

The dirty dam truth

Hydropower is often marketed as the kind of clean, renewable energy we're supposed to want. It's what dam developers have been claiming for decades. But a growing body of scientific research shows just the opposite.



Excess water spills over the top of a dam on the Lower Klamath River known as Copco 1 near Hornbrook, Calif. in 2020. A plan to demolish four dams on California's second-largest river to benefit threatened salmon has sharpened a decades-old dispute over who has the biggest claim to the river's waters. The project, if it goes forward, would be the largest dam demolition project in US history and would include the Copco 1 facility pictured. Gillian

The Biden administration has taken unprecedented action to confront climate change during its first months in office, from reentering the Paris Agreement on day one to announcing an ambitious greenhouse gas emissions target. But as the president works with Congress to pass the American Jobs Plan, he has an opportunity to address an equally important but often overlooked aspect of the climate crisis: dams and hydropower. They contribute to climate change, send species to extinction, and displace communities. Dams are destructive relics of the past and have no place in an America vying to be a leader in clean energy, water sustainability, and environmental protection while creating the jobs of the future.

In Massachusetts, the recent removal of [three dams on the Mill River](#) reconnected more than 30 miles of blocked fish habitat, reduced the risk of flooding, and removed public safety hazards. At Patagonia, we're proud to stand with Indigenous communities in opposing Hydro-Québec's plan to build a 145-mile hydroelectric transmission line from Canada to Lewiston, Maine, through ancestral territories and carbon-capturing forests — while advertising it to Massachusetts electricity ratepayers as a climate solution. We also support efforts by the Natural Resources Council of Maine, other environmental groups, and state agencies there to remove four dams on the Kennebec River that threaten

the survival of [endangered Atlantic salmon](#).



A surveyor walks the banks of the Mill River, at the site of the former Whittenton Pond Dam, just upstream from downtown Taunton, Mass., July 25, 2018. Charles Krupa/Associated Press

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Hydropower is often marketed as the kind of clean, renewable energy we're supposed to want. It's what dam developers have been claiming for decades. But a growing body of [scientific research shows just the opposite](#). Of the [91,457 dams in the United States](#), it is estimated that [75–90 percent](#) no longer serve any functional purpose and are detrimental to ecosystem health and water quality. Dams flood millions of acres of [wetlands, grasslands, and forests](#),

[killing plants and reducing carbon sequestration](#). And [research](#) shows that the reservoirs they create add nearly a billion tons of carbon dioxide equivalent into the air every year, mostly in the form of methane released as the submerged vegetation and trapped nutrients from upstream break down and bubble potent greenhouse gases to the surface.

As global temperatures rise, dams and their stagnant reservoirs become more harmful and less efficient. Fish are perishing in, and downstream of, warming reservoirs coast to coast. And, as we're witnessing right now in the drought-stricken West, [dams are proving to be an unreliable and unsustainable water supply](#) and [energy solution](#). More numerous fires, floods, and erosion are filling reservoirs with sediment, reducing storage capacity. With shallow waters, even more of this essential resource is lost to evaporation. A United Nations study found that [reservoirs evaporate more water](#) than is used by people. Investing in groundwater recharge, aquifer storage, and better management offers a less expensive and more efficient solution. Stanford researchers have found that the storage capacity of underground aquifers in California [dwarfs the storage capacity of all reservoirs in the state combined](#) and that groundwater storage costs much less than dam storage.

Meanwhile, dams threaten the river systems that move

nutrients from land to ocean, feed plankton and fish, provide clean water for millions of people, protect vulnerable areas against floods and droughts, and transport about [200 million tons](#) of carbon to the ocean each year. Many cultural sites and ancestral lands [important to sovereign tribes and Indigenous people](#) remain submerged behind dams. And as vital sediment sits trapped behind dams, coastal communities lose an essential tool for replenishing beaches, fighting coastal erosion, and fending off rising sea levels. By contrast, the removal of dams can quickly reverse this trend and grow the shoreline. Just months after the removal of two large dams on [Washington's Elwha River](#), the river's sand and cobble delta [grew almost 100 acres of new land](#) out into the sea.

In addition to the harm they cause to people and the environment, dams are hideously expensive. Once dams are built, maintenance costs can be astronomical. All told, [it would cost more than \\$70 billion to rehabilitate US dams](#).



The Iron Gate Dam, powerhouse and spillway on the lower Klamath River near Hornbrook, Calif., Gillian Flaccus/Associated Press

Not only does removing dams help reduce emissions, restore former carbon sinks, and increase climate resilience — it allows us to spend money once used for costly dam maintenance on truly renewable, clean energy and more sustainable water solutions. All of this comes with enormous benefits to ecosystems, like providing a real chance at survival for the many [endangered runs of keystone species like Pacific](#) and Atlantic salmon, and the many species and communities that depend on them. Plus, the cost of removing a dam is often much lower than the cost of maintaining one.

The Biden administration must take three crucial steps. First, it should include significant funding for dam removal in the American Jobs Plan, while excluding new dam investments. We can build back better while creating jobs and fighting climate change, all while benefiting tribal, rural, and economically marginalized communities. Second, it should direct the Environmental Protection Agency to require that all dam facilities study, evaluate, and report data on their full carbon footprint (carbon emissions and lost sequestration). Finally, it should remove electricity produced by hydropower dams from all US clean energy standards and strengthen Federal Trade Commission guidance around false environmental and climate claims related to dam facilities and hydropower.

The American Jobs Plan can be a profound step forward for our country, and for the protection of our planet, especially if the United States harnesses this opportunity to remove the destructive dams of a bygone era and invest in the more efficient, less harmful solutions now available. But we have to act fast. The public needs to urge President Biden and Congress to exclude any new investments in dams in the [21st Century Dams Act](#) and infrastructure package — except for urgent safety matters — and instead use the legislation to fund dam removal.

We can't afford to miss this chance to end our reliance on

these outdated, expensive, harmful structures of the past and make smart investments in our country's future. The nation's health — and ours — depends upon it.

Ryan Gellert is CEO of Patagonia.