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Unplugged: Climate change, free-flowing rivers, and the politics of dam removal

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Glines Canyon dam removal, Elwha River (Washington State), 2014

Abstract

According to International Rivers, 60% of the world's major rivers have been fragmented by dams and other diversions, causing massive displacement, social conflict, and the degradation of riverine ecosystems. It is not surprising, then, that a movement to remove dams has emerged in recent decades, particularly in North America and Europe, but also in Asia, Africa, and South America. The dam removal movement sits at an illuminating crosscurrent of issues in environmental politics that inspire deeper reflection on the intersections between "green" energy (both hydropower and hydrogen), anadromous fish cycles and local extinctions, indigenous rights, the rights of nature, industrial agriculture, ecological restoration and rewilding, and the techno-engineering of natural systems. Proponents of dam removal argue that restoring free-flowing rivers will bring ecological, economic, and cultural benefits, and help provide a measure of resiliency in light of the climate change threat. Opponents argue that removing dams eliminates a reliable renewable resource, impacts agriculture and trade, and imposes high economic costs. This paper will examine claims of bringing "dead" rivers back to "life" through a theoretical sketch of the value of free-flowing rivers and the problem of dams as a tool of ecological and human domination. The paper also looks at case studies of dam removal projects in the American West that have already happened (Elwha, Klamath), and contend that dams on the Lower Snake should also be removed in short order. I will argue that dam removal as a question of ecological, tribal, and multispecies justice (especially in regard to salmon) should expand significantly. I suggest, with help from Deleuze & Guttari, Heidegger, and the rights of nature legal movement, that emerging efforts to remove dams in the context of a warming world raise important questions for environmental political theorists about power, justice, and ecological restoration in the riverscapes of our climate future. The dam removal movement is sure to accelerate globally in the coming decades. As it does the politics of dam removal will offer new arenas for conflict, new models of environmental resistance, and hope for more sustainable riverine communities of people and species alike.

Roll on, Columbia, roll on
Roll on, Columbia, roll on
Your power is turning our darkness to dawn
So roll on, Columbia, roll on

- Woody Guthrie

Roll on, Columbia, roll on.
Roll on, Columbia, roll on.
Once a free-flowin' river, now a big poison pond,
But roll on, Columbia, roll on.

- David James Duncan

Source: Columbia River Inter-tribal Fish Commission (https://critfc.org/salmon-culture/tribal-salmon-culture/celilo-falls/)

Introduction

For nearly 12,000 years, *Wy-am* (Celilo Falls) on the *N'ich-iwana* (Columbia) river was the most important fishing spot for indigenous Americans in the Pacific Northwest (PNW) of North America. Semi-permanent habitation, swelling many times over during periodical salmon runs, roughly matches the timeframe of early settlements of what's now called the agricultural revolution in the Fertile Crescent of Western Asia. Fishing at *Wy-am* was disrupted by the arrival of settler colonists in the mid-19th century. Indigenous fishing up and down the river became an intensely racialized space at prime fishing spots,[1] as immigrants from the Eastern U.S., China, The Philippines, Japan, Norway, Finland sought work for fishing outfits and an incipient canning industry.

Wy-am fishing abruptly ended with the arrival of the dam builders. The Bonneville Dam was complete by the U.S. Army Corps of Engineers in 1957. The dam flooded the historic falls, closing a way of life that linked indigenous communities in commerce, culture, and spirit (at least for now). Treaties from the 19th century guaranteed the right to fish in "usual and accustomed places," but in practice this always took a back seat to the shifting rationales that saw rivers through economic, engineering, and security lenes. "Indian fishing," especially at *Wy-am*, was seen as a nuisance and to some, the dam was a final way to get indigenous fishers to leave. For most residents of the PNW these days, a collective amnesia has taken hold, with the dams that dot the riverscapes as a "natural"

[1] See Montgomery (2004), pp. 51-54

part of the landscape that provides irrigation, transport, recreation, and the cheapest electricity in the nation.

