



## Removing Enloe Dam to Prevent Salmon Extinction and Restore Tribal Resources



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### Proposal Questions

#### Mission/History Of Organization

Trout Unlimited's (TU's) mission is to bring together diverse interests to care for and recover rivers and streams so that our children can experience the joy of wild and native trout and salmon. Our vision is for communities across America to engage in the work of repairing and renewing our rivers, streams and other water bodies on which we all depend. TU

#### JEDI Efforts and Impact

Engaging diverse communities is critical to TU's mission, and we established the Ripple Effect in 2020 to train a core group of staff who would then "ripple" efforts throughout the organization to make TU a more welcoming community for all people through our organizational culture, business practices, and work in the world. In 2024 that program grew to

was founded in 1959 on the banks of the Au Sable River in Grayling, Michigan, by a group of anglers who successfully sought to change the state's reliance on hatchery production of trout into a program focused on protecting and restoring fish habitat. Today, TU is the nation's largest grassroots coldwater conservation organization working on a local, state, and national level through more than 300 dedicated staff, 110,000 members, and a network of 15,000+ volunteers organized in 400+ local chapters and state councils. TU drives thriving fisheries, cleaner water, resilient ecosystems, stronger economies, and healthier communities.

#### Final Success

The removal of Enloe Dam will reconnect a free-flowing Similkameen River and 1,520 miles of critical high-elevation coldwater habitat for Upper Columbia steelhead and Chinook salmon to prevent local extinctions, increase climate resiliency, honor Tribal sovereignty and restore important cultural and recreational resources for Indigenous and local communities -- a landmark victory for river restoration and a testament to the power of partnerships and community-driven conservation.

#### Location Details

45 participants.

One outcome was the inception of TU's Tribal Partnership Program in 2024. We surveyed TU staff and documented existing partnerships with over 100 different Tribes and Indigenous communities across the country and recognized both the importance of these relationships and an opportunity to do more. The new program will support TU staff who work with Indigenous communities and connect new and existing Tribal partners with public and private programs that have been established to provide resources and capacity. In February 2025, one-third of TU's staff attended the kick-off meeting for the new program.

Enloe Dam, a 54-foot-high concrete wall spanning 290 feet across the Similkameen River, is located in north-central Washington state about 3.5 miles northwest from the City of Oroville and 8.8 miles upstream from the confluence of the Okanogan and Similkameen Rivers. The drainage area of the Similkameen River upstream from Enloe Dam encompasses about 3,550 square miles, most of which lies in southern British Columbia (BC). The Similkameen River is the largest tributary to the Okanogan River but has been inaccessible to anadromous fish since Enloe Dam was constructed in 1922. In fact, the Similkameen is the largest subbasin in the Pacific Northwest that is cut off by a relict dam. The region is home to three Tribal Nations, including the Confederated Tribes of the Colville Reservation (CTCR) in the U.S. and two First Nations in BC (Upper and Lower Similkameen Indian Bands). The Similkameen River is within the Usual and Accustomed Area of all three Nations and provides important cultural and subsistence resources associated with salmon and other first foods. The dam stands over the most important Tribal fishing site in the region, Coyote Falls, which will be restored once the dam is removed.

Currently, just over 70 miles of stream habitat in the Okanogan River Basin are accessible to and capable of supporting Upper Columbia River steelhead and spring Chinook salmon, both of which are listed under the Endangered Species Act (ESA). However, stream temperature models predict that much of that habitat is likely to exceed the thermal tolerance for steelhead by 2040 and will become uninhabitable. Removal of Enloe Dam will reconnect an additional 1,520 miles of spawning and rearing habitat in the Similkameen River, most of which is found at higher elevations and will provide refuge from the projected

temperature increases due to climate change. Another culturally important native species, Pacific lamprey, also has the potential to access habitat upriver if the dam is removed.

Protecting this place demands removing a structure that has been functionally and economically obsolete for more than 60 years yet continues to interrupt riverine processes, harming the ecosystem and Threatened and Endangered fish populations, hindering Tribal cultural practices, and posing risks to local communities.

