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Main Image:

[Eklutna Lake Dam: LH-20130614-7840](#) ^[2]

Main Image Credit:

Loren Holmes photo

Main Image Caption:

The Eklutna River's upper dam was rebuilt in 1966 in its present location, several hundred yards downstream from the lake's outlet.

ANCHORAGE -- In "Through the Looking Glass", the White Queen chastised Alice, "It's a poor sort of memory that only works backwards." I'm plagued by just that sort of memory.

I have been wondering, for instance, whatever happened to the agreement – dated Aug. 7, 1991 – to [mitigate the effects of the Eklutna and Snettisham hydroelectric projects on local fish and wildlife populations](#) ^[3].

Salmon runs, and wildlife that depended on salmon, were never rehabilitated after dams were built on the Eklutna River to supply electricity in the early years of Anchorage. A multi-agency working group has been unable to restore the river, much less the fish. Electric utilities, which own all rights to the water, are unwilling to share it with fish. Few people remember the original agreement. More than two decades after the agreement was signed, Alaskans are still searching for a solution.

Eklutna Lake and the two lakes that generate Snettisham hydropower are deep, glacier-carved lakes surrounded by mountains. The Snettisham project is located in rugged, mountainous terrain southeast of Juneau. Eklutna Lake lies between the Matanuska-Susitna Valley and Anchorage, within 50 miles of most of the state's population. The Snettisham and Eklutna hydro projects are among the largest in Alaska; only [Bradley Lake, on the Kenai Peninsula, has a larger installed capacity](#) ^[4].

These Alaska projects were among many hydroelectric developments, like the Tennessee Valley Authority, built by governments to foster regional development. Many now question government involvement in the business of producing and marketing energy and favor deregulation and downsizing government. By divesting itself of the Eklutna and Snettisham projects the federal agency that managed them, the [Alaska Power Authority \(APA\), put itself out of business](#) ^[5].

The 1991 agreement was left in its wake. Ultimately the agreement will broker a trade-off between the human demand for energy and water and an equal and opposite human desire to maintain populations of Alaska's fish and wildlife.

A sweet deal

When the APA transferred the Eklutna and Snettisham hydroelectric facilities into private,

municipal, and state hands, those entities were not required to obtain a Federal Energy Regulatory Commission (FERC) license prior to operation. The Eklutna project was sold to Anchorage Municipal Light and Power, Chugach Electric Association, and Matanuska Electric Association. The Snettisham sale was negotiated by the Alaska Energy Authority but purchased by the Alaska Industrial Development and Export Authority, and the state contracted with Alaska Electric Light & Power Company, in Juneau [6], to operate the project.

The price of the two projects was not the market value but the present value of the outstanding debt of the APA. It was a good deal. The Eklutna project sold for nearly \$6 million in 1997 [7], having brought in more than \$1.3 million on the wholesale energy market that year. Snettisham sold for nearly \$82 million in 1998 [8], having brought in nearly \$8.7 million the previous year.

A 30-year hiatus

Not everyone was satisfied, however. In discussions leading up to the divestiture, several federal and state agencies raised the concern [3] that skipping the normal FERC licensing procedure would provide no opportunity to determine the extent of fish and wildlife impacts or to develop a plan to “protect, mitigate damages to, and enhance fish and wildlife [3] (including related spawning grounds and habitat).”

To grease the skids, the electric utilities and the Alaska Energy Authority agreed to fund studies “to examine, and quantify if possible, the impacts from both projects.” The studies would also examine and develop proposals to restore fish and wildlife populations affected by the hydroelectric developments. Finally, the purchasers pledged to consider how these measures would affect “electric rate payers, municipal water utilities, recreational users and adjacent land use, as well as available means to mitigate these impacts.”

But none of this was going to happen anytime soon. The consultation process for the study plans was to be initiated no later than 25 years after the transaction dates for each hydro project. All provisions of the fish and wildlife mitigation plans for Eklutna Valley were to be initiated no later than 30 years and be completed within 35 years after the transaction date. The Alaska Energy Authority (AEA) was given an additional five years to initiate and complete its fish and wildlife mitigation for the Snettisham project.

In retrospect, it seems like a sweet deal. For the electric utilities. Rather than redressing fish and wildlife impacts from the beginning, they didn't have to conduct any mitigation for 30 years. In its environmental assessment, the Alaska Power Authority stated, “The approach for fish and wildlife measures is novel.”

By the terms of the agreement, the clock started when the project was transferred from federal management to the purchasers. The Eklutna hydroelectric project was transferred on Oct. 2, 1997, six years after the agreement was signed. The Snettisham hydroelectric project was transferred to the Alaska Energy Authority in August 1998. Anyone concerned about restoring affected fish and wildlife populations was just going to have to take a number and wait patiently until 2027 for something to be done about it.

Terms of the agreement

When the time is up, some state or federal biologist – who probably hasn't even graduated from college yet – will have to blow the dust off the fish and wildlife agreement and bone up on the terms.