But elders of local tribes who still remember what the river was like before 1957 claim that they can still smell the mist and hear the roar of the falls, even though it is now submerged under concrete and slack water. "If they listen, they can still hear its roar. If they inhale, the fragrances of mist and fish and water come back again," says Ted Strong of the Yakama Nation.[2] The ecological nostalgia[3] of what once was and what yet may be is still strong in such a historic location as this. Returning the river to a free-flowing state can help restore what was lost and help prepare for an unpredictable climate future.

In the 1980s, operators of the Bonneville dam proposed changing the flow of the river to let the falls return for one day so that tribal members could experience what the river always has been: a free-flowing, powerful river that drained mountains from Wyoming to the interior of British Columbia. But no one wanted to come. As Elmer Crow of the *Nimiipuu* (Nez Pearce) summed up the gesture that felt like a re-traumatization, "it was like a funeral"[4]

Salmon, as well as steelhead, sturgeon, and lamprey, also have inhabited the Northwest coast of North America, despite turbulent geomorphic and climactic volatility. The Coast Range of British Columbia and the Cascades in Washington and Oregon are

[2] Columbia River Inter-tribal Fish Commission, https://critfc.org/salmon-culture/tribal-salmon-culture/celilo-falls/

[3] See Lambacher (2017)
[4] Damnation (2014), Patagonia Films.

relatively new, rising above the ancient Columbia river through intense periods of earthquakes, volcanoes, landslides, floods, and glaciation (at least ten major periods in the last 500,000 years). It's strange to think of rivers having a history – they can appear almost timeless – but the Columbia has been around for 15 million years, predating both salmon and the mountains of the PNW.[5] As for fishing, the Pacific sea level only stabilized on the PNW coast 5,000 years ago, but salmon bones have been found in B.C.s lower mainland 6,000 years ago, and of course, earlier on the Columbia thousands of years before that.[6]

Salmon survived and thrived amidst geomorphic turmoil, but they may not persist for much longer, at least in their genetically diverse wild form. As David Montgomery writes, "It is sobering to think that salmon could take the worst that nature could throw at them for millions of years … but that little more than a century of exposure to the side effects of Western civilization could drive them to the edge of extinction."[7] Dams are a central reason why.

The era of new dam building in North America may be over, but a rollback of sorts is emerging. Dam removal projects in Maine (Kennebec), Washington State (Elwah), and California (Klamath) are showing people it is possible to dismantle, at least in part, the technological domination of nature that has been a core feature of settler colonialism and empire.[8] Removing dams on this scale has never happened before, so there is a lot of experimentation and unpredictability in the mix. But the movement offers promise by way

[5] Montgomery (2004), 179
[6] Montgomery (2004), 41
[7] Montgomery (2004), 38
[8] See Worster, *Rivers of Empire* (1985)

of dismantling pieces of overly managed riverscapes. Dam removal is not just about restoration of free-flowing rivers, as important as that is to the health of rivers, it is about the re-emergence of relationships between ecosystems, species, people, and ways of life.

The dam removal movement has gained momentum in North America and Europe, and to a lesser extent in Japan and South Africa. But in much of the rest of the world, ambitious plans for large dams have proceeded apace, such as, *inter alia*, on the Nile in Ethiopia, the Yangtze in China, the Gualcarce in Honduras, the Cerrado in Brazil, the Tigris and Euphrates in Turkey, and on the Mekong in Laos and Cambodia, leading to significant displacement, environmental resistance, and cross-border disputes.

Dams are touted as a green source of energy, so in the context of climate change they may seem to provide unqualified benefits in a hotter future. But the reality is much murkier. What the politics of dam removal reveals in the context of climate change is a new arena for contestation between economic interests and species survival, settlement engineering and tribal sovereignty, and the status of giving legal personhood to entities such as rivers.