**Biodiversity in Project Area**

Upper Columbia River steelhead and spring Chinook salmon are listed as Threatened and Endangered, respectively, under the ESA, and recent returns of both species are well below the 10-year averages. Spring Chinook were extinct in Okanogan River until CTCR initiated an experimental reintroduction in 2015. Steelhead returns from each of the past five years have been far below the Okanogan recovery objective of 500 spawners, and only 176 natural-origin steelhead returned to spawn in the basin in 2024. The Okanogan River steelhead population is at risk from limited diversity and spatial structure and has a greater than 25% chance of extinction within the next century. Removing Enloe Dam to reconnect 1,500+ miles of coldwater habitat and restore a critical migration corridor presents the best chance to prevent extinction; it also facilitates access for reintroduced Pacific Lamprey, another important first food for local Tribes. Enloe Dam's removal benefits biodiversity not only through fish species preservation but also through restored river shorelines, floodplains, and riparian vegetation that improve wildlife habitat.

The project will significantly increase connectivity to protected lands, including the 80,000-acre Similkameen Valley Provincial Park (BC); the 531,539-acre Pasayten Wilderness (WA); and the 3.8-million-acre Okanogan-Wenatchee National Forest (WA). Connectivity also will increase in the headwater stream system in BC that drains a mix of private, public, and Tribal lands.

Removal of Enloe Dam will restore natural stream processes in the lower Similkameen and Okanogan Rivers for the first time in more than 100 years, and the climate resiliency benefits extend beyond fish populations to the human communities downstream. Enloe Dam is a century old, and an unplanned breach or dam failure would have catastrophic consequences for downstream communities. An uncontrolled flush of sediment would cause flooding,

**Expected Economic & Recreational Impact**

Removing Enloe Dam will reconnect a unique recreation corridor for anglers and whitewater enthusiasts. The Similkameen River also offers other recreational opportunities that will be enhanced once the river flows free and is more accessible, such as camping, swimming, and hiking the Similkameen River Trail, a wide-and-flat rails-to-trails jewel that winds in parallel to the river.

Dam removal also will benefit the Okanogan Public Utility District (OPUD) and its ratepayers in a rural county that is among the poorest in the state. A major benefit is avoided costs for dam operations, maintenance, and replacement, which the Enloe Dam Removal Feasibility Analysis estimated would range between \$8.5 million and \$52.0 million over the fifty-year period from 2025 to 2075.

The Feasibility Analysis also calculated "non-market benefits" that will accrue from increasing the salmon population and river-based recreation opportunities on the Similkameen River resulting from dam removal. This analysis estimated the present value of environmental benefits from removing Enloe Dam to be between \$85.2 billion and \$169.8 billion. Of that, \$14 million to \$19 million is expected to be realized locally, including the restored recreational and subsistence fishing opportunities for Tribal and non-Tribal residents and visitors to the region.

The deconstruction of Enloe Dam and associated site restoration will have a much-needed positive economic impact in Okanogan County. The planning and implementation of this large-scale project will in the short-term boost the local economy by employing local construction contractors, and, because the project area is remote, businesses in local communities like Oroville, WA, (population 1,866) and Tonasket, WA, (population 1,114) will benefit. Each direct job will create additional indirect jobs via increased community wage earnings and spending cycles, and one

destruction of habitat that supports important aquatic resources (e.g., fish, mussels), and damage to critical infrastructure (e.g., bridges and irrigation intakes and pumps) that would be costly to repair or replace, thereby causing economic hardship in a county with the lowest per capita income in Washington. The community of Oroville will be more resilient to catastrophic flooding and historic flow events with the removal of the run-of-river dam and the 560,000 cubic yards of trapped sediment perched just upstream.

study calculated that “employment multiplier” to be 2.63 in Okanogan County in 2012.

