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Water, power, homeland: restoring and re-storying the Eklutna River

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Beginning in 1929, the Eklutna River in Southcentral Alaska was largely de-watered for hydropower production without the consent of the Eklutna Dena'ina. The hydropower projects were implemented in two waves—first in 1929 by a private developer and then in 1951 by the Bureau of Reclamation. In 1991, a Fish and Wildlife Agreement between the utilities, the State of Alaska, and federal agencies called for study of the impacts of the hydroelectric projects on fish and wildlife, and development of a mitigation plan by 2024. This paper examines the process and partners involved in advocating for restoration of the Eklutna, building on the documented importance of tribal leadership in dam removals, and centering three factors that are underrepresented in the current analyses of alternative management approaches to the Eklutna: the context of the Eklutna as a Dena'ina place; the egregious and ongoing Indigenous environmental injustice of seizing Eklutna water; and the praxis of Dena'ina-led efforts to find a balance of uses of this highly valued Dena'ina watershed.

KEYWORDS

dam removal, Alaska Native, traditional ecological knowledge, restoration, stewardship

Introduction

Dach' Idlughet Hyighiyih
How Eklutna Got Its Name[1]

Eklutna Utnuht'ana hch'anaghedeł.
The Ahtna used to come out to Eklutna.

Niłdajaqa ighi yedghu Eklutna Lake ghin q'estsiq' ghu shagela ghe k'undet yan ch'aquideł ch'u
Two sisters came out to the outlet of Eklutna Lake for trout, being without food, and

Shagela qubedighilagh
A trout swam into their trap.

Shagela dghiłchek'a k'uda yet ts'in'e tunuyiłghel.
It was a little trout, and they threw it back in the water upstream.

Ben ghinhdi seven mile hqugh daghiłney.
The lake is seven miles long.

Daghiłkegh.
It is large.

1 Story told by Eklutna Alex to Shem Pete, who recorded this version with Billy Pete and linguist James Kari in Fairbanks in 1985. *Shem Pete's Alaska 2003*:326-327. Excerpts of the story are provided here.

Utnuht'ana dek'isna shagela gga ts'in'e tsighel'unh tunuqeyghiłghel ch'u.
Those Ahtna women threw the little fish back in with its head facing upstream and [they said to it]

"*Nunkdach' ntukdach" nutitnash*
"You go back to your mother and father.

Nech' ch'ujeshi ghuda.
We might have saved ourselves [from starvation] by [eating] you.

Kitigi ghuda dghinłchek' beł dini," qyełni
You tell him that you are too small," they told it.

"Qech'u bedghinni da beghe nanidyaa da."
"You tell him that when you return to him."

Yet Utnuht'ana q'u hyech' qenash ch'u
They spoke to it there in the Ahtna language, and

Tunuqeyghiłghel ch'u yun'e qinughedlagh
They threw it back in the water, and it swam back up the lake.

Tatl'ah beł qi'uni ghinhdi little trout gga beł nuqelnek hnuq'u kadilagh.
When that little trout told that [giant] underwater creature [what they had said], it [a giant fish] swam downstream.

Qughilagh.
It swam up from the bottom.

Tsiłq'i yan q'u yet idu.
Only one creature stayed there.

Biłni badahdetnesh.
A noise was heard in the water

Ghu tatl'ah beł qi'uni ghini łuhtalghel.
That creature under the water was starting to move around.

Dghelay egh hnijaq'.
They [the girls] ran to the mountain.

Yet dghelay q'aghtgge ghu dałtun ch'u
That lake is between mountains, and

Łiq'a ghini qughilagh ch'u
then a [giant] fish swam up from below, and

ben q'estsiq' ch'dudilagh.
It swam out through the lake outlet.

Ghelugh k'enulq'eł ch'u
It floundered along the creek;

K'etnu yet niłtsatnetun ka'a t'qit' a.
Downstream the cliffs form a big canyon.

Yet denyi ghilagh.
It swam into that canyon.

Yeh hqugh nutidulnen ch'u chijuq.
The water level dropped there and it died.

Beq'estsiq' ghu kadilagh ghu yet ełnen hch'ataghilagi shughu
As it swam through the outlet, the water washed out the land, and

Łuq'u ełnen idlu qit'a all over Eklutna.
All over Eklutna [pieces of] all that land remained.

Idlughet yet ghuda h'iyi k'dilan.
That is why its name is 'By the Plural Objects.'

Ki ch'adach' ghu heł dgheshniy.
I will tell you a little more.

Yik'a qeyegh batahdałnen shida.
It [that giant fish] made it start to go dry.

Eklutna Lake batihdalnishi.
Eklutna Lake started to go dry.

K'chan yan bak'dilan.
Just grass is in there.

Ghinhdi tatl'ah beł qi'uni ghini elugh k'a bayahdist'ik.
The underwater creature has not appeared again since.

Henda q'u bayhtidut'ił.
It might show up, though (in Kari and Fall, 2003).

The Eklutna River emerges from glaciers high in the mountains of Southcentral Alaska, just northeast of Anchorage. The River winds through a narrow canyon, broadens as it passes the Native Village of Eklutna, and then empties into Knik Arm, then Cook Inlet, and finally the North Pacific. The Dena'ina name of the Village of Eklutna, *Idlughet,* and the Eklutna River, *Idlughetnu*, refer to the "plural objects" that were flung out of the canyon when the giant fish emerged.

On a rainy afternoon in August 2022, over freshly cut dried salmon from his smokehouse, Eklutna elder Lee Stephan explained that this village was a fish camp, at the mouth of a once-rich river full of salmon. Now, Stephan gets his fish elsewhere because hydropower projects have decimated the historic salmon runs of the Eklutna River. All five species of Pacific salmon still run in the Eklutna River, although in greatly reduced numbers (Leggett et al., 2021; Native Village of Eklutna, n.d.; Lamoreaux email communication, 2023). The customs and traditions of the Eklutna people followed-and still do follow today-the life cycle of the salmon (Booton, 2021b; Salmonfest Radio, 2022). As Eklutna elder Maria Coleman has stated, "The fish, the fish, it's in all our stories. Children, grandparents—everybody all working together—that unity. It's almost a binding agent for who we are" (Coleman, n.d.).

This paper focuses on the ways in which the Native Village of Eklutna and partners exemplify multifaceted tribal leadership in dam removal and river restoration (Fox et al., 2022). I center three factors that are underrepresented in both the current required Eklutna River studies, and in conventional restoration efforts generally: (1) the context of the Eklutna River as a Dena'ina place; (2) the egregious and ongoing Indigenous environmental injustice of appropriating the Eklutna River (see Gilio-Whitaker, 2019; Norgaard, 2019; Diver et al., 2022); and (3) the praxis of Dena'ina-led cultural, ecological, and socio-political efforts to find a balance of uses of this highly valued watershed.

Background

Eklutna: a Dena'ina place

The ambiguous fate of the giant fish in the opening narrative mirrors the potential of the Eklutna River, from within a Dena'ina worldview. Dena'ina histories recognize Eklutna as a place of crossroads, of trails running northeast up Knik Arm and into the Matanuska-Susitna Valley, northwest out to Knik and Wasilla, and south to the summer camps in the Anchorage area and up Turnagain Arm. According to Eklutna elder Lee Stephan, prior to Russian and American incursions into Dena'ina homelands, Dena'ina people lived within vast landscapes that supported families and villages who moved according to seasonal conditions and animal migrations. Stephan recalled an elder being asked how much land he used, in order to determine land claims. The elder indicated an area encompassing five million acres— all of the sites where he trapped, hunted, fished, gathered plant foods and medicines, and traveled between throughout the year. This elder was likely Bill Ezi, as Chandonnet (1979, p. 61–62) describes Ezi's 1945 Palmer Claim for approximately 60 square miles of his aboriginal land. As Stephan underscored, the original claim for five million acres was made by one family, not for the entire Tribe, so the Eklutna Dena'ina land base was, in fact, much larger. In 2022, President of the Native Village of Eklutna Aaron Leggett described the boundaries of the entire Dena'ina homelands as encompassing over 44,000 square miles in Southcentral Alaska, noting that Eklutna is one of nine Dena'ina villages presently located in Southcentral Alaska (Humans Outside, 2022, p. 12:29).

Efforts to colonize Alaska focused on land and water, as settlers created enclosures and extractive economies (see Bissett-Perea, 2021, p. 92) that disrupted Dena'ina cultural geographies. Dena'ina land and waterscapes are storied, living places imprinted with generations of place-based knowledge and relationships. Invading Russians and Americans brought disease, decimated villages, and claimed and exploited vast areas of Dena'ina homelands. Recognition of Dena'ina knowledge, responsibilities, and subsistence was limited to broad and toothless acknowledgment of Alaska Native land rights in the 1888 Organic Act, which provided no process for determining or protecting these rights. In 1914, Congress authorized development of a railroad from Seward to Fairbanks, which would cross Eklutna Dena'ina territory. Anchorage sprung up as a tent city for workers on the rail project (Cultural Resource Consultants, LLC, 2023, p. 3). Twenty years later, the railroad was followed by a highway to facilitate the movement of produce from the rich Matanuska Valley to the burgeoning market of Anchorage (Cultural Resource Consultants, LLC, 2023, p. 3). Both the highway and the railroad run right through the Native Village of Eklutna.

In the early 20th century, the government occasionally set aside small parcels of land for federal interventions in Dena'ina life. One of these was a boarding school in Eklutna—one of only three Alaska Native boarding schools in the vast territory of Alaska. The Eklutna Industrial School was established on 1,400 acres by the Bureau of Education in 1924 to house Alaska Native children orphaned by the virulent epidemics. As Dena'ina scholar Jessica Bissett-Perea explains, boarding schools were part of a larger strategy to dispossess Native Alaskans and dislocate them from their communities and homelands, thus enabling further federal and private resource extraction (Bissett-Perea, 2021). Children were sent to Eklutna from all over Alaska.[2] In 1936, the federal government expanded the school's area to 328,000 acres, as a placeholder for an Eklutna Indian Reserve.