In a way these clashes between interests and values return to an earlier era when the environmental movement fought to resist the dam builders. But what about dam removal is different from trying to prevent construction in the first place? How does climate change impact the arguments for dam removal? 21st century dam removal efforts have shown that dismantling dams are not only possible in certain cases, they also open up a broader challenge to the techno-engineering of river systems and the domination of

nature mentality that has long accompanied settler colonialist visions of development, visions still being offered as paths to prosperity by forces of globalization. But the "Overton window" has shifted and what was once considered radical in regard to dismantling dams is, in a growing number of cases, considered feasible. I will contend that dam removal is and will become an important strategy to enhance multispecies justice, tribal rights, and the legal personhood of river systems. Unplugging rivers in key spots, after considerable democratic debate with all stakeholders (including species and entities like rivers), will not only restore local ecosystems but help rivers and humans adapt to the changing climate. And as bioregions re-emerge along waterways, human communities can *discover* or *remember* more sustainable and just way to survive in the hotter centuries to come.

The paper will unfold in the following way. Part 1 engages with theoretical and political issues with regard to dam removal. Part 2 looks at the case for removing the dams on the Lower Snake river in Eastern Washington, with precedent from dam removal models elsewhere.

What was once a mighty river is now a ghost.
— Edward Abbey, *The Monkeywrench Gang*

Think of a river. How strange is it that English only has one word to describe a force that is constantly in flux.
— Lindsey Brodeck, *Afterglow: Climate Fiction for Future Ancestors*

Part 1: Theoretical issues and Political Contests: Dams and Dam removals

Headwaters

What does it mean for a river to flow freely? We typically understand this in negative terms, as in a lack of or a removal of obstacles to a river's natural flow. But free flowing rivers are full of obstacles – beaver dams, logjams, landslides – and are, in fact, constantly changing course according to seasonal and shifting ecological conditions. And yet they still flow as self-willed entities with a kind of autonomy on their way to the sea.

A different approach is to ask what is lost when a river no longer flows freely due to impediments like dams? What interspecies relationships are altered? How do humans act with the river differently? What is gone forever? What does the obstruction of a river's natural flow say about power, domination, or the right of a river to flow freely once again? What are the *politics* of dam removal and what does it say about crosscurrents in the environmental movement?

Dams have tremendous negative impacts. They reduce biodiversity, increase sediment, damage water quality, prevent fish migration, and displace people. But they also provide many benefits and environmental goods. In the context of climate change, both in terms of mitigating effects by helping society transition from fossil fuels and also adapting

to a warmer wetter world by managing flood risks, dams yield important environmental goods. The question, as with most things, is what the right balance is. And where, when, and why dams are operating. What is the value of dams in the decades, even centuries, to come? Will hydropower remain a central player in our renewable energy future? What is the value of free-flowing rivers, if not in whole at least in part? Do rivers have rights? What relations of power coalesce to remove destructive and unnecessary dams? When looked at holistically from a multispecies justice perspective, do we need dams at all? What are minimal and maximal approaches to removing dams?

Tributaries

Dams are some of the oldest human infrastructures in the world. They control floods, irrigate fields for crops, provide power, aid in navigation, and assist commerce. According to the hydraulic civilization thesis put forth by quasi-Frankfurt School theorist Karl Wittfogel, controlling water was the key to empire building in China, India, Egypt, Mesopotamia, and Peru.[9] And one key to controlling people and building a hierarchical society is an increasing dependence on elite state power for life and livelihood. Some even likened dams to "gods" that transformed the deserts of the Middle East and made them bloom with crops and food.[10]

[9] Wittfogel (1957)
[10] Worster (1985), 38

Dams were instrumental in the Industrial Revolution. Before fossil fuels, factories were located along rivers that had small dams for the production of cotton, silk, timber, and other manufactured goods.[11] But even after fossil fuels, dam-building was seen as a necessary feature of industrial development. Massive dam projects, often with support of institutions like the World Bank, spread throughout the world in the 20th century, with boosters supporting projects as a ticket to compete in global markets, even at the cost of human displacement and massive environmental damage.