### Strategy & Timeline For Final Success

Trout Unlimited developed a roadmap for removing Enloe Dam that charts the project from its initiation through three implementation phases to post-project effectiveness monitoring and adaptive management. The Initiation Phase occurred from May 2022 through June 2023 and produced a stakeholder engagement framework, the project roadmap, a commitment of support from the dam owner (Okanogan Public Utility District) for project feasibility analysis, and initial project funding. Phase 1, the Feasibility Evaluation and Alternatives Analysis, is underway and will be completed by May 2025. Funding from The Conservation Alliance will support TU’s work to advance through Phase 2, comprising Design, Permitting and Construction Document Packaging, which will be completed by August 2026. The completion of Phase 2 will put the project partners on track to initiate Phase 3, which is Construction in June 2027 after additional funds for that phase are secured, followed by post-project evaluation, monitoring and adaptive management. Ultimately, removing Enloe Dam and restoring the natural river channel through the previous impoundment and dam site will achieve the overall goal of restoring access to critical upstream habitat for Upper Columbia River steelhead and salmon and increasing population resilience.

Strategic project activities that will be supported by funding from The Conservation Alliance include the following:

1. Select a Dam Removal Entity (DRE) to acquire ownership and liability of Enloe Dam, execute construction contracts, and secure insurance coverages to indemnify the dam owner from future liability associated with dam removal. TU will enter into a three-way binding agreement with the DRE and OPUD to execute dam removal. The DRE will file permit applications and execute construction contracts, and TU will lead fundraising efforts and serve as project manager for dam removal. We will establish a new corporation to serve

### Key Decision Makers

Stakeholder support for the Enloe Dam removal project is widespread, as demonstrated by the fifteen letters of support submitted with the 2022 NOAA grant proposal that launched the project. Those letters came from multiple state and federal agencies, local and national NGOs, OPUD, three Tribes, and the Province of British Columbia.

To ensure ongoing support from that broad stakeholder community and key decision makers, we developed a Collaborative Engagement Framework to encourage public participation, technical expertise sharing, and inclusive community outreach. In developing the framework, project consultants conducted interviews with thirty-three individuals representing local, state, and federal governments, Tribes, First Nations, subject matter experts, conservation organizations, members of the community, and landowners.

The framework ensures that all perspectives are considered and the decision-making process is transparent. It includes a Responsibility Assignment Matrix (RACI) tool that clarifies and defines roles and responsibilities within the project. "RACI" stands for Responsible, Accountable, Consulted, and Informed, representing the different levels of involvement and decision-making authority for each stakeholder group: the Project Team (Responsible), Executive Advisory Committee (Accountable), Traditional Ecological Knowledge Table (Consulted), and Technical Advisory Committee (Consulted). The Framework also acknowledges the critical importance of the public (Inform/Input) to successful outcomes for all phases of this project.

Businesses and chambers of commerce have a vested interest in a healthy Similkameen River and often have an outsized influence on local decision-makers, so their involvement in the project is essential. We will engage and mobilize them to ensure that local officials hear first-hand from trusted allies

as DRE (founding members will be TU and CTCR) and compile a layered insurance package that protects the DRE and OPUD from liability associated with dam removal. Water and Power Law Group is leading the DRE analysis and framework development and working with Aon Insurance to scope a liability protection program, including cost estimates.

2. Produce 60% engineering design plans and submit permit applications to advance engineering beyond a conceptual level. This next phase of project design will be contracted via a competitive bid process managed by TU and CTCR.

3. Continue monthly coordination and consultation with Tribes and regulatory agencies. TU engaged Triangle Associates via a competitive procurement process to build and manage a stakeholder engagement framework that includes both Tribal and regulatory agency coordination.

4. Continue monthly meetings of the Traditional Ecological Knowledge (TEK) Table, which, in the words of one Tribal participant, was formed to “uphold relationship protocol and cultural values between Upper Similkameen Indian Band (BC), Lower Similkameen Indian Band (BC), and Confederated Tribes of the Colville Reservation (US). The table is composed of knowledge keepers and Tribal natural resources staff representatives that bring a wide range of salmon recovery experience and cultural knowledge to advocate for our first foods. TEK engagement...keeps Tribal people in control of knowledge systems that define our cultural responsibilities to the siwit - water, tmxulax<sup>w</sup> - land, timx<sup>w</sup> - our relatives, and each other.”