The initial development of the Eklutna River began in 1923 when businessman Frank Reed received a preliminary permit to construct and operate power project #350 on the Eklutna River. In 1926, he applied for a full permit, there was no recorded opposition, and the Federal Power Commission found in 1928 that the project was well-suited for "water-power development and other beneficial uses," and would not "interfere or be inconsistent with the purpose" of any other use (2) and granted a 50-year license (Federal Power Commission, 1928, p. 2). Beneficial uses, as defined at the time, did not include culture, subsistence, or fish habitat.[3] The Commission's determination did not mention the Dena'ina people of the Native Village of Eklutna, who would be directly and significantly impacted by the decision to de-water their river. The Village was certainly known to the federal government, however, as the Dept. of the Interior had established the Eklutna Industrial School there 2 years before.

At Eklutna, American extractive and settler colonialism were enacted through damming the Eklutna River to fuel both the City of Anchorage and the Eklutna Industrial School. The School was an institution of colonial education targeting Alaska Native children who had either been forcibly removed from their families or orphaned due to settler-induced epidemics.[4] When the school was closed in 1945, the recognized Eklutna land base was vastly reduced from 328,000 acres to 7,000 acres and reduced again in 1961 to 1,819 acres by a U.S. Public Land Order (see Chandonnet, 1979, p. 64). In 1971, the Alaska Native Claims Settlement Act (ANCSA) affirmed that 92,160 acres would be awarded to the newly formed corporation, Eklutna Inc. However, it took many years for these claims to be perfected and for Eklutna, Inc. to gain access to and use of its land. Eklutna Inc. is currently the largest private landowner within the boundaries of the City of Anchorage (Eklutna Inc., 2022), giving it significant leverage in local and regional politics. An ongoing project led by Leggett and others is recognizing Anchorage as *Dena'ina Ełnena*, Dena'ina homeland, by installing Dena'ina place names throughout the City (Humans Outside, 2022). While the Eklutna Dena'ina people are a rising force in the life of Anchorage and Southcentral Alaska, Eklutna Dena'ina land ownership remains at a fraction of previous levels, and Eklutna Dena'ina specifically remain severely impacted by the de-watering of the Eklutna River.

2 According to Mike Alex's story in Chandonnet (1979, p. 39), some Eklutna children were not able to attend the School.

3 For a discussion of the importance of asserting tribally specific beneficial uses, see Diver et al. (2019).

4 The Native Village of Eklutna continues to work to address the legacy of the School, in part by creating a memorial to recognize the unmarked graves in the Eklutna Vocational School Cemetery (Eklutna Village News, 2022, p. 13).

In 1991, over 60 years after the initial private hydropower dam dewatered the Eklutna River, and exactly 40 years after the federal project expanded that impact, the U.S. Fish and Wildlife Service, the State of Alaska, the National Marine Fisheries Service, and the project owners (three hydroelectric companies) negotiated an agreement that required the owners to begin studying the impacts in 2022, leading to a mitigation plan by 2024, which would be implemented beginning in 2027 (McMillen Jacobs Associates, 2020). The Native Village of Eklutna was not a formal signatory to the agreement; according to one interviewee, "…no one in Eklutna knew it was happening…nobody reached out to the Village"—despite it being their River. Anchorage Assembly member Forrest Dunbar acknowledged this breach in a 2022 press release celebrating the Assembly's vote in favor of restoring the Eklutna River: "We want to do right by the native people of Eklutna who were left out of the 1991 agreement in a way that is frankly shameful, and I appreciate that they have been let back in in a heightened capacity, but not in the legally binding way they should have been in 1991" (Dunbar in Eklutna River Restoration Coalition, 2022, p. 2). Today, the Village is a member of the Technical Working Group overseeing the study process, and Village environmental staff are contributing significant data and analysis to the process.

This paper argues that the current deliberations informing the mitigation and management of the Eklutna River must foreground Dena'ina histories and ways of knowing in order to address the historical and ongoing injustices of de-watering a Dena'ina river. Such an approach can also support the needs of fisheries and wildlife and accommodate efficient hydroelectric production and drinking water provision. As articulated by former Eklutna Inc. CEO Curtis McQueen (Tlingit, adopted Eklutna Dena'ina), "Let's take the approach that all three things [hydropower, habitat, and drinking water] can happen. The Eklutna River needs water so fish can go up further. All of the uses can happen because [Eklutna Lake] is a natural lake" (McQueen, 2021). The solution lies in altering management and infrastructure to enable fish passage and allow sustained water flow.

Dena'ina Eklutna are not opposed to infrastructure; they are opposed to being left out of the process and experiencing disproportionate harms. Dena'ina Eklutna are involved in all aspects of the Eklutna watershed, from business to subsistence. According to McQueen, after the passage of the Alaska Native Claims Settlement Act in 1971, the utilities had to come to the Eklutna Corporation, the largest landowner in Anchorage, for permission to build power infrastructure across and within their lands. The Corporation adopted a "solution driven, balanced" approach to negotiating the rights of way, and now seek a reciprocal response from the utilities to put water back in their River— "It is the right thing to do after 90 years of that river being turned off" (McQueen, 2023). In a 2022 resolution, the Anchorage Assembly recognized the Eklutna Village and Corporation's "contributions to the development of the Municipality of Anchorage," specifically, "providing land for school sites, highways, railroads, powerlines, and rights-of-way," and affirmed strong support for restoring the Eklutna River (Anchorage Municipal Assembly, 2022, p. 2–3).

Across their for-profit and federally recognized tribal arms, Dena'ina of Eklutna advocate for cultural perpetuation in harmony with collaborative, regional economic development. The current required environmental mitigation process on the Eklutna system has the potential to lead the way nationally by demonstrating how a range of constituents, led by tribal entities, can find a balance of uses on limited water resources.

Methodology, positionality, and approach

As an Afro-Caribbean/multiracial scholar of Native Studies and Environmental Policy, I approach this work with a goal to center Indigenous epistemologies of place in a critical analysis of environmental policy and practice. This orientation strives toward an Indigenous methodology which privileges Indigenous concerns" (Tuhiwai Smith, 1999, p. 107). Further, following Denzin and Lincoln in *Indigenous and Decolonial Methodologies* I apply a:

> …collaborative social science research model…[that] directs scholars to take up moral projects that respect and reclaim indigenous cultural practices…In listening to the stories of indigenous storytellers, we learn new ways of being moral and political in the social world. We come together in a shared agenda, with a shared imagination [for example, for the free flow of the Eklutna] and a new language… (Denizin et al., 2008, p. 15).

As a non-Native scholar of color committed to restorative justice, I also draw on my own positionalities and experiences to create "spaces for multicultural conversations" including "stories of resistance, of struggle, [and] of hope" (Denizin et al., 2008, p. 6; Hazlewood et al., 2023). Drawing inspiration from Linda Tuhiwai Smith's landmark manifesto *Decolonizing Methodologies,* Native and Indigenous Studies' emphasis on accountability (see Denizin et al., 2008, p. 2), and conducting research that is "…[]relevant to modern, contemporary Indian life" (Cook-Lynn, 1997, p. 17), I apply relational social science methods of interview, ethnography, ethnohistory, and archival research.

I began research on the Eklutna restoration process by seeking permission from the Chairman of the Native Village of Eklutna to conduct interviews with Tribal members and engage in archival research. Once permission was granted, Environmental Management graduate student research assistant Katt Lundy and I refined the goals of archival research to identify and articulate the history of the dam construction and development on the Eklutna, and to gain an understanding of the role of River in the development of Anchorage and the Village of Eklutna, respectively. We focused on archives at University of Alaska, Anchorage, and the Anchorage Museum, and conducted online and then in-person archival acquisition and analysis. Archives helped us to understand the context of Eklutna development, and political, social, and economic relations at the time of infrastructure development on the Eklutna. We also conducted policy analysis through close reading of policy documents such as the 1991 agreement requiring study of fish and wildlife impacts of the Eklutna process, and review of frequently updated documents on eklutnahydro.com, the website devoted to the process of the 1991 agreement implementation,

and the Native Village of Eklutna Environmental Department, which conducts extensive ecological monitoring of the Eklutna River.[5]

Building on the archival research, we conducted a series of interviews with leaders in the Eklutna River restoration process at the Native Village of Eklutna, the Eklutna Corporation, The Conservation Fund, and Trout Unlimited. Most interviews involved both multiple in-person and remote (via phone or zoom) meetings. The questions were approved by both Chairman Leggett and the UC Davis Institutional Review Board (#1685223-1) and focused on the historical and ongoing nature of engagement with Eklutna River restoration, observed changes in the river system, challenges encountered, and goals for the restoration process. I also asked specific subject matter experts additional questions about Eklutna fisheries, Eklutna economic development, and Eklutna activism for homeland protection and restoration. Finally, I conducted two site visits to the Native Village of Eklutna and the Eklutna River, with a key visit being in September 2021 when the water release and the commemorative "Go With the Flow" event took place. These visits enabled participatory observation in community-building events surrounding the restoration of the Eklutna.

I would like to emphasize that some visits, such as with elder Lee Stephan, were conducted with attention to a praxis of visiting that "centers relationality and an ethic of care" (1) and enacts "..a relating that is imbued with accountability, vulnerability, and mutuality" (2) (Tuck et al., 2022). Indigenous theorizing of "visiting" emphasizes thoughtfully building or expanding relationships with community members. When I visited with Stephan at his home, he asked me for assistance with bringing salmon down from the rafters in his smokehouse. This action evoked visiting a relative and helping around the house. I felt the privilege of being invited in to be a small part of his salmon processing, even as I also climbed the ladder in the dark smokehouse with some trepidation and uncertainty. The methodology of visiting affirms that research is about building connections and being in relationality with other people and places; with Lee, for example, and with the Eklutna River itself. Scholars Cutcha Risling Baldy (Hupa) and Melanie Yazzie (Diné) frame this approach as radical relationality, an "…ontology of being-in-relation-to…keeping ourselves open to the possibility of making new relatives" (2018, p. 11).