The same logic of settlement and empire continued in the arid American West with the dam builders. Donald Worster in *Rivers of Empire* viewed the "hydraulic civilization" thesis as empire-building (not merely as a tool of settler colonialism). With capture by corporate and state interests California, the Southwest, and on the Columbia in Washington and Oregon, the Jeffersonian dream of harnessing water to support a democratic society of agrarian small farmers was but a distorted ideological illusion.[12] The dams on the Colorado river are a good example. After successfully blocking plans to put dams in the Grand Canyon in the 1950s, environmental groups (foolishly) agreed to not resist construction of Glen Canyon Dam upstream from Hoover Dam. What is now "lake" Powell flooded 125 slot canyons, remnants of Pueblo dwellings and art, and blocked sediment from nourishing ecosystems downstream. The dams on the Colorado river helped to create the ecologically precarious cities of the Southwest, like Phoenix and Las Vegas (still some of the fastest growing places in the country even during a time of drought

[11] Montgomery (2004), 22
[12] Worster (1985), 4

and water stress). But while most think of golf courses in the desert and endless strip malls as the profligate end use of Colorado's water, roughly 79% goes to agriculture, mainly to grow alfalfa and hay for cattle and sheep, with nearly 20% shipped to markets in Saudi Arabia, Japan, and China.[13]

According to the Global Dam Tracker database, 3,700 large dams (with power generating capacity of 1 MW+) and 82,800 smaller ones are in operation, under construction or being planned. Not all are constructed for hydropower, but dams are increasingly seen as a central strategy in steps toward a "clean" energy future. In 2019 they accounted for 16% of global electricity production and 60% of renewable energy.[14] Promoters of the benefits of dams highlight it as a source of cheap and clean energy, while also citing other economic benefits. Data centers to power the internet, bitcoin mining, and, in the USA, the initial plans for green hydrogen infrastructure are located next to the electricity generation that hydropower provides.[15]

But despite the framing of dams as a kind of green development, many dams are relics and don't provide the benefits their defenders describe. Some never should've been built in the first place. And for many dam removal advocates, some being built now shouldn't go forward.

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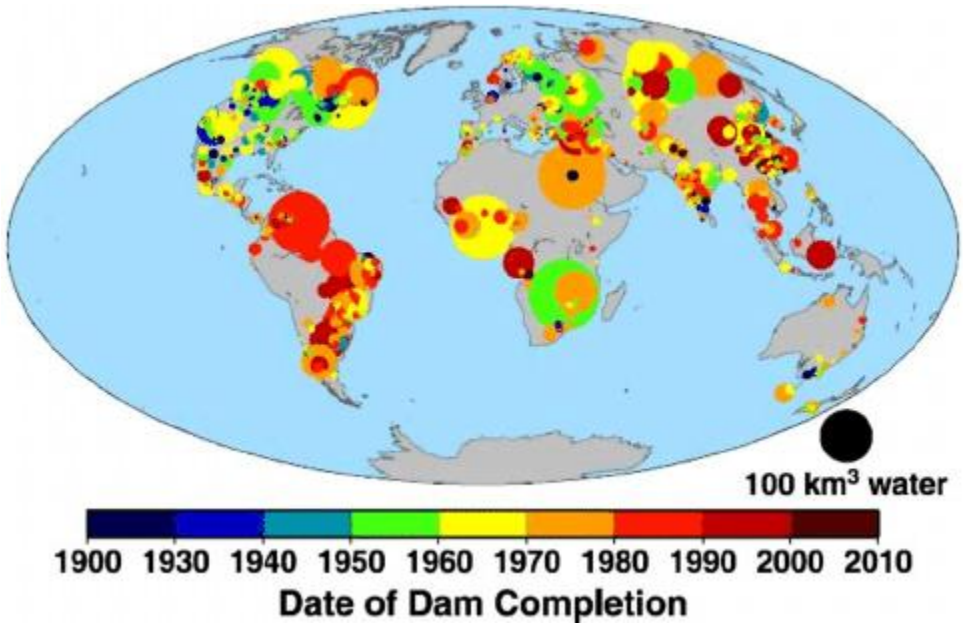
[13] Carrier (2023), "Why is the Colorado River Running Dry?"
[14] Global Dam Tracker database: https://www.nature.com/articles/s41597-023-02008-2
[15] Seattle Times, WA hydrogen to get boost from share of 1bn$ in funding: https://www.seattletimes.com/seattle-news/environment/wa-hydrogen-production-to-get-a-boost-from-share-of-1b-in-funding/

