

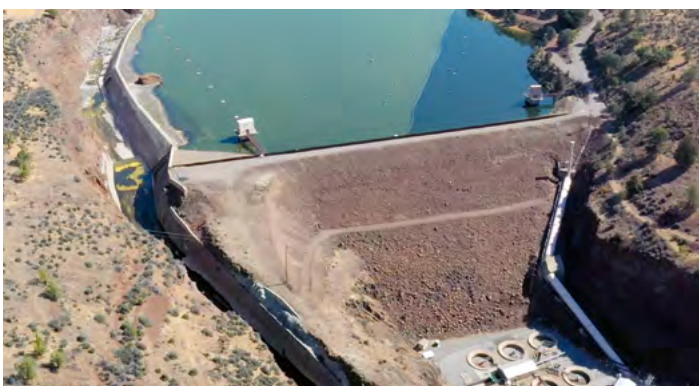
Dam Removal Stories

The Klamath River Restoration: The First UnDammed Descent, and Hope for the World's Rivers

How/why were the dams removed?

The long term fragmentation and impoundment of the river led to decimated salmon populations. This essential fish comprised a large portion of Native communities ancestral diet. Rising temperatures combined with nutrient runoff led to prolific blooms of toxic algae that sickened any creature who drank, bathed, or touched the water. A fish kill in 2002 sparked public outcry and catalyzed a movement, reinforcing effort by Tribes, nonprofits, and scientists around the basin who had been protesting the dams for generations. The 50-year license for operation of the Klamath River dams expired in 2006. To receive a new 50-year license with the Federal Energy Regulatory Commission (FERC), the dam owner would have had to bring the dams into compliance with modern laws requiring fish passage and elimination of water quality problems. There was a window to tip the scales. Legal levers such as the Clean Water Act and the Endangered Species Act were exercised, and after many court battles, stakeholders including Tribes, two states, the federal government and other stakeholders signed a dam removal agreement in 2010, which was later replaced with a new agreement in 2016. Four of the six dams on the Klamath would come down.

[More information on the dam removal agreements](#)
[More information on the restoration](#)



[The Klamath River Restoration](#)

[How we can restore the Lower Snake River](#)

[Climate Damaging Impacts of Mega Dams on Arctic Rivers](#)

The Impact

Three weeks after dam removal, changes began to ripple through the basin. In defiance of the thick sediment that the river needed to clear from the once-choked reservoirs, salmon began appearing in ancestral spawning grounds not accessed in over a century. Water quality began to visibly improve, temperatures began to regulate, mighty rapids re-emerged, and ecology began to change and flourish in the previously deadened reservoirs.

A new report by [Tell the Dam Truth](#) on the [Greenhouse Gas Emissions of Four Klamath River Dam Facilities](#), estimates that the four dams caused the emission of 275,000 metric tons of CO₂ per year. The same report estimates



that, now that the dams have been removed, the same region has the potential to sequester approximately 5,075 +/- 1,830 metric tons of CO₂ e per year over the next century, or 507,500 +/- 183,000 metric tons of CO₂ in 100 years.

2025 was a year of many celebrations, and it also was a time of reconciling for the future of the Klamath. The removal of the four dams was just the beginning. Two more dams, the Keno Dam and Link River Dam, still remain in the upper section of the Klamath River, negatively impacting aquatic species and water quality. The half billion dollar restoration of the basin was funded by PacifiCorp and the State of California. But the recovery still has a long way to go, facing challenges of stakeholder agreement, and ongoing threats to the river, its salmon, and other endemic species. One of the most immediate challenges the basin currently faces is determining water allocation for its stakeholders including the agricultural industry and the need to

leave water in rivers and streams (aka instream flows) for Tribes and the native fish species. In addition to salmon, the native fish include the Cwaam and Coptu (sacred First Foods for Tribal nations), which are currently threatened by water quantity and quality problems. Although it is a daunting task, it represents an enormous opportunity for deep collaboration between stakeholders.

Klamath River Descent

On July 11th, 2025, thirty young kayakers paddled the final stretch of the Klamath River, emerging through the thick coastal fog and reaching the Pacific Ocean. This long-awaited arrival marked the end of a 30-day journey from the headwaters of the Klamath River in Oregon to where it meets the ocean in Northern California. Behind these paddlers were dozens of rafts carrying Tribal members, river advocates, researchers, and community members from around the world, descending in solidarity with the group on the final day of this historic expedition.

Through rain, hail, scorching sun, and multiple headwinds, this 310-mile journey was the first source to sea descent honoring the recently undammed Klamath River. The removal of four dams (Copco 1, Copco 2, Iron Gate, and JC



Boyle) in 2024 was part of the Klamath River Dam Removals; the largest river restoration project in the world to date. Until 2024, the Klamath had been dammed for over 100 years, negatively impacting the river basin and its ecology, hydrology, and First Peoples, including: Yurok, Karuk, Hoopa, Klamath, and Shasta.

