may soon be dismantled, allowing salmon to return to the river.

EKLUTNA -- In 1929, the Eklutna River was dammed, forever it seemed. A 61-foot-high dam impounded the river about 1 1/2 miles upstream of the old Anchorage-Palmer highway. And few man-made things appear to be as immutable as a concrete dam.

On a recent hike through the Eklutna River canyon, slipping on boulders coated with brown algae, wading back and forth between the banks to avoid sheer cliffs or deep pools, I considered what it would be like to be a salmon growing up in such a river.

Imagine overwintering as one of thousands of translucent, orange eggs buried in the gravels of riffles or deep pools. Maybe I'd hatch into an alevin, become a fingerling and survive another year or two in the frigid water, constantly alert to predators like rainbow trout and American dippers. One day, with a little luck, I'd become a silvery smolt and swim downstream to Cook Inlet.

Only there are no salmon in Eklutna River above the old hydroelectric diversion dam. The dam decimated the river's salmon runs.

If you're a salmon, however, help is on the way. The Conservation Fund -- in partnership with the Native Village of Eklutna and Eklutna Inc. -- has formally announced its intent to remove the dam now owned by Eklutna Inc.

Brad Meiklejohn, Alaska director of The Conservation Fund, has notified affected parties and agencies, including the U.S. Corps of Engineers, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Alaska Department of Fish and Game, Alaska Department of Environmental Conservation and the Alaska Dam Safety Program in the Department of Natural Resources. He is working with HDR Inc. on a preliminary dam removal strategy, which will include how to safely disperse the tons of sediment accumulated above the dam.

Walking the river

Even though it's dammed, Eklutna River remains one of the wildest streams in Anchorage [3].

The river is seldom visited because access is difficult. There is no trail, and the precipitous, crumbling canyon walls and slippery in-stream boulders make footing hazardous. Consequently, fish and wildlife are unaccustomed to encountering human visitors.

Although the salmon are long gone, rainbow trout in shallow water darted for cover at my

approach. The biggest rainbows -- the top dogs of the river's aquatic food chain -- all seemed to be about 6 inches long.

Walking downstream, I found moose hoof prints on the occasional muddy spots and sand bars. A single wolverine track was a rare find in summer. A black bear had scrambled across a sand bar. Just before reaching the dam I noticed a few brown bear prints, the freshest tracks of the day.

Approaching the dam across the impounded sediment basin, in the last hundred yards before the river poured over its concrete lip, the water level had risen unexpectedly into the surrounding brush. A freshly gnawed stick signaled the presence of a beaver. I soon stumbled upon the beaver's mud-and-branch dam, which, by impounding water several feet higher than the concrete dam, was one instance where a furry, brown engineer surpassed the efforts of his college-trained and licensed peers.

A 24-year-old agreement

Before the hydroelectric diversion dam was built, Eklutna River was inhabited by chinook, coho, sockeye, chum and pink salmon. Almost certainly some of these species spawned and spent their early years in Eklutna Lake. All five species are still found in the river below the dam, though in greatly reduced numbers.

Like most dams, the lower Eklutna dam had a limited life expectancy. The construction of a tunnel from Eklutna Lake to a new hydroelectric plant on the Knik River in 1955 sealed its fate. After routine maintenance ceased, the dam quickly filled to the brim with rocks and sand carried downstream by the current.

The dam has served no purpose for half a century. Like thousands of others across the United States, it has become a "deadbeat" dam [4] -- outdated and ecologically destructive.

When the dam was built in 1929, there were no laws requiring environmental protection or mitigating the adverse effects of development [3]. However, when the newer hydroelectric facility was transferred to a consortium of electric utilities in 1997, it triggered a 1991 agreement between the state of Alaska, municipal and private electric utilities, and federal and state resource agencies. The 1991 agreement required the new owners to mitigate damage to fish and wildlife caused by the dams. The owners had 30 years from the transfer to do so, which means that rehabilitation must be initiated by 2027.

The relatively straightforward agreement has been complicated by subsequent events. The biggest complication is conjuring up enough water to facilitate salmon migration and survival.

According to the utilities' water rights certificate, "any and all" of the water flowing into Eklutna Lake is legally reserved for hydropower. However, in the mid-1980s Anchorage tapped the lake for its water supply. Essentially all of the annual discharge from the lake is used to generate electricity and supply about half of Anchorage public water supply.

With essentially all of the water flowing into Eklutna Lake employed in supplying electricity and municipal water [5], there is no economic incentive for the utilities to allow any water to drain from the lake into the river. Owners may be reluctant to do anything to rectify dam-related environmental impacts, such as the loss of salmon in the river and lake, before 2027, if then.

Affected groups, such as the Native Village of Eklutna, and state agencies are beginning to ask why not. Although the U.S. Army Corps of Engineers, in cooperation with other agencies, has conducted research and proposed several solutions, no one agency or organization seems to have been able to muster the commitment necessary to remove the lower dam. Until now.

Removing the dam

According to the conservation organization American Rivers, during the past century the United States led the world in dam building [6]. Over 80,000 dams greater than 6 feet tall have been built. Many thousands of smaller dams also exist. Former U.S. Interior Secretary Bruce Babbitt once observed that “on average, we have constructed one dam every day since the signing of the Declaration of Independence.”

During the past century an effort has also been made to disassemble dangerous and superfluous dams, especially those blocking the passage of salmon or other anadromous fish. An estimated 1,150 dams have been removed [7], mostly in New England in states bordering the Great Lakes and on the West Coast.

The Native Village of Eklutna has been trying for years to increase salmon numbers in Eklutna River. In 2002 it orchestrated a planning effort to remove the dam. After a few meetings, the planning team’s momentum ground to a halt. Meiklejohn describes the dam’s present owner, Eklutna Inc., as a “huge booster” of the project.

Removing the lower dam will eliminate the largest hurdle, but a second step will be needed to restore salmon spawning and rearing habitat in the river. The upper dam, at the lake outlet, is designed to impound water until the late-summer lake level overtops the spillway. Some water will need to be released from the dam on a regular basis.

Finally, even with the lower dam removed and additional water flowing downriver, full restoration would require a fish ladder or another way around the upper dam.

One step at a time

Meiklejohn is taking it one step at a time. He met with representatives from the agencies involved in the previous planning effort on July 17. Before beginning, The Conservation Fund and Eklutna Inc. will need the appropriate permits and other authorizations from agencies.

According to Meiklejohn, “the inertia associated with this project is enormous.” But getting from here to there doesn’t faze him. “We wanted to take the position that the dam removal is happening, we are starting it, and we will deal with the issues in sequence.”

The next stage will be engaging the owners of the hydroelectric facility. At this point, all The Conservation Fund will ask from the owners is, once the lower dam is torn down, for them to spill enough water into the river to allow salmon spawning and rearing. Some salmon would move into the river above the dam site as soon as an adequate channel was available through the sediment. Although some sockeye are found in the river below the existing dam, Fish and Game might also decide to stock the lake with fry, which would out-migrate and return several years later as spawning adults. But at this stage, there are still many unknowns.

Once the lower dam is gone, when the sediment behind the dam is flushed away, the beaver’s dam will wash away too. The beaver will adjust as beavers, always hard working, always do. And salmon will begin to repopulate the Eklutna River for the first time in nearly a century.

Rick Sinnott is a former Alaska Department of Fish and Game wildlife biologist. The views expressed here are the writer's own and are not necessarily endorsed by Alaska Dispatch News. Contact him at rickjsinnott@gmail.com [8].

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