The movement for dam removal comes at a moment when new dam construction has slowed in North America and Europe, but is on the rise in Asia, Africa, and South America. Most big rivers have already been damned, but smaller projects proceed apace. An exception is the Grand Renaissance Ethiopia Dam, completed in 2023. Egypt and Sudan have denounced the massive hydroelectric project on the Nile, with the Egyptian foreign minister calling the project "illegal" and existential threat, as flows from the river account for 97% of its water needs.[16]



Source: https://www.researchgate.net/figure/Timeline-of-completion-of-some-of-the-large-dams-around-the-world_fig3_273432428

[16] *Al Jazeera*, Filling of Grand Renaissance Dam Complete, Ethiopia Says.

Deeper currents

In *A Thousand Plateaus*, Deleuze and Guttari distinguish between *smooth* and *striated* spaces.[17] While theoretically complicated with a myriad of expressions, smooth spaces (the desert, the sea, time) become striated by human measurements. The development of modernity (science, the state, settler colonialism, resource extraction) is a dynamic tension between the smooth and the striated in which the latter gradually takes over.

How do concepts of *smooth* and *striated* relate to dams and rivers? In one sense, free-flowing rivers represent a smooth space, a portion of the hydrologic cycle in constant movement, even if in their natural state they are quite striated in spots by timber, boulders, landslides, and beaver structures. Dams interrupt this flow, turning rivers into striated space for irrigation, hydropower, and navigation. But in doing so, damned rivers become smooth space for the operation of capital flows, permitting agricultural products to reach global markets, power to electrify the region and beyond, and, in the case of the Columbia river, manufacturing to produce war machinery and the plutonium in nuclear weapons. As Hardt & Negri write in *Empire*, "The world market … requires a smooth space of uncoded and deterritorialized flows."[18]

Dams also, and quite literally, represent what Heidegger calls *Bestand* (standing reserve). In *A Question Concerning Technology*, the hydroelectric plants on the Rhine for Heidegger become a way of "unlocking, transforming, storing" the power of the river to the

[17] See Deleuze & Guttari, Ch. 14 (1987)
[18] Hardt & Negri (2000), 333

point where it is no longer a river in a landscape, but a striated object for human satisfaction and control.[19] Heidegger goes on to write, "Unconcealment comes to pass in conformity with which the world of modern technology reveals the real as standing-reserve … Modern science's way of representing pursues and entraps nature as a calculable coherence of forces."[20] A damned river is a way to "pursue and entrap nature as a calculable coherence of forces."[21] By Enframing (*gestell*), humans turn nature into a fixed entity for efficient use, which is what happens when rivers are damned and see only in terms of their utility. A free-flowing river, by extension, is a kind of *poiesis*, ever changing and ever new.