The kayakers who completed the First Descent were Native youth and staff from [Paddle Tribal Waters](#), a youth leadership and kayaking program under the nonprofit [Ríos to Rivers](#). These students had been training for multiple years for this journey, which represented a symbolic reclamation of a river and a stolen history. The First Descent journey received worldwide press coverage from news outlets such as [The New York Times](#), [The Washington Post](#), [CNN](#), [The Guardian](#), and many more.

Klamath River Accord

The expedition ended in a three-day celebration at the mouth of the river in Klamath, California. Over this weekend the Free Rivers Symposium was held, gathering Tribal leaders, river experts and advocates from around the basin, the nation and the world, to discuss next steps for the Klamath, share experiences from other threatened basins, and discuss how to bring the message of the freed Klamath to



the rest of the world. At the Symposium, the [Klamath River Accord](#) was presented and signed. The Accord, co-written by the Rivers for Climate Coalition, Native youth and staff from [Ríos to Rivers](#), and river defenders and experts around the world, is a declaration bearing witness to the harms of dam-building, the benefits of dam removal, and the value of free-flowing rivers. It seeks to set a global precedent to value rivers in their integral form above the temporary but costly electricity generated from them. Please add your and/or your organization's name to the [Accord](#).

Together with Indigenous representatives from dam-affected basins around the world, the [Rivers for Climate Coalition](#) brought the Klamath River Accord to the UNFCCC COP30 conference in Belém Brazil in November 2025, and is working to submit the Klamath River Accord as an official declaration to the United Nations. This effort seeks to shift the narrative surrounding hydropower in the face of the International Energy Agency's erroneous call to double the world's hydroelectric capacity by 2050 in the name of climate mitigation. The coalition is developing resources to figure out how the dam removals such as those in the Klamath can be replicated in other basins around the world.

Join us on this impactful journey and learn more at riostorivers.org

Hayley Stuart

12/12/25 News Article for Living Rivers



Monitoring results show thousands of Chinook salmon accessing newly reopened habitat – some reaching more than 360 river miles from the ocean into the Upper Klamath Basin for the first time in over a century.

A coalition of 19+ partners, including CalTrout, the Karuk & Yaruk tribes, The Klamath Tribes, ODFW, CDFW, university researchers and nonprofits is powering one of the most comprehensive salmon monitoring programs in the US West.

The team's preliminary data reveals a strong fall run in 2025 with more than 10,000 fish over 2 ft. long, likely Chinook salmon, passed the former Iron Gate Dam site – a 30% jump from the 2024's count of fish of the same size.

How we can restore the Lower Snake River

Historically, the Snake River produced between one-third and one-half of the Columbia's salmon, including millions of Chinook, steelhead, coho, and sockeye. The headwaters of the Snake River, high in the Idaho mountains, remain some of the largest and best salmon breeding areas in the Lower 48. Nevertheless, **Snake River salmon populations have collapsed; some runs are close to extinction.**

After leaving the Idaho mountains, the Snake flows roughly 150 miles through eastern Washington to join the Columbia near Tri-Cities. This stretch of water is called the **Lower Snake River**. In the 1960s and 70s, the Army Corps of Engineers built four dams on the Lower Snake River to allow barging and generate a small amount of electricity. These four dams decimated the Snake River's salmon runs, transforming the Lower Snake River into a series of warm, shallow lakes where predators, dam turbines, and hot water kill too many migrating salmon.

We must unite around **solutions to remove the four Lower Snake River Dams and re-invest in regional transportation, irrigation, and energy infrastructure.** Working together, we can have a future that includes salmon, agriculture, and clean energy. We have made real progress towards this goal! Our States, Tribes, NGOs, and federal agencies have begun making plans to replace the services that the Lower Snake River dams currently provide.

How We Know Dam Removal Works

There's still time to restore the Snake River's once-mighty salmon runs. Recent dam removals on the Klamath, Elwha, and other rivers show that salmon quickly return. And the existing, healthy run of wild fall Chinook salmon in the Hanford Reach of the Columbia River is proof that – when we give salmon a place to spawn – these incredible fish can still recover in abundance.

www.columbiariverkeeper.org/campaigns/snake-river-dam-removal

The Trump administration announced its decision to withdraw from the Resilient Columbia Basin Agreement (RCBA), abandoning an unprecedented opportunity to restore endangered salmon and steelhead and modernize the region's energy infrastructure in partnership with Columbia Basin Tribes and the states of Washington and Oregon.