5. Establish baseline data collection needed for implementation and effectiveness monitoring. CTCR will lead effectiveness monitoring as part of their Okanogan Basin Monitoring and Evaluation Program.

6. Continue quarterly project updates and stakeholder outreach, including two additional public meetings in local communities. This activity will be managed by TU and Triangle Associates.

TU will provide key administrative capacity to manage all project-related activities, including contract management, financial management and compliance, and project oversight. TU also will lead efforts to secure funding for Phase 3 Construction.



**Elevate Voices**

The Confederated Tribes of the Colville Reservation (CTCR) are a lead partner assisting with project implementation. The Okanogan River Basin is within the CTCR's Usual and Accustomed Area, and they are fishery co-managers with the State of Washington. In addition, the Upper and Lower Similkameen Indian Bands in British Columbia, Canada, have been participating in the evaluation of the removal of Enloe Dam, and all three Tribes have passed resolutions supporting Enloe Dam removal. All three Tribes also have been involved since the inception of the project in 2021, when TU secured funding for both First Nations and CTCR to train and deploy habitat survey crews to validate NOAA-generated habitat capacity models for steelhead and spring Chinook in the Similkameen Basin.

The three Tribes have convened monthly during the past two years to gather and disseminate Traditional Ecological Knowledge (TEK), most of which was verbally communicated over several generations. The TEK process addresses the sm̓elq̓mix-syilx Title and Rights (st̓t̓et̓t̓) in Canada, and tribal perspectives and interests in the U.S. To reestablish the Native American culture and heritage, Tribal members identified features to be returned to historical conditions that were previously damaged during the construction and operation of Enloe Dam. The members also listed several native plant species that were known to be well established in the local area, as these were gathering areas for the seeds, stems, or leaves of these plants. In the coming weeks, all three Tribal councils are expected to meet and ratify the draft list of these and other inclusions developed through the TEK meetings. A final list of inclusions based on TEK and endorsed by all three Tribal councils will be incorporated into project design and implementation.

**Measurable On-Ground Outcomes**

1. Engineering design plans completed to the 60% level of engineering required to submit permit applications to regulatory agencies and generate an engineer's Opinion of Probable Construction Cost (OPCC) to support implementation fundraising.
2. Regulatory permit application process completed, with all permits submitted to federal and state agencies. This is a key interim outcome to move the project forward to regulatory approvals.
3. Traditional Ecological Knowledge (TEK) outcomes incorporated into project design and implementation plans. TEK work has been ongoing since project inception and culminates in this project phase with the formal adoption of TEK recommendations.
4. Risk and liability for dam removal mitigated via establishment of Dam Removal Entity (DRE) to manage risk and assume liability for dam removal. This is a critical step to secure support from the dam owner (OPUD) to move forward with dam removal.

**TCA Funding Plan**

TU and CTCR collaborated to secure funding for the current phase of the dam removal project that will produce a 60% engineering design, submit permit applications, incorporate TEK into the project design and implementation plan, and form a DRE. Funding from The Conservation Alliance will support project management capacity for two TU staff to deliver each of these sequential outcomes that is critical to achieving dam removal. TU serves as the single point of contact for the dam owner, having established a relationship of trust that overcame a decade of inaction resulting from conflict between the dam owner and dam removal advocates. The Enloe Dam removal project is complex, with multiple overlapping government and Tribal jurisdictions, including an

**How long it took to complete application**

international border, and TU dedicates 1.5 FTE to the project manager and program director levels to keep it on track. Without dedicated professional project management and the funding to support it, Enloe Dam removal will not happen.

**Confidential Items** N/A

**Other Relevant Application Details**