Over time, a *shifting baseline syndrome* kicks in as we become dependent on the benefits of what the dam provides, no longer remembering what existed before or what could be in the future. As philosopher Steven Vogel writes, we are in danger, through our alienation, of failing to recognize the world that we have transformed.[22] An in our "incessant drive" to remake nature, we end up dominating ourselves.[23]

The environmental historian Richard White refers to the techno-management of a river system with dams as an "organic machine."[24] Such a "machine" illuminates not only social divisions about what is a river is but a site of *politics*. As White writes,

[19] Heidegger (1977), 16
[20] Heidegger (1977), 21
[21] Ibid., 21
[22] Vogel (2011), 201
[23] Worster (1985), 53
[24] White (1995)

> The logic of economists has fashioned one debacle after another. Arguments over the river proceed as if everyone speaks about the river in one tongue. But, in fact, this is a river subdivided into separate spaces whose users speak to each other in a babel of discourses: law, religion, nature talk, economics, science, and more. The experts and regulators empowered to solve the river's problems only bare our divisions.[25]

Both supporters and detractors of dams bring to bear different worldviews about relationships to the river, which is why the politics of dam construction or removal is freighted with such passion. And as the previous quote insinuates, actual management of dams – the experts and regulators – involved in making decisions about a dam's future reveal echelons of power in a society at a given moment. Which is why when the first dam removal projects take place on a larger scale on major rivers (not just decommissioning small dams or abandoning outdated barriers) it reveals shifts in the echelons of power. When breaching is shown to work, the imagination of what is possible expands.

Multispecies justice/rewilding

Dam removal should be seen as complementary to the multispecies justice framework. Celermajer defines multispecies justice as,

[25] White (1995), 113

> A theory of justice that includes not only the interests of all humans but of the nonhuman, such as other animals, plants, forests, rivers and ecological systems. Taking their interests seriously as 'justice claims' means there is a moral and political obligation for the basic institutions of society – including our political and legal systems – to take those interests into account when making decisions. They cannot be dismissed simply because they are inconvenient or costly (for certain humans) and attending to them is not a matter of charity or generosity.[26]

Dam removal in the context of multispecies justice means actualizing decisions that repair past harms to rivers, species, and human communities that depend on them for material and spiritual nourishment.

What is known in the literature as new water justice movements (NMWJs),[27] dam removal campaigns seek to "defend and re-enliven" hydrosocial territories. As defined by Boelens et.al, hydrosocial territories are:

> The contested imaginary and socio-environmental materialization of a spatially bound multi-scalar network in which humans, water flows, ecological relations, hydraulic infrastructure, financial means, legal-administrative arrangements and cultural institutions and practices are interactively defined, aligned and mobilized through epistemological belief systems, political hierarchies and naturalizing discourses."[28]

[26] Celermajer, 2022
[27] See Boelens et.al., (2022)
[28] Cited in Houart (2023), 52

Nestled in a broader framework of multispecies justice, dam removal projects help promote resistance to the privileging of justice claims by certain humans for familiar economic or development reasons.

Dam removal should also be linked to the rewilding movement. The deliberate de-construction and "letting be" calls for a reduction in the human built environment so that natural systems can return as self-willed with a greater degree of integrity. Criticized by some as a cosmetic return of "nature" so that that viewscapes *look* certain way that appeals to human sensibility, rewilding can be more than just an aesthetic form of managerial control. Minha Tanasescu makes a distinction between certain restoration and rewilding. Restoration is backward looking, seeking to reclaim landscapes of some remembered past. Rewilding is about the future, creating the conditions for self-willed systems to unfold along with a changing climate with some degree of integrity and autonomy.[29]

Rights of nature

The Rights of Nature movement is a burgeoning legal theory rooted in traditional indigenous knowledge arguing that natural entities and ecosystems have the right to exist and flourish. Different streams of international environmental law – heritage convention, indigenous rights, wild law, public trust doctrines, ecocide – have been cited to support rights of nature campaigns in efforts to press claims in court, and in some cases change

[29] See Tanasescu (2017)

constitutions.[30] And after the deliberate bombing of the Kakhovka dam in June 2023, which suddenly let loose water, tons of oil, and other debris into the Dnipro estuary on the Black Sea, including a national park that is part of the European Emerald Network of protected areas, Ukraine has formally charged Russia with the crime of *ecocide*.[31] Some environmental groups are pushing for *ecocide* to be a grave crime on the level with war crimes and crimes against humanity.[32]