Columbia Snake River Campaign

The Columbia Snake River Campaign is a coalition of people, businesses, and organizations, guided by local Tribes, calling for our elected leaders to stop salmon extinction by removing four dams on the lower Snake River, replacing their services, and investing in Northwest communities.

"We are disappointed but not deterred. Salmon don't have time for politics, so we must press on," said Kayeloni Scott, Executive Director of the Columbia Snake River Campaign. "What's truly disheartening is witnessing a few misguided actors celebrate the preservation of a status quo that offers no wins – not to energy customers, to Tribes, to fishing communities, nor to endangered orcas. But we've been here before, and we are not giving up. These icons of the Northwest still require immediate action if we are to ensure their survival."

The RCBA represented an unprecedented collaborative framework between Tribes, states, and federal agencies to chart a path forward for salmon and steelhead in the Columbia River Basin, one that included investment in Northwest infrastructure, affordable renewable energy, and fulfillment of long-standing promises to Tribal Nations.



By rescinding the RCBA, the Trump administration is choosing to saddle Northwest residents with the ongoing costs of maintaining outdated energy infrastructure that cannot meet future demand, while the salmon that sustain Northwest fishing economies, ecosystems, and Tribal cultures continue to decline – cutting off regional prosperity at the knees.

The Columbia Snake River Campaign will continue its efforts, organizing communities, working with Tribal partners, and galvanizing Congressional leadership towards comprehensive solutions, like those offered in the Columbia Basin Restoration Initiative. The salmon are out of time, and extinction is not an option.

www.columbiasnakeriver.com



Climate Damaging Impacts of Mega Dams on Arctic & Sub Arctic Rivers

Hydropower dams once only regulated short river sections, but their rapid expansion has transformed entire river systems. Today, more than 800,000 dams exist worldwide, including at least 60,000 large dams on major waterways. Their climatic effects remain widely underestimated.

In sub-Arctic regions, dams can directly warm local climates. Water released in winter remains above the freezing point and is exposed to air around 30° C colder, causing strong evaporation and heat transfer. Research at the Krasnoyarsk Dam on the Yenisei River shows that a once seasonally frozen river now completely remains ice-free, creating a measurable warming of about 4° C along a 300 km downstream corridor. In just 90 winter days, heat transfer alone releases

about 97 TWh of thermal energy – roughly twice the total annual electricity generation of the dam itself.

Their far more significant impact lies in the disruption of natural freshwater pulses that have shaped Arctic Ocean climate systems for thousands of years. Historically, the seasonal melting of snow in the Arctic released pulses of cold freshwater, sediments, oxygen, and nutrients into coastal seas. Many dams now store this water until winter, releasing it at the wrong season and at higher temperatures. This can reduce the formation of sea ice and weaken ocean circulation in the North Atlantic.

The water stored in reservoirs loses oxygen and nutrients over the summer, leading to the formation of anaerobic zones behind the dams. Reduced nutrient transport threatens marine ecosystems, especially diatoms, which form the base of ocean food webs. These microscopic organisms alone generate roughly 20 % of Earth's oxygen and store an estimated 10-20 gigatons of CO₂ annually – comparable to all terrestrial rainforests combined. Unfortunately, their populations have been declining by around 1% per year since 1998.

Large dams should no longer be viewed as simple renewable energy assets, but as profoundly climate active infrastructures, with far reaching environmental influences, still poorly understood and systematically underestimated. The consequences extend well beyond energy production into the stability of regional and global climate systems.

www.riostorivers.org/r4c-webinars

RIVERS FOR CLIMATE

Rivers for Climate (R4C) is a global coalition advancing climate justice by protecting free-flowing rivers and exposing the false promise of hydropower.

Our efforts span critical global forums to ensure rivers are recognized as central to climate, biodiversity, and cultural survival. R4C will engage state parties, intergovernmental bodies, and civil society year-round to:

- End the recognition of hydropower in climate finance and carbon markets.
- Elevate dam removal and river protection as real climate solutions.
- Secure accurate accounting of dam-related methane emissions.
- Build a powerful movement of Indigenous leaders, scientists, and river defenders worldwide.













LIVING RIVERS Foundation engages in the protection of free rivers and freshwater life, sustainable management of water resources and the revitalisation of rivers landscapes – in Europe and internationally. Together with our partners, we advocate better implementation of policies that treat water as a cross-cutting issue. We also promote the idea of making economics work for the environment and dismantling harmful subsidies.

We believe that Europe can do better in protecting the last wild rivers and removing dams. Therefore we advocate the establishment of a growing network of strictly protected free rivers across Europe.

LIVING RIVERS Foundation is a member of the European Environmental Bureau (EEB) in Brussel, Europe's largest federation of environmental citizen's organizations as well as in the Rivers for Climate Coalition.

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