This relation-building approach work does not end with the end of the study; it is about maintaining communication and contact, and continuing to support the work of community members as opportunities arise–perhaps through contributing to campaigns or writing letters of support, if asked—and/or finding other opportunities to visit and perhaps bring resources. I apply the methodology of visiting alongside that of bi-directional learning (Middleton et al., 2019), in which there is a respectful exchange of knowledge about a system or process—in this case about the development of the River and impacts on the village. With this paper, I aim to understand how environmental policy analysis might look different with explicit attention to a context of unjust development, and Indigenous epistemologies of place and relationality.

This work is also informed by several streams of literature that help to elucidate the context of contemporary dam removal and river restoration. First, recent work by Fox et al. (2022, p. 37) articulates the importance of dam removal as restorative environmental justice, offering examples of tribal participation in dam removals across the US. Indigenous political economy work by Curley (2023) and Indigenous political ecology work by Carroll (2015), respectively, engage with the intricacies of political, economic, social, and cultural factors that impact internal tribal environmental decision-making. Curley and Carroll's grounding in their respective Indigenous communities and nations offers a nuanced analysis of tribal environmental decision-making that affirms my work to show the complexity and multiple relationships Dena'ina Eklutna have to the Eklutna River. Finally, drawing on my enduring interest in Alaskan natural resource law and policy, this study also aims to contribute to the field of legal geography by analyzing the specific applications of federal Indian law and environmental law in Southcentral Alaska (see Cantor et al., 2020, p. 177).

Finally, my overall approach to study of the Eklutna is inspired by the Indigenous, feminist scholarship of Yazzie and Risling-Baldy (2018, p. 2), and the decolonial historical approach of William Bauer, respectively. Yazzie and Risling Baldy foreground the importance of understanding Indigenous relationality with water: "Water runs through our human veins and connects us to everything. The water that we drink is the water the salmon breathes, is the water the trees need, is the water where Bear bathes, is the water where the rocks settle. Many of our stories foreground relationships to water". This concept of relationality to water across time and space, alongside Bauer's un-settling of settler histories and geographies, shifts the analytical lens to Indigenous epistemologies that elucidate Indigenous perspectives on historical events and places. This shift effectively de-centers and dis-places settler narratives that attempt to describe and make meaning of historical processes.

This work is also influenced by Indigenous Environmental Justice scholar Gilio-Whitaker (2019), who powerfully elucidates the long duration of environmental injustice in Indigenous contexts, and sociologist Kari Norgaard, who centers the impacts of changes to tribal fisheries on community health and wellbeing (Norgaard, 2005, 2019). Finally, I draw on foundational Native American Studies orientations to conducting research in Indigenous communities, as articulated by Deloria (1991), (Cook-Lynn, 1997), Tuhiwai Smith (1999), Brewer et al. (2023) and others. As noted above, these scholars guide the ethics of my approach to center Indigenous concerns, perspectives, issues, and epistemologies, and conduct work that may be useful in Indigenous peoples in struggles for homeland, sovereignty, environmental health, and cultural resources protection.

As a non-Dena'ina scholar working in Dena'ina homelands, I acknowledge the limitations in my ability to understand Dena'ina Eklutna epistemologies. I foreground my contribution as a learner that takes these epistemologies seriously as a framework and foundation for understanding place and history. I am committed to bringing my interest in critical analysis of environmental policy to support contemporary Eklutna

5 Native Village of Eklutna, Land and Environment, Eklutna River, https://eklutna-nsn.gov/departments/land-and-environment/eklutna-river/.

work to restore and/or sustain environment and economy. The concept of "objectivity" in research has historically been a ruse for centering Western understandings of science and history. In this context, I seek to de-center Western understandings, and place Western environmental policy in dialogue with Eklutna understandings of homelands and visions for a healthy future.

Context: diverse Eklutna interests

The Eklutna River flows primarily through land owned by Eklutna Inc. and under management authority of the Alaska Department of Natural Resources.[6] Following the unprecedented removal of the lower dam by Eklutna entities and partners in 2018, there is one dam remaining on the Eklutna River, located just below the Eklutna Lake outlet. This dam stops Eklutna Lake water from flowing downriver; thus, the only water in the Eklutna River comes from lower tributaries like Thunderbird Creek. The Eklutna watershed has a smaller number of players than other river systems where dam removal and watershed restoration projects are under consideration. This relative simplicity makes Eklutna an ideal site to understand how players with seemingly opposing interests come to the table, negotiate, and leverage resources to obtain mutually beneficial outcomes. The players on the Eklutna include the hydropower interests (Municipality of Anchorage, 19%, Chugach Electric Association, 65%, and Matanuska Electric Association, 16%), the drinking water provider (Anchorage Water and Wastewater Utility), the Native corporations (Eklutna, Inc. village corporation, and Cook Inlet Regional Corporation), and the federally recognized Native Village of Eklutna. Additional players include the state government (Alaska Dept. of Natural Resources, which manages Chugach State Park, and Alaska Department of Fish and Game, which manages Eklutna Lake), the federal US Fish and Wildlife Service and National Marine Fisheries Service, anglers, recreationists, and environmental groups including The Conservation Fund, Trout Unlimited, and The Alaska Center.

Previous research on tribal leadership in dam removal and river restoration highlights the potential for restoring relationships and addressing deep environmental injustices (Norgaard, 2019; Fox et al., 2022). While the cultural relationships to water are recognized as foundational to any water advocacy, this paper also centers tribal experiences as conveners, business leaders, and landowners committed to finding mutually beneficial solutions for multiple partners. Eklutna Dena'ina are represented both by a federally recognized tribe [the Native Village of Eklutna (NVE)], and a private Alaska Native corporation (Eklutna, Inc). The NVE is conducting intensive environmental monitoring to support river restoration, sharing cultural information through oral histories about relationships to the Eklutna River, and convening the Eklutna River Restoration Coalition. Eklutna Inc. mobilized its construction enterprise to remove the lower dam in a partnership with The Conservation Fund, a national non-profit organization, and leverages its position as a significant landowner to advocate for resource sharing with other large regional business entities, including the utilities that own and operate the Eklutna hydroelectric project.

The development of the Eklutna river

The history of the Eklutna hydroelectric and water conveyance projects typifies patterns in Alaskan, and broader American, colonial development and resistance. On June 10, 1920, Congress passed 41 Stat. 1063, the Federal Water Power Act, empowering the Federal Power Commission to license the construction of dams, reservoirs, powerhouses, and other hydropower infrastructure on navigable waters and within public lands and Indian reservations. This Act enabled the seizure of tribal lands, especially from non-federally recognized tribes and those without land bases.[7]

Eklutna land rights and relationships were not included in the federal deliberations over Reed's 1923 application to construct a hydropower dam on the Eklutna River. The USFS District Forester, located in Juneau, Alaska, was designated as the entity to review and approve specific plans for electric generation (9). To qualify for the license, Reed had to show compliance with the laws of the Territory of Alaska, as required in Section 9, Subsection b of the Federal Power Act. Among the terms of the license, Reed's project could not impact other parties with permits to Eklutna River water (Article 14: 10). While the Native Village of Eklutna clearly depended upon the River, it was not formally recognized as a Tribe at the time of Reed's permit application. Though Reed was operating on traditional Eklutna Dena'ina land, he never asked for nor received permission from Eklutna Dena'ina, whose land rights would not be recognized until 1971, nearly 50 years later. Once Reed's license was approved, he was required to pay the United States for use of the lands annually based upon the power capacity of the Eklutna project, which was originally estimated as 800 horsepower (Article 21: 12). Not only did Eklutna people lose their River, but they were also denied any revenue from hydropower generation on their River.

It is also important to note that Reed's hydropower project, though remote, was of broad interest to business developers throughout the American West. The early decades of the 20th century were a heyday of hydropower projects to support emerging cities, including San Francisco. Reed retained a San Francisco

6 The North Anchorage Land Agreement (NALA), (p. 131, 5.7.1.2), "gave the state management authority in perpetuity to 27,000 acres of Eklutna, Inc. owned lands within the park boundary in exchange for sharing in the military development lands in the future. These lands are to be managed as part of the park and in the same manner as other park lands are managed)." See Alaska Department of Natural Resources Division of Parks and Outdoor Recreation (2016). The North Anchorage Land Agreement is based in the Alaska Natural Interest Lands Conservation Act (ANILCA), and attempts to resolve a land dispute between Eklutna, Inc., the State of Alaska, and the City of Anchorage. A long-term agreement, the NALA establishes that if/when military land is retired, it will be shared by the [name], and lands owned by Eklutna Inc. In exchange, 27,000 acres of Eklunta Inc. lands within Chugach National Park are to be managed by DPOR in perpetuity (Alaska Department of Natural Resources Division of Parks and Outdoor Recreation, 2016, p. 32, 67).

7 See Middleton Manning (2018), for further discussion of FWPA impacts.

attorney to represent him to the Federal Power Commission on all matters pertaining to the Eklutna Project.[8] The Lower Eklutna Dam was completed in 1929 by Reed's company, Anchorage Light and Power, to provide electricity to the city of Anchorage (Peterson, 2020). As The Conservation Fund's Brad Meiklejohn explained in a 2021 interview, "The project was built by a local developer who privatized the river. Alaska was a frontier; you could do what you wanted. Anchorage didn't have a power supply, [the developer] proposed building [the project] and selling power to the city, no permits or questions" (9/7/21).