After Ecuador became the first country to recognize rights of nature in its constitution in 2008, legal activists have sought to apply the principle to rivers. In 2017, a New Zealand court granted the right of legal person to the Whanganui river. Later in 2017 a court in India granted the same status to the Ganges and Yamuna rivers. In the USA, also in 2017, a case was brought in federal court (Colorado River v. State of Colorado) to press claims, the first in an American context.[33] Similar declarations have subsequently taken place for the Vilcabamba in Ecuador, the Atrato in Columbia, and the Magpie in Canada.[34] In 2023 a network of international conservation organizations are working on mobilizing a Universal Declaration of the Rights of Rivers, seeking to embed in law their claims to standing and justice as living entities.[35] At the time of this writing (March 2024), a court in Peru just affirmed an intrinsic for the Maranon river flow freely and be free from pollutants like oil spills

[30] Tanya Sanerib, International Legal Director, *Center for Biological Diversity*. Personal communication.
[31] Schauenberg: https://www.dw.com/en/ukraine-destroyed-kakhovka-dam-amounts-to-ecocide/a-65849713
[32] Stop Ecocide International statement to the ICC (2021): https://asp.icc-cpi.int/sites/asp/files/asp_docs/ASP20/ASP20.GD.StopEcocide.07.12.pdf
[33] Community Environmental Legal Defense Fund, Rights of Nature Timeline: https://celdf.org/rights-of-nature/timeline/
[34] Houart, 2023
[35] Universal Declaration of the Rights of Rivers: https://www.rightsofrivers.org/

and mine tailings, the result of a year's long, indigenous-led campaign to grant the river a right of nature status. Further, bioregional campaigns, like the Salmon Nation concept for the Northwest coast of North America from Northern California to Alaska and the Yukon, aim to re-orient notions of territorial identity around salmon migration and the rivers they inhabit, working with the rights of nature model on a large regional scale.[36]

Rights of nature and dam removal

In 2019, the Yurok Tribe in California declared rights of nature personhood for the Klamath river, a river, as will be seen below, that has just commenced the largest dam removal project in the world.[37] According to the resolution, it "establishes the Rights of the Klamath River to exist, flourish, and naturally evolve; to have a clean and healthy environment free from pollutants; to have a stable climate free from human-caused climate change impacts; and to be free from contamination by genetically engineered organisms."[38] As partners in the dam removal project on the Klamath to save local salmon runs from extinction and regenerate the ecological health of the river by removing outdated and marginally productive dams, the Yurok's claim for the Klamath to have a right to flow freely again shows their commitment to manifesting a rights of nature framework.[39] The rights of

[36] Salmon Nation: https://www.salmonnation.net/; See also: *Laxapoo* (A Salmon Nation), Patagonia Films
[37] Siskiyou News: https://www.siskiyou.news/2023/10/26/the-klamath-river-has-the-legal-rights-of-a-person-a-yurok-tribe-resolution-establishing-rights-of-the-klamath-river/

[38] Yurok Tribal Council (2019): http://files.harmonywithnatureun.org/uploads/upload833.pdf
[39] For a short film on the fight to undam the Klamath, see: *Undammed* (Patagonia Films, 2024): https://www.youtube.com/watch?v=PoZKMtqK8u4

nature movement the world over has been strongly influenced by indigenous worldviews and activism. When combined with claims based on treaty rights and indigenous sovereignty, real headway can be made be made with regard to dam removal as a legal and political strategy

If the critical theorists of the Frankfurt school are correct, then in our drive to remake nature, domination, not freedom, is out lot.[40] Dam removal can thus be seen as one strategy to resist a relationship with nature based on standing-reserve. The linking of multispecies justice, rights of nature, and indigenous sovereignty claims make a powerful case to advance dam removal projects around the world. In the Pacific Northwest, ground zero is now on the Lower Snake river in Easter Washington.