The agreement specified that the purchasers are responsible for mitigation. However, they are

required to consult with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the Alaska departments of Fish and Game, Environmental Conservation, and Natural Resources. These agencies will also be allowed to comment on draft reports and plans. The final draft mitigation plan will then go through a public review process. The governor is required to review and finalize the Eklutna and Snettisham plans at least three years prior to their implementation.

The provisions of the agreement, including the decisions of the governor and the conditions of the fish and wildlife implementation plan, are reviewable and enforceable in the U.S. District Court for the District of Alaska. Any party seeking review or enforcement of the agreement must send written notice to all parties and hold a meeting to attempt informal resolution.

A redundant dam

Hydroelectric development didn't begin affecting fish and wildlife populations in the Eklutna River drainage in 1997 when the federal government sold the project to the purchasers. A cascade of environmental impacts began nearly 70 years earlier [9].

In the early 1920s a local businessman, Frank Reed, investigated the potential for hydropower on the river. After claiming a right to the water and obtaining a permit from the Federal Power Commission for constructing and operating a power plant on federal land, Reed constructed two dams on the river in 1929. An earthen storage dam, located at the outflow of the lake, raised the water level several feet. A much more substantial diversion dam was built in the canyon about 1.5 miles upstream from the Old Glenn Highway. This dam was built of reinforced concrete and stood 61 feet high. Water from the diversion dam was piped through an underground tunnel to turn the turbines in the powerhouse. Reed sold badly needed electricity to Anchorage, and later the Matanuska Valley, until 1943, when the fast-growing city bought the power plant.

Not long after, the federal Bureau of Reclamation had a better idea: bore a 4.5-mile-long tunnel completely under the Twin Peaks, from the lake to the Knik River. This project, completed in 1955, rendered the diversion dam on the lower river redundant. The federal government bought the power plant – including, presumably, both dams – from Anchorage and built a much larger powerhouse near the Knik River.

The obsolete diversion dam has a sluice gate through the bottom which allowed gravel and debris deposits to be released downstream. Studies conducted in 1948 estimated, on average, 300,000 cubic yards of sediment were flushed from behind the dam every year. After the dam was mothballed, routine maintenance ended and the dam soon filled with sediment.

Selling more than electricity

As with other, much larger, dams in the American West, the Bureau of Reclamation was selling more than electricity. In its 1948 plan describing the new and improved Eklutna hydroelectric project [10], the agency justified the public expense by hyping the “highly desirable” recreational potential of the lake.

In 1948, fewer than 35,000 people lived in Anchorage, about an eighth of the current population. The Seward Highway, which opened the recreational potential of the Kenai Peninsula to Anchorage residents, had not yet been built. Most Anchorage residents looked north for recreation and, despite its primitive access road, Eklutna Lake attracted many weekend warriors. The National Park Service, noting that 25 percent of Alaska's population lived nearby, reported “as many as 400 persons have visited the area on a weekend day” and “the usual daily weekend visitation is more than 200 persons.” It planned to provide a lodge equipped with guest rooms, a lounge, and a coffee shop.

Attractions included the scenery, boating, hiking and fishing, although the agencies proffered mixed messages about the lake's fish. The National Park Service believed "the lake contains no fish of consequence due to the colloidal silt content of the water." The U.S. Fish and Wildlife Service supported the project because "no salmon or game fish are involved." However, the plan cited an editorial in the Anchorage Times that claimed "Fishermen work the mouths of the streams on the lake shore." It is likely that the lake held Dolly Varden char and kokanee, a landlocked sockeye salmon. The rainbow trout found in the lake today were probably not native, but released in the lake sometime later by the Alaska Department of Fish and Game.

Where were the salmon?

If Eklutna Lake had supported a significant run of salmon in the late 1940s, serious objections might have been raised about the proposed federal hydro project. Where were the salmon?

The Eklutna River has no natural barriers to fish migration. However, it had two unnatural barriers, the private dams built two decades earlier. When Reed proposed building the original dams, no promoters, big-city boosters, or their clientele batted an eye about eradicating salmon runs in the river. Only one community was greatly affected by Reed's business venture: Eklutna Village, located near the mouth of the river. And it's unlikely that anyone consulted the Dena'ina people living in the village.

There is evidence that the river and lake supported many salmon prior to 1929. In 2002, Eklutna Village elder Lee Stephan, who was born in 1954, recollected ^[11], "In my youth, the fish were so thick you could walk across them." In another interview Stephan recalled times when the lower river was filled with pink salmon. That's not the only salmon species that was affected. The Alaska Power Administration, in its 1992 divestiture report ^[3] and environmental assessment for the sale of the hydroelectric projects, found that during initial reviews "one significant problem was identified -- namely, loss of a sockeye salmon run that once spawned in Eklutna Lake." It also identified the cause: the private dams constructed in 1929. Chinook, chum, pink and coho salmon still reside in much reduced numbers in the lower river, below the diversion dam.

The Great Alaska Earthquake of 1964 destroyed the upper dam. It was rebuilt in 1966 in its present location, several hundred yards downstream from the lake's outlet. Once again, no provisions were made for fish passage. Salmon runs were still blocked by the lower dam, which survived the earthquake intact. Once again the problem was passed on for a future generation to solve.

Part one of two.

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