As the population of Anchorage grew during World War II, the demand for power increased, leading to the expansion of the hydropower facilities at Eklutna. Reed sold the project to the City of Anchorage in 1943 (Federal Power Commission, 1943). The U.S. Bureau of Reclamation developed plans in the late 1940s that would divert all outflow from Eklutna Lake through a new hydropower facility to produce more power for the Municipality Anchorage. The BoR's Eklutna Project is described as "the first major development of the BoR outside of the continental U.S." a monument to attempted colonialism within Eklutna Dena'ina homelands (U. S. Department of the Interior and U. S. Bureau of Reclamation, 1958). In the consultation process, the Office of Indian Affairs, which administered the Eklutna Indian Reserve that included the Native Village of Eklutna, reported that there would be no conflict with the purpose and operation of the Reserve. However, as stated in the 1991 Fish and Wildlife Agreement Implementation, there is no evidence that any people from the Village were consulted (3). In 1950, the federal Eklutna project was authorized by PL 268 to support Territorial economic and industrial development, and to supply nearby defense installations (Eklutna Project Act, 1950). In 1953, the Bureau of Reclamation (BoR) purchased the original Eklutna hydroelectric project facilities from the City of Anchorage for $1.84 million. The BoR built new hydropower infrastructure on the Eklutna River that rendered the lower dam obsolete—a "deadbeat dam," according to Native Village of Eklutna Village Chairman Aaron Leggett (Salmonfest Radio, 2022).

Construction began on the BoR project in April 1951 and included a larger earthen fill dam at the outlet of Eklutna Lake, and an intake structure at the Lake bottom conveying water through a 4.5-mile tunnel through Goat Mountain to a facility on the Glenn Highway, with a discharge into the Knik River (see Figure 1). After several repairs due to flooding and earthquakes (see Cultural Resource Consultants, LLC, 2023, p. 4–7), the storage dam ran 815′ long and 51′ high and stopped the outflow of Eklutna Lake into the Eklutna River (Alaska Department of Natural Resources Division of Parks and Outdoor Recreation, 2016: 27), except during significant rain events, when overflow ran into the spillway.[9] In 1967, the Bureau of Reclamation transferred the operation and maintenance of the project to the newly formed federal Alaska Power Administration. The APA was a short-lived agency–it was dissolved ten years later and incorporated into the Department of Energy.

The 1950s—1970s were also the height of the struggle to define Alaska Native land title following statehood. While the 1888 Organic Act generally recognized Alaska Native title, the lack of specific recognition led to state, federal, and private entities claiming Native lands. Aboriginal title was explicitly disregarded by the courts (Tee-Hit-Ton, 1955) and Alaska Native title was not addressed until the pressure to implement the Trans Alaska pipeline in the 1960s led to the Alaska Native Claims Settlement Act (ANCSA) in 1971. ANCSA established the framework of Alaska Native for-profit corporations, leading to the establishment of the village corporation Eklutna Inc. in 1972, in which Eklutna Dena'ina are shareholders, as well as the larger regional Cook Regional Inlet Corporation (CIRI). The Native Village of Eklutna organized in 1961 and became federally recognized as a sovereign tribal government in 1982.

The newly formed Alaska Native corporations had to navigate existing infrastructure projects and agreements within their homelands as they made their land selections. Though nearly all of the land in the Eklutna watershed is owned by Eklutna Inc., there are multiple management agreements that pertain to Eklutna Lake and the Eklutna River watershed. Eklutna Lake is managed as part of Chugach State Park by the Division of Parks and Outdoor Recreation (DPOR) through an agreement with the Division of Mining, Land and Water (DMLW).[10] Chugach State Park was established partially to protect and conserve the lands that provide drinking water to the municipality of Anchorage (Alaska Department of Natural Resources Division of Parks and Outdoor Recreation, 2016: 34, 57). The entire watershed is co-managed by DPOR and Anchorage Water and Wastewater Utility (AWWU) in a cooperative agreement to safeguard water quality (67).

Eklutna Lake water is critical to the City of Anchorage, providing 93% of Anchorage's domestic water supply (Alaska Department of Natural Resources Division of Parks and Outdoor Recreation, 2016). Studies dating back to 1973 (Tryck et al., 1973) worked to identify a reliable drinking water source for the City. By the early 1980s, the options narrowed to Eklutna because of its proximity, cost-effectiveness, and relative ease of permitting. In 1984, the Anchorage Water and Wastewater Utility (AWWU) outlined plans to divert water from the pipeline running from Eklutna Lake to the powerplant, route it through a treatment plant above the Eklutna River drainage and pipe it to Anchorage (Municipality of Anchorage Water Wastewater Utility, 1984, p. 9). The environmental impacts were identified as "minimal," and other concerns were limited to cost of construction and the reduction of "power-generating water" to the hydroelectric project (Municipality of Anchorage Water Wastewater Utility, 1984, p. 5). These costs were clearly delineated in a 1984 signed agreement between the Municipality of Anchorage and the U.S. DOE Alaska Power Administration, which outlined a plan to calculate revenue lost from the drinking water diversion, and compensation from the Municipality to the Utility (Agreement for Public Water Supply and

8 Frank Reed HMC 0206 Box 4 Folder 20. UAA Archives.

9 According to Chairman Leggett, this has happened ~13 times since the 1960s (Leggett, 2021a).

10 Pursuant to Alaska Division of Lands 231303, see 2016 Chugach State Park Management Plan: 65.

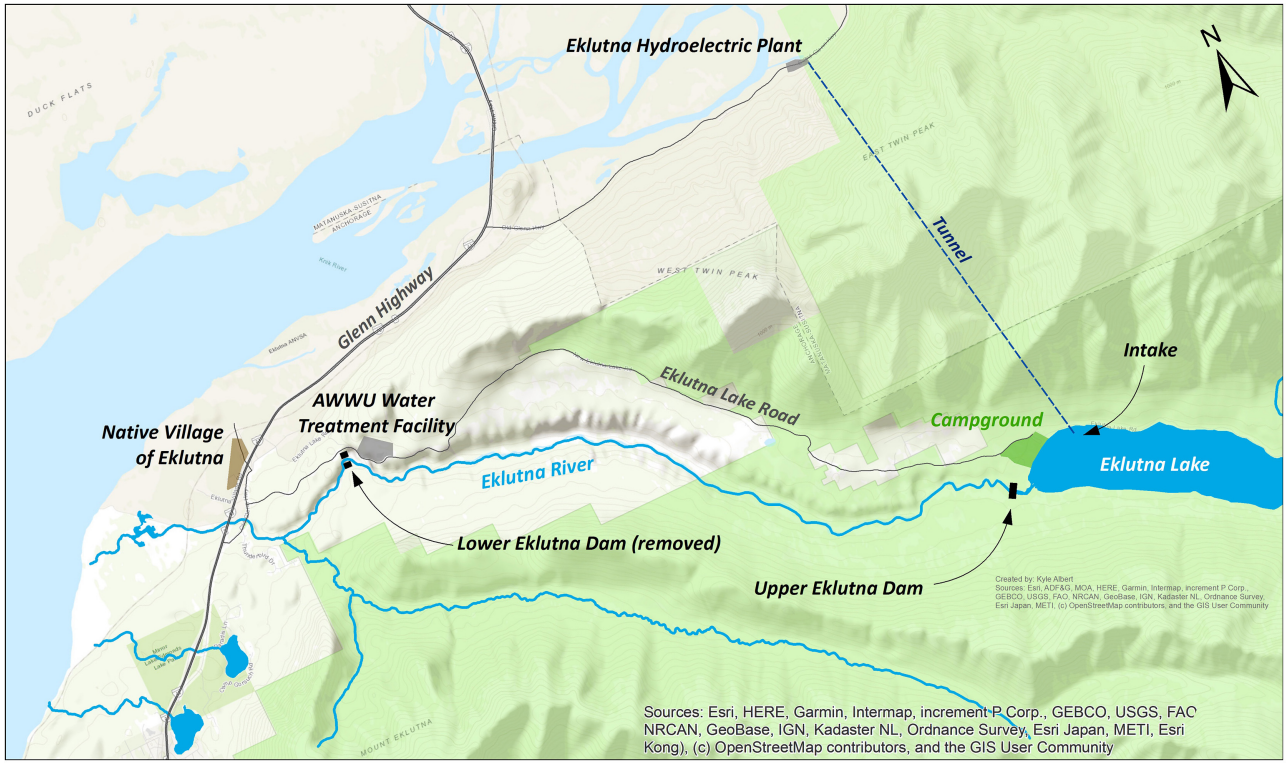

FIGURE 1
The Eklutna watershed and hydroelectric project. Cartography by Kyle Albert, map provided by Eric Booton, Trout Unlimited.

Energy Generation from Eklutna Lake, Alaska, 1984). The Native Village of Eklutna, which sits at the foot of the short Eklutna system, and whose traditional area encompasses all of the power and drinking water infrastructure in question, was not party to these agreements or studies. Likewise, although Eklutna Inc. owns nearly the entire Eklutna watershed, it receives no financial benefit from the extensive development that has occurred over the past century.

Today, 90% of the water diverted from Eklutna Lake goes to power generation and the remaining 10% goes to Anchorage (Herz, 2019), but that 10% provides nearly all of Anchorage's domestic water supply (Alaska Department of Natural Resources Division of Parks and Outdoor Recreation, 2016). Despite the relatively small amount of hydropower production [40 mw of generation capacity or 130,000 kwh of electricity per year (Anchorage Hydropower Utility, 2021, p. 5)], hydropower is a high-value use of the system because of its low cost of production. In the 1980s, the federal government examined opportunities to move "small, isolated hydroelectric projects" into state and private ownership (Alaska Power Administration Sale Act, 1995). In 1987, three entities—Municipal Light and Power, Chugach Electric Association, and Matanuska Electric Association—put forth a proposal to purchase the Eklutna hydroelectric project. The purchase agreement for approximately $7 million[11] was executed in 1989, required a legislative proposal to authorize, and was not finalized until 1997 (Alaska Power Administration, 1992; Alaska Power Administration Sale Act, 1995). In the process of review of the legislative proposal, for the first time, hydropower impacts on fish and wildlife were considered. Prior to this time, fish and wildlife were not considered because they had already been impacted by the initial 1929 project (1991 Agreement: 5). In this way, the damage to people, fish, and the land had been grandfathered in for over 60 years.

Concerns over project impacts on fish and wildlife led to a formal 1991 agreement between the State of Alaska, the three utilities, or "Purchasers" of the project, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to identify and mitigate damages to fish and wildlife impacted by the projects. The Agreement states:

> The Purchasers agree to fund studies to examine, and quantify, if possible, the impacts to fish and wildlife from the Eklutna and Snettisham Projects. The studies will also examine and develop proposals for the protection, mitigation, and enhancement of fish and wildlife affected by such hydroelectric development. This examination shall consider the impact of fish and wildlife measures on electric rate payers, municipal water utilities, recreational users, and adjacent land use, as well as available means to mitigate these impacts.

As noted, this agreement is not about justice; it is not about addressing the seizure and manipulation of a Dena'ina Eklutna River, the impacts on the community over time, and Dena'ina understandings of this place and their relationship with it. Further, the Native Village of Eklutna, which was organized as early as

11 This amount is estimated on the Divestiture Summary Report (Alaska Power Administration, 1992), which lists decreasing purchase prices for 1992 and 1993, and offers a formula for calculating the purchase price in subsequent years (pp. 24–25).

1961 but only recognized by the federal government as a Tribe in 1982 (Botelho, 2007, p. 163) was not included as a signatory to the 1991 agreement. The agreement also has a long timeline—requiring consultation 25 years after the 1997 sale, a Governor-approved fish and wildlife program by 2024, implementation of a fish and wildlife program in 2027, and completion of a program by 2032. "The most significant challenge is that those who hold the keys, don't have to do anything yet," said Stephan. "[They] want to slowly do mitigation, but we need to move faster" (9/18/21).

Stephan, who grew up in Eklutna and is also the former Tribal Chairman and Chairman of the Eklutna Corporation, remembers other struggles over land. In 1957, before the Village was recognized, the US Army established the Eklutna Army Site behind the Eklutna Village, and used it for storage until 1971, resulting in soil and water contamination (AECOM Technical Services, Inc, 2017). Since 2005, the Native Village of Eklutna has been removing debris and remediating the site (Lamoreaux, 2015). Since at least sometime in the 1940s, the federal government and later the state and municipal government and private contractors quarried rock from one the defining features of Eklutna, the "knobs" or "plural objects" at the base of the watershed for which the village and the river are named. In 1997, the Native Village of Eklutna filed suit against the City of Anchorage to stop the ongoing quarrying of this culturally important place without their consent. According to Stephan, the knobs were visually damaged, constituting an attack on the very identity of the Village. In 2000, in *Native Village of Eklutna v. Board of Adjustment,* the court determined that "the Municipality had ignored evidence that the mining operation would destroy one of the two hills for which the Village of Eklutna was named."[12] In a series of subsequent cases, the Village challenged the railroad to stop quarrying the site, and was eventually successful with federal and Eklutna Corporation support.

Each of these struggles has been in response to 20th century decisions made about Eklutna Dena'ina homeland without Eklutna Dena'ina consent. Increasingly, the strength of Eklutna institutions, both the Corporation and the Tribal government, and the passion of allies who recognize the injustices the people are facing, have resulted in victories—land back, dam removals, and remediation. One important ally has been The Conservation Fund. The parties began working together on a 58-acre parcel in the Village, which a settler had obtained in the early 1900s and then defaulted on a loan, shifting the property to the National Bank of Alaska. According to McQueen, the National Bank used it for picnics and corporate events until it was bought out by Wells Fargo, which began to survey the property for sale. The Eklutna Corporation learned about the proposed sale but was not able to pay the $3 million asking price. Meiklejohn recognized both the conservation and cultural values of the site and helped to raise the funds to purchase the property, place a conservation easement on it, and return it to the Tribe in 2014 (Eklutna, 2014; Meiklejohn, 2021b). This helped to solidify the partnership between the Tribe and The Conservation Fund. As Meiklejohn explained:

> …we brokered a deal and we donated [the land] back to the community. It was very powerful. Then, we pivoted to discussing the dam, which had been sore spot for the community for a long time; the story of what happened to them was the story of what happened to the river (Brad 9/2021).

The collaboration between Dena'ina Eklutna and The Conservation Fund was foundational to raising the financial, political, and social capital to eventually remove the lower dam in 2018. One of the most significant issues in considering whether fish passage might be restored in the Eklutna River was the continuing presence of the Lower Eklutna dam built as part of Reed's project in the 1920s. The Lower Eklutna dam was decommissioned in 1955 when it was rendered obsolete by the diversion of water to the federal hydropower project, but it remained a major barrier to fish passage. Located in a 400′ deep canyon, this 60′ tall concrete structure completely blocked the canyon and was recognized as a "significant" hazard by the Association of Dam Safety Officials (Knox News, 2018; Meiklejohn, 2021a,b).

River restoration: interventions and outcomes

Removing the lower dam

In the years following the passage of ANCSA, the growing corporation of Eklutna, Inc. selected lands throughout the Eklutna watershed. Infrastructure from the Lower Eklutna hydropower project came with the land. Native Village of Eklutna Environmental Director Marc Lamoreaux referred to the Lower Eklutna dam as an "orphan dam" that fell into Eklutna Inc.'s ownership in 1985-86 when the lands around the dam on both sides of the River were transferred pursuant to ANCSA. By the late 20th century, this dam was considered high risk because it was unmaintained and located above a railroad corridor. The dam had been effectively abandoned when the new BoR facilities were constructed in the 1950s. Given that the dam was under federal ownership when it was abandoned, questions remain as to whether the Bureau of Reclamation had any liability for the remaining infrastructure, which it transferred to Eklutna, Inc. during the land selection process.

Given that the lower dam was considered under the ownership of Eklutna, Inc., the corporation and partners were able to raise the funds to remove the dam, an incredible feat that was accomplished ahead of schedule with the partnership of The Conservation Fund, the Resources Legacy Fund's Open Rivers Fund, Trout Unlimited, and other funders and partners. As Native Village of Eklutna Land and Environment Director Marc Lamoreaux reflected, "environmental organizations and tribal interests coincided with dam removal and river restoration" (8/4/21). According to Meiklejohn, "I have watched dam removals take decades, years…I was so happy to see the enthusiasm, cooperation and getting things done. We set an aggressive timetable of 5 years, and it ended up happening faster and under budget" (9/7/21).

Indeed, in 2018, after 4 years of collaboration, planning, and fundraising, partners completed the removal of the Lower Eklutna Dam. This work was supported by a vision of Eklutna Dena'ina people for a restored river. As Stephan explained, "We inherited

12 995 P.2d 641-643 https://casetext.com/case/eklutna-v-board-of-adjustment.

this, we don't have to keep it, we can fix it" (9/18/21). The $7.5 million dam removal effort required the largest crane in Alaska to lower equipment and personnel over 300 feet down into the river canyon. According to former Eklutna Inc CEO McQueen, it was particularly meaningful that Eklutna Inc.'s construction crew, which included Dena'ina personnel, performed the daring and demanding tasks of dam demolition and removal.[13] Despite mudslides and other exigencies, there were no significant injuries. As Meiklejohn explained, Dena'ina leadership was central to the process, "…it made so much sense to have them be the ones taking the dam down…they were motivated, it was their river…they got it done timely and under budget" (9/7/21).

The lower dam removal represents a significant collaboration between the Tribe, Native Village of Eklutna, the corporation, Eklutna Inc., and conservationists. As a for-profit entity, conservation is feasible for Eklutna, Inc. when it makes financial and broader business sense. "Eklutna Inc. may have primary motivation of turning profits, but they do also have ethic of protecting and enhancing natural and subsistence resources," Lamoreaux explained (8/4/21). Not only did removing the dam and restoring the River support the perpetuation of Eklutna Dena'ina lifeways, but it also addressed a safety issue of an abandoned dam, backfilled with sediment, above a transportation corridor [USACE U.S. (Army Corps of Engineers), 2004, p. 4]. The dam removal paved the way for a full river restoration to restore a five-species wild salmon fishery just 30 min from Anchorage. The economic and cultural value of a restored wild sockeye salmon fishery close to Alaska's population center is an important point of leverage in increasing public support for the Eklutna River restoration project.

FIGURE 2
Water flowing through the Eklutna River Canyon in a stretch de-watered by hydroelectric projects since 1929 (photo by author, 9/17/2021).

Response of the river

The removal of the Lower Eklutna dam accelerated efforts to restore the Eklutna River. In September 2021, for the first time in 89 years, water flowed from Eklutna Lake to Knik Arm (Figure 2). On our first visit to the Eklutna, Lundy and I stood on a shaky metal platform perched on the edge of the 400-foot Eklutna River canyon, watching dark gray layers of silt fold into the racing water in the narrow Eklutna River channel. The sound of the water, the towering cliffs on either side, and the lush boreal forest were all remarkable, but the experience was most significant because the water was flowing in a stretch of River that had been de-watered by hydroelectric and water supply projects since 1929. When I heard the story of the great fish, I reflected back on that moment, re-imagining the movement of water as the awakening of the fish, floundering between the imposing cliffs.

In the Fall 2021 Eklutna Village newspaper, Native Village of Eklutna President Aaron Leggett described the significance of the water release:

> ...[A] landmark event in our tribe's history is the releasing of water down the entire Eklutna River, this has not happened since 1929 and is [a] massive achievement for [the] Tribe and [reflects] the hard work over several decades by past leadership and staff. This is truly something that our entire Tribe can celebrate and we will continue to push for more water to flow down the river and hopefully restore some of the salmon run to the Eklutna River (Leggett, 2021b).[14]

The September 2021 water release was one of the first major aspects of implementing the studies associated with the 1991 agreement. As Meiklejohn explained:

> …it's exciting to see water coming down the river…hopefully people will see the absurdity of a salmon river with no water in it…People thought we were crazy when we first took this on— people have been talking about taking the dam down for decades, but why take it down when the river will be dry? We have to take first step, we have to take risks…take the next step and then the next step, keep going, so far so good (9/7/21).

13 Eklutna, Inc. has an area of their website dedicated to documentation of the dam removal process, see https://www.eklutnainc.com/eklutna-dam-restoration/.

14 Footage of the water release was recorded by Native Village of Eklutna Land and Environment Department staff, "Eklutna River Water Release 9/13/2021."

The removal of the Lower Dam eliminated the first barrier in the system. As Meiklejohn explains, the second barrier is the Upper Dam, "an earthen berm whose only function is to increase Lake water storage for hydropower production. The Upper Dam does not impound Eklutna Lake and could be easily removed when compared to the complex and expensive process of removing the Lower Dam. In fact, removing the Upper Dam may be the most cost-effective method to restore the Eklutna River and remedy historic injustices." However, the power utilities have resisted removing the Upper Dam. Indeed, the "Eklutna Fish Passage Alternatives" preliminary engineering assessment prepared for the November 2022 Aquatics TWG meeting lists returning to a natural river system as "not feasible" (McMillen Jacobs Associates, 2022, p. 4). The four other alternatives included a trap and haul system and three types of fish ladders—with gravity flow and volitional passage, with multiple ladder exits and mechanized volitional passage, and a final option with a pumped water supply and slide.

In their comments in response to the assessment, the US Fish and Wildlife Service challenged the elimination of the alternative of restoring the natural river system:

> …we are interested in exploring what some natural channel options could look like, and what the costs and benefits of those options would be. For upstream fish passage some scenarios could include dam removal, a constructed natural bypass channel…We would like to see more options based on fish passage and biological factors such as seasonal migration, timing, and other fish and aquatic habitat needs (Mahara 11/22/22).

In their comments submitted the following day, Carrie Brophil and Lamoreaux of NVE Land and Environment Department articulate support for USFWS suggestions and specifically quote an April 2022 Resolution issued by the Native Village of Eklutna, entitled *Łiq'a nagh qinqtudeł*–"We are hopeful the salmon will return to us":

> On behalf of Native Village of Eklutna people, the Traditional Tribal Council supports restoration of Eklutna River and Lake salmon habitat. This includes (1) continuous flow in the river below the lake sufficient to support thriving salmon populations, with intermittent higher, habitat maintenance and re-creation flows, (2) salmon passage between Eklutna River and Lake, and (3) moderation of Eklutna Lake level variability, at levels sufficient to facilitate sockeye spawning."

NVE Land and Environment staff have long recommended modifications to the upper dam to allow permanent water releases and fish passage and management of Lake levels to protect spawning habitat along the shoreline (Native Village of Eklutna, 2022a). As a 2022 study by the Village entitled "Eklutna Lake and Tributaries Salmon Habitat," states that "Spawning king and silver salmon can be imagined with restored passage at the lake dam" (Native Village of Eklutna, 2022c, p. 9).

Between NVE staff and the consultants retained by the hydropower companies, the Eklutna River is monitored closely. According to Brophil, since the release, "…the River has shifted channels, [there are] a lot of deep pools, good sediment moved down…from behind the old dam site [and] from alluvial fans further in canyon" (Interview, 8/2022). These sediment deposits increased fisheries habitat (Beadle and Robillard, 2022). The pools provide important rearing habitat (Kleinschmidt Associates, 2023b, p. 15). Eric Booton (Trout Unlimited) reflected on his observations during a day of fish surveys along the Eklutna with NVE Land and Environment biologist Kyle Robillard:

> …as we worked our way upriver, numerous gravel bars and river features leaped out to me as fresh, newly created. Flowing water isn't just critical to the health of fisheries, flowing waters also help transport sediment necessary to maintain river substrate and habitat health. The flow of sediment downstream on the Eklutna River has been cutoff since the construction of the lower dam in 1929, and the river downstream remains sediment starved, illuminating the recent deposits, many of which were still settling…. (Booton, 2021a).

Adult and juvenile coho went further upstream in the Eklutna following the 2018 dam removal and the September 2021 brief water release. This was a welcome sight for Robillard and Booton. As Booton continued in his December 2021 article for the Hydropower Reform Coalition, "The fish are there, and they are ready, and with water returned and fish passage restored, a bright future is possible for Eklutna River salmon" (Booton, 2021a).

The NVE and partners advocated unsuccessfully for additional water releases in 2022, limiting the amount of data that could be gathered about the changes in salmon habitat. In their 3/11/22 comments on the *Eklutna Hydroelectric Project 1881 Fish and Wildlife Agreement Implementation Year 2 Study Plans, Draft February 2022,* the NVE asked, "Wouldn't 2 years of data be better than one now that the initial debris have been flushed?" (Native Village of Eklutna, 2022b, p. 1).

The Year 1 Fish Species Composition and Distribution Study (Thompson and Trim, 2022, p. 10) and the studies by NVE Land and Environment staff (Native Village of Eklutna, 2022c, p. 6) both document a population of Dolly Varden and kokanee salmon in Eklutna Lake. Landlocked kokanee salmon are likely a remnant population of red salmon that used to move up from Knik Arm to the Lake. NVE's surveys of the Lake have found Dolly Varden that are just 4.5–6.5 inches long. According to Lamoreaux, "if they could go to ocean, they would come back normal size" (8/2022). NVE staff and partners are hoping that some of these fish may have made it down the River during the 2021 water release, but they will have to wait on the salmon's life cycle–4–5 years—to see if these fish come back.

The NVE Land and Environment staff and the consulting firms are conducting habitat characterization above the Lake, surveying channels for their potential for salmon spawning habitat. According to Brophil, they are finding good habitat in the upper system, despite the lack of connection between the Lake and the lower river

for 80 years. So far, the results of NVE's upper watershed surveys support the contention that, if fish passage were established, the fish would have a place to go upstream. However, studies by the consulting environmental firms were more conservative in their assessment of spawning sites (Kleinschmidt Associates, 2022a,b). Additional studies are informing how much water is needed to cover up the sockeye spawning beds so they won't dry out when the water levels are adjusted. "For the salmon, it is crucial to make sure we have enough water to keep [the River] flowing through the channel. More pools mean more places to overwinter," explained Brophil (8/22). The USFWS is advocating for full inclusion of NVE study results in the formal review process (Mahara 11/22/22). USFWS also called for attention to the current condition of the Lake and River as heavily impacted by manipulation for hydropower and drinking water production: "We would like to see more analysis on the impacts that the dam and fluctuating lake levels have had on the Eklutna Lake habitat and nutrients" (Mahara 11/22/22).

In June 2023, the Final report of the Instream Flow Study consolidated information on the relationship between flow levels, fish habitat, and fish life cycles in the Eklutna and side channels from just below the upper dam to the railroad bridge (approximately 10 miles). Consultants focused on identifying a flow regime that would increase habitat for Chinook, Coho, and Sockeye salmon at critical life stages. Year 1 (2021) involved a series of field-based measurements including depth, sediment transport, and velocity during high-, mid-, and low-flows during the 24-day release period, and Year 2 (2022) involved analysis and modeling of the data. The study also examined a series of four options for flow release locations and levels. Option A would release water from the spill gate below the upper dam, adding water to the entire length of the River. Option B would release water from the water utility portal 6,000 feet below the spill gate, leaving the upper part of the River below the gate dry. Option C would release water from a lower water utility drainage valve, leaving the upper four miles of the River dry (Kleinschmidt Associates, 2023b, p. 36–37).

The optimal timing and amount of the releases from each of these points was estimated based on salmon life stages and associated habitat needs (Kleinschmidt Associates, 2023b, p. 37–39). Salmon survival was found to be most constrained by water depth at potential barriers along the river corridor. Consequently, scientists worked to identify minimum flows and timing of flows to facilitate fish passage, and developed associated metrics of the most significant increase in habitat for Chinook and Coho salmon. The highest of these was 50 cfs (Kleinschmidt Associates, 2023b, p. 59–60). The Native Village of Eklutna is advocating for a minimum flow of 65 cfs in winter, 350 cfs in summer, and a 700 cfs channel maintenance flow (NVE 7/24/23) (Native Village of Eklutna, 2023a). The consultants' own In Stream Flow study concludes that "…habitat gains were achieved when water was added to the river downstream from Eklutna dam (all three flow release options, A, B, and C.) However, the amount of habitat gained varied with location and was greatest under Option A…" when water was released into the entire length of the River (Kleinschmidt Associates, 2023b, p. 54).

In March 2023, the consultants released the Year 2 study report on Eklutna Lake Aquatic Habitat and Fish Utilization. This study focuses on quantifying impacts from the project on fish and wildlife and developing "protection, mitigation, and enhancement (PME)" measures to offset these impacts in the Lake. Eklutna Lake is a stunning natural water body fed by Eklutna Creek, running off of the Eklutna glacier, which towers over the eastern end of the Lake. The natural elevation is 850 feet, but it is artificially raised to up to 871 feet by the regulation of the dam at the western end. The Lake is large at 3,420 acres surface area and has over 15 miles of shoreline. The study analyzes fish habitat, particularly for spawning in lakeshore gravels and in tributaries flowing into the Lake. Information from Eklutna elders describe a Sockeye run into Eklutna Lake prior to the hydropower projects, but other agency studies have questioned whether or not the Lake could support salmon spawning (Kleinschmidt Associates, 2023a, p. 4). Surveys of shoreline gravels and tributaries identified substantial potential spawning habitat for salmonids (Kleinschmidt Associates, 2023a, p. 22–31), and spawning kokanee and Dolly Varden were even observed in 2022 (31). Study authors also acknowledged that they may have missed some deeper water spawning habitat because of the high lake elevation (42)—a function of hydropower operations.

Also in March 2023, the consultants released the year 2 Fish Species Composition and Distribution study report. The Anadromous Waters Catalog identifies the Eklutna River as habitat for five Pacific salmon species (Kleinschmidt Associates, 2023a, p. 1). Once the lower dam was removed in 2018, salmonids have been observed venturing above the largest tributary (Thunderbird Creek), trying to get upstream to Eklutna Lake. Until sustained water releases from the upper dam and fish passage to the Lake are established, the fish will not be able to travel further upstream. According to the consultants, who sampled fish along the River, "Species richness decreased with distance upstream under the flow conditions…" (Kleinschmidt Associates, 2023a, p. 14). Chinook and Coho were 80% of the captured samples in the lower reach, but decreased to zero above Thunderbird Creek (15). According to the Native Village of Eklutna, Official Position Regarding the Eklutna Hydroelectric Dam, "…salmon need sufficient water released continuously downriver from Eklutna Lake…" in order to get upstream to spawn.

On July 12, 2023, consultants with McMillen presented a fourth Alternatives Analysis, examining preferred alternatives from six stakeholders (Native Village of Eklutna, US Fish and Wildlife Service, The Conservation Fund, National Marine Fisheries Service, Alaska Dept. of Fish and Game, Hydro Project Owners, and Alaska Dept. of Natural Resources—State Parks). The Native Village of Eklutna and The Conservation Fund both supported a replacement dam, infrastructure improvements, and fish passage. NMFS and USFS also supported a replacement dam as a preferred alternative. The Hydro Project Owners, ADFG, and ADNR supported no passage, but acknowledged the need for infrastructure improvements. All alternatives maintain the level of water available for drinking water.

Following the May 2023 Eklutna Feasibility Study, which analyzed 18 alternatives to addressing instream flow, fish passage, and habitat, concerns were raised about the cost of replacing or significantly modifying the dam. Concerns were also articulated about the potential water quality impacts of allowing fish passage

into the Lake, although there are already landlocked Kokanee in the lake. Concerns were also raised about the impacts on the cost of power, although only 5–6% of Southcentral Alaska's power is currently generated by the system (Alaska Power Administration, 1992; DeMarban, 2023: 1). Simultaneously, the analysis recognized the significant benefits to fish and wildlife of allowing flow and fish passage. There will be one more Alternatives Analysis meeting in August 2023, a draft fish and wildlife program will be circulated in October, followed by public meetings in January 2024, submitting a final fish and wildlife program in April 2024, and the Governor's decision is expected in October 2024.

On July 24, 2023, approximately 2 weeks after the hydroelectric project consultants presented the fourth alternatives analysis, the Native Village of Eklutna released its official position regarding the Eklutna hydroelectric project. The position statement articulates the importance of the River to Eklutna people and the lasting impacts of the hydro projects on Eklutna lifeways:

> There is an opportunity here to right a wrong, to correct the injustice to the environmental ecosystem and the Eklutna people who reside downriver, who…have and will have borne the greatest costs (1).

The Village representatives note that the Eklutna project would not have been permitted under contemporary environmental laws and articulate their commitment to restoring the river "…for fish and wildlife habitat, for our people who have relied on the salmon fishery and its benefits…for over a millennium, and for the broader community that we are part of…" (1). They quote studies documenting the existence of fish habitat in the Lake and in the tributaries above the Lake, and call for fish passage around the dam and higher Lake levels, and list specific modifications that can achieve these objectives. They also assert their right, as the Native Village of Eklutna, as the people of that River, to participate in "all future monitoring programs and management plans" (2). This includes the right to be included as signatories on the final Fish and Wildlife mitigation program, an argument also supported by Alaska Congresswoman Mary Peltola. As (Peltola, 2023) explained in a letter to Chugach Electric:

> …the Eklutna Project never reckoned with its effects on Alaska Natives and salmon. The intent of Congress in authorizing the sale of the Eklutna Hydropower Project was clear (they) must mitigate for drying up the Eklutna River for the past 70 years…the final Fish and Wildlife (mitigation) Program should have consensus support from all the signatories to the 1991 Agreement and the Native Village of Eklutna.

The Village also notes that the private utilities avoided FERC analysis and NEPA requirements and were able to push mitigation 25 years down the road, saving them "vast sums of money" (Native Village of Eklutna, 2023a). The Tribe and Congresswoman Peltola both commit to helping find funding to modernize the Eklutna system to allow fish passage. Striking a balance between needs in the region, the Congresswoman recognizes "Eklutna Hydro is an important source of low-cost renewable energy, but it should not come at the expense of salmon, our ultimate renewable resource" (Peltola, 2023).

The Tribe concludes their 2023 statement by reminding the utilities and other interests that the Eklutna Corporation has been a key partner in the region, facilitating leases for development as explained earlier by McQueen. Now, "The time has come to mitigate the loss of salmon and its habitat." The powerful statement from Native Village of Eklutna at once encapsulates the environmental injustices of the past and lays out a series of direct solutions to address this exclusion and the associated impacts on fish and wildlife. Namely, include the Tribe in decision-making and the Tribe will assist with fundraising and implementation of solutions that ensure water for fish, subsistence, hydropower, and domestic use.

Reckoning with hydropower

The operation of the hydropower generated by the Eklutna system has, for the last 80 years, been divorced from the needs of the salmon and the culture of the people who live at the base of the River. Eklutna Dena'ina people assert that the River and its mother Lake are ancestral subsistence and cultural areas that require restoration to their former abundance following shortsighted private development. However, under the current hydroelectric project, the Lake is managed to generate energy—drawn down and allowed to fill seasonally to produce power. This management frames the Lake as a reservoir rather than a natural system. In fact, since at least 1955, no water has been regularly released from the upper dam, resulting in a dry riverbed in the upper Eklutna above the contributions of tributaries.

Eklutna electricity is low-cost to produce (Anchorage Hydropower Utility, 2021) but it only generates 1–5% of the electricity on the grid in this region (Peterson, 2020; "Return to Us," 3:34). The local energy grid is primarily served by natural gas, so the Eklutna system represents "green energy." In 2010, Alaska passed HB 306, which calls on the State to generate 50% of its electric energy from renewable and alternative energy sources by 2025. According to a federal analysis of Alaska's energy production, about 31% of Alaska's electricity currently comes from renewable energy (hydro, solar, wind, geothermal, biomass), with most of that generated by hydropower (U. S. Energy Information Administration., 2022).

However, hydropower projects are subject to analysis and permitting during development to ensure that environmental, cultural, and other impacts are assessed and mitigated. Eklutna was built prior to environmental and cultural regulatory processes largely instituted in the 1970s. The mitigation process initiated in 1991 on the Eklutna is about bringing the project into contemporary compliance with environmental and cultural values. As the Native Village of Eklutna recognizes in their July 2023 position statement on the Eklutna Hydroelectric Dam: "…the environmental laws of today and conscientious leaders at the local, state, and federal levels would not have allowed this situation to occur in the first place" (1). The current artificially low cost of Eklutna power does not account for the environmental and social

cultural impacts of a hydropower system that dewaters a River, decimates a fishery, and impacts a cultural community. As Polly Carr, Executive Director of the non-profit Alaska Center explains, "…we know that a just transition must include restoring and protecting our salmon streams and a return of stewardship to the communities that rely on them" (Eklutna River Restoration Coalition, 2022). Further, as Meiklejohn penned in a powerful op ed in July 2023:

> Hydropower does not count as clean energy if it comes at the expense of Alaska's ultimate renewable resource, which is salmon. Newly installed battery storage, rapid adoption of energy-efficient technology, and expansion of solar, wind and micro-hydro are creating a new energy future for Alaska. We no longer need to degrade the climate and decimate salmon just to turn the lights on (Meiklejohn, 2023).

Similarly, this paper is not arguing that hydropower is an inappropriate source of energy. Rather, it is advocating for a critical examination of the terms and agreements that led to the development of hydropower projects without tribal consent and without consideration for fish. Allowing the project impacts to continue perpetuates the injustices inherent in initial project development. This paper advocates for creative and inclusive environmental policymaking that supports multiple uses of this river and lake—for drinking water, hydropower, and restored flow and fish passage. As McQueen explains, initial data indicates that there is enough water in the Eklutna system to accomplish all three objectives.

Idlughet qayeht'ana/Eklutna village Dena'ina: a growing force in the region

Even the reduced landholdings of Eklutna Dena'ina, as held by Eklutna, Inc., make the entity one of the largest private landowners in the Anchorage area. That landownership gives the corporation an important voice in local politics, as former longtime CEO of Eklutna, Inc., Curtis McQueen, explained, "We built political clout and goodwill as a corporation. As the City grows, they need our land and we made agreements with them. On the business side, they need Eklutna support." Eklutna, Inc., and the Native Village of Eklutna, a federally recognized Tribe, are supported by other Indigenous voices in Alaska, representing a significant voting bloc in the state. In 2020, the Alaska Federation of Natives, whose membership includes 168 federally recognized tribes, 166 village corporations, 8 regional corporations, and 12 regional nonprofit and tribal consortiums, passed Resolution 20-17 supporting the restoration of the Eklutna River, specifically stating:

> ... the Eklutna River is…an example of a river and lake…in Southcentral Alaska where the traditional Tribe has been working to achieve salmon restoration and has affirmed, supported, and authorized studies to inform and to conduct restoration and enhancement of salmon habitat, and other processes to promote the natural productivity, cultural value, and appropriate uses of the Eklutna River;
>
> and…Salmon have been the most important nutritional and cultural natural resource for Alaska Natives like the Eklutna people who work with others…to restore Eklutna River salmon runs by restoring water to the River from Eklutna Lake, where it is diverted for electricity generation and secondarily for Anchorage water needs leaving insufficient flows for salmon in a salmon system which once supported a run of red salmon.
>
> NOW THEREFORE BE IT RESOLVED that the Alaska Federation of Natives…supports efforts to restore traditional rivers and streams for fish and wildlife habitat, traditional subsistence uses, and sustainable natural resources development, and in particular, supports tribes like Native Village of Eklutna, which is actively engaged with stakeholders and policymakers to restore the Eklutna River for salmon habitat (Alaska Federation of Natives, 2020).

While water was flowing in the Eklutna River when I first visited in September 2021, it was only scheduled to flow for a few weeks, heavily regulated from low to higher flows, and then slowly reduced until the gates were closed.[15] This short-term water release was a component of the long-awaited fish and wildlife mitigation study requiring the Eklutna Purchasers to examine and mitigate the effects of the hydropower projects on fish and wildlife. The system is currently being examined by consultants pursuant to the 1991 Agreement, which requires the study of alternatives and a mitigation proposal for review by the Governor in 2024. This is a critical time for the future of the Eklutna: will business as usual continue to violate the self-determination of the Native Village of Eklutna, or will state and federal decisionmakers recognize both the strength of the Eklutna Inc. and the NVE, and the egregious environmental and sociocultural impacts of permitting a system that de-waters a homeland salmon stream?

It is not easy to change 90 years of practice and policy that treated the Eklutna River as an externality to the process of power production and water supply. However, shifts in energy efficiency and sources, aging infrastructure, the political and economic power of Alaska Native corporations and governments, and growing calls for restoration of critical salmon spawning habitat have changed the context in which hydropower and other infrastructure operate, in Southcentral Alaska as well as throughout the western United States. During my second visit in fall 2022, water was still not flowing in the Eklutna River. The weighty process of environmental review inches forward as the companies and regulators determine whether the environmental harm of de-watering the River can be mitigated without meaningfully disrupting the power or water provision capacities of the system.

The Eklutna, however, exists in a unique context among similar rivers that are the focus of restoration work throughout the West. While all rivers exist within ancestral homelands, narratives, songs, and stories, the Eklutna also flows through Alaska Native corporate lands, as affirmed by the ANCSA. The headwaters of the Eklutna River at Eklutna Lake and the lands the River flows through on its way to Knik Arm are all owned

15 For a description of the release period and cfs, see https://www.eklutnariver.org/returningwater.

by Eklutna Inc, with subsurface rights held by CIRI. However, this ownership was established following ANCSA in 1971, while the license to operate the hydropower and water diversion facilities had been established in the 1920s. So, the licenses were grandfathered in, enabling continued operation of the system in an agreement between the parties. Changing this agreement and returning water to the beleaguered Eklutna requires changing long entrenched relationships between those with an interest in these Dena'ina homelands.

Conclusion: water, power, homeland

I began this piece with a story about a giant being in the Lake that flung itself out into the canyon, changing the watershed. This being lives on in oral histories, such as that shared by Shem Pete in 1985. In "The Giant and the Water Baby: Paiute Oral Traditions and Owens Valley Water Wars," Concow/Wailaki historian William Bauer centers a Paiute narrative of a seemingly diminutive being overtaking a powerful one (Bauer, 2012). By centering the Paiute narrative in and of place, he de-centers a Western history of the seizure of Paiute water and homelands to feed the City of Los Angeles. Inspired by Bauer's method, I began with a Dena'ina narrative of this place, to center the deep history of Eklutna Dena'ina and other Native peoples in the region, rather than the western manipulations of the watershed that have resulted in its current degraded condition. This allows readers to step outside of the current policy entanglements to consider this River system as an Eklutna place, with an Eklutna history that can be seen in land formations, like the knobs or hills at the base of the Eklutna, and a living Eklutna oral history. Simultaneously, this piece engages in detail with policy, analyzing the environmental injustices of the project development, and working to braid Eklutna oral history with Eklutna business and politics, and 21st century environmental policy to cultivate hope (Hazlewood et al., 2023) in the potential for contemporary processes to work toward greater justice for Eklutna people and the Eklutna River itself.

Following the transfer of the facilities to the Purchasers and the required implementation of the F&W Agreement, the NVE was included in the 2020 Technical Working Group (TWG)—the first time a Eklutna Dena'ina entity was included in state/federal/private decision-making about their river. "They listen to us and incorporate our suggestions, like the idea to do new engineering studies at the lake outlet," said Lamoreaux (8/4/21). NVE's partners Trout Unlimited and The Conservation Fund have also been invited to participate in the stakeholder groups. The utilities are working with the TWG to review (and conduct, in some cases) studies to determine how to economically and ecologically address hydro and water supply projects' impacts on fish and wildlife.

The NVE and environmental partners agree that water must be restored to the Eklutna River to allow for the safe passage of all five species of Pacific salmon (Herz, 2019). So far, the Purchasers have not articulated a solution that involves fully restoring the water to the river (Herz, 2019). Critics are skeptical that returning water to the river will work, and they are concerned about the lack of guidance for how much water exactly should be returned to the river (Herz, 2019). Following the 2021 release, there are ongoing studies by the Purchasers' consultants and the NVE Environmental staff to determine the impact of the release and the potential impact of further releases. There is also additional work to understand the economic impact of the water releases on the hydropower producers, and where funds might come from to mitigate those impacts (McMillen, Inc, 2023).

The process of getting to this point—in which one dam has been removed, and studies are underway to assess the ecological and economic impacts of restoring the River— has centered partnerships. NVE Chairman Leggett emphasizes patience and collaboration as he reflects on the ongoing process: "This is three decades in the making…We couldn't have done it by ourselves, we had public and private partnerships. These are complex issues. It takes partnership to achieve goals" (9/2021 interview). Indeed, the partnerships extend to the utilities, the owners of the hydroelectric projects that have been dewatering the River for decades. The Eklutna Corporation enabled the utilities to build out their transmission infrastructure in a series of negotiated agreements across Corporate lands. One might argue that it is now the utilities' reciprocal responsibility to work with the Tribe and the Corporation to modify their operations to restore the River. If infrastructural modification needs to occur to restore flows and fish habitat, the utilities and ratepayers don't have to shoulder this burden alone; there are funds that the Village can apply for to help with the costs of restoration and modification. To determine exactly what changes are needed in the system, studies by both the NVE and consultants are examining how much water the salmon need at different times of year and different stages of their life cycles.

The return of adequate flows to the Eklutna River stands to restore a five-species salmon fishery to the greater Anchorage area and return and revitalize an Eklutna landscape of cultural patrimony.[16] According to Eklutna ally and longtime Alaska conservationist Meiklejohn:

> The through-line for the Eklutna dam removal and river restoration is the Native community of Eklutna and what happened to them over a long period of time. In a way, the river is metaphor for what happened to them. The Eklutna is their river, their name, it supported them with fish, and they did not have say about what happened to them or to their river. It was dammed in 1929, with no permission sought, the fish disappeared, and that aspect of the community fell apart. Now…they have turned a corner. As [Eklutna elder] Maria [Coleman] says in the film, they can see some daylight.

Indeed, with the removal of the lower dam, a momentum was established that was visibly apparent with the 2021 water release, and continues even now without another release in immediate sight. "We are so close to writing a new story," McQueen reflected, considering all that has been accomplished in the last decade by partners committed to restoring the Eklutna.

16 Thornton (2014) encourages applying the logic of repatriation of cultural patrimony to return land and water rights to Indigenous people.

Indeed, the Eklutna River itself continues to flow as best as it can—drawing on incoming seeps and tributaries like the powerful Thunderbird Creek and overtopping the dam when there are large rain events. Despite the barriers along its path, the Eklutna River's voice still echoes between the walls of the canyon it formed over millennia. However, it also struggles; dry and overgrown just below the upper dam, where the utilities have not released water voluntarily except for the single, approximately 3-week release in September 2021. Advocates for River restoration continue to foster hope in one another, and to work across communities and boardrooms to inspire decisionmakers and neighbors with the potential to restore justice and flows on a system that has been disrupted continuously since 1929. As stated in the Summer 2023 Native Village of Eklutna newsletter, "Liq'a nagh qinqtudet/We are hopeful the salmon will return to us" (Native Village of Eklutna, 2023a,b, p. 12). When asked what restoration of the Eklutna River would mean to him, Eklutna elder Stephan did not hesitate— "the achievement of a lifetime," he said, "to make sure that I leave something for the next generation" (Stephan, 2021, 2022).

Data availability statement

The datasets presented in this article on the Eklutna River are publicly available from the sources referenced. The interview data is not publicly available because of the confidentiality of interviews.

Ethics statement

The studies involving humans were approved by UC Davis Institutional Review Board, IRB ID 1685223-1, Removing Dams and Restoring Tribal Homelands. The studies were conducted in accordance with the local legislation and institutional requirements. The Ethics Committee/institutional review board waived the requirement of written informed consent for participation from the participants or the participants' legal guardians/next of kin because interviewees are primarily public figures who speak publicly about the topics in the paper.

Author contributions

BM conducted the research with support from graduate student researchers Katt Lundy and Carlie Domingues. BM wrote the entirety of the manuscript.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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