[40] Worster (1985), 53.

People have the freedom to change their behavior, whereas fish do not.

■ David Montgomery

To give up 3.5% of the region's hydropower frightens some because no one's done anything like this before. But no nation on earth has erected 75,000 dams before … It is the unwillingness to give up a mere four deadly dams that terrifies me – because no person, no family, no country, and no civilization in history has remained viable for long without engaging corrective acts of self-criticism, self-sacrifice, and restoration.

■ David James Duncan

Part 2: The Case of the Lower Snake Dams and their Removal

Sensing what was to come, Assistant Secretary of the Interior under Eishenhower Ross Leffler proposed creating a salmon refuge on the Snake River.[41] But like other ideas for fish sanctuaries in the west, it didn't happen. The "Army's river" was given over to the engineers. It is interesting to imagine what counterfactual history might have transpired if Leffler's plans became reality. Dam removal advocates for the Snake want to make this counterfactual history a history of the future.

[41] Montgomery, 237

The U.S. Army Corps of Engineers claims confidently that dams are "clean, renewable, reliable, and efficient," and helped to "build the Inland Northwest."[42] But the lower Snake River dams have a history, and in the frenzy of dam construction of the 1950s, the budding Cold War rivalry with the Soviet Union was a key factor in Congressional approval of the dams in 1955. Dams on the Snake expanded the dam network on the Columbia that was crucial for WW2 weapons and manufacturing.[43] Another central reason was to build a system for barge traffic that would make Lewiston, Idaho – 450 miles inland – a seaport for the region's wheat, dry peas, lentils, timber, and other products. Yet another reason was for irrigation of the fertile Palouse, whose rich volcanic wind-blown soils created an agricultural bounty, even if at the cost of eliminating 98-99% of the region's

[42] U.S. Army Corps of Engineers, Lower Snake River Recreation-East pamphlet.
[43] Duncan (2001), 196.

native prairie ecosystems. The first Snake River dams first came online in the 1960s with Ice Harbor dam. The last, Lower Granite, was operational by the mid-1970s.

Almost immediately, the impact on the historically important salmon streams of Idaho was devastating. Dams were not built with fish passage in mind and migrating wild salmon had a difficult time making it upstream. With miles of slack water behind dams, the "river" on the Snake has become a series of lakes, making downstream travel also challenging. Smolts that would normally flush down to sea on a free-flowing river now have to swim long distances. If the going is slow, the trip takes too long, and the fish mature too fast.[44] Billions have been spent trucking fish, building fish ladders, making turbines less lethal, and creating hatcheries (which is another problem for wild fish), with the result being ever diminishing returns.

The crisis grabbed national attention in 1991 when a lone female sockeye named Sally returned to Redfish Lake in the Sawtooth mountains of Southern Idaho (900 miles from the sea). The next year, a lone male sockeye – dubbed Lonesome Larry – made it to Redfish. Both were photographed for the media and publicized to highlight the plight of migrating salmon above the dams on the Lower Snake, before being clubbed to death to provide eggs and sperm for a hatchery program. In an ironic twist, Larry's body ended up on display in the office of a dam construction services company.[45]

One chestnut defines the PNW as anywhere the salmon can get to. With dams blocking passage of salmon upstream the Columbia and Snake systems, and continued

[44] Montgomery, 186
[45] Montgomery, 178

degradation by mining and timber industries, the figurative territory of the PNW is seriously threatened to be cut in half.

The salmon crisis in the region became bigger in 1994.[46] After listing several salmon and steelhead species as threatened, a federal judge ordered review of policies under the ESA to restore runs. Breaching was never part of the original plan in any serious way, but Judge Marsh, who oversaw the legal proceedings wrote that "small steps" with only "minor improvements and adjustments" would no longer work. A "major overhaul" was needed. To some, this meant breaching the dams.

Since 1994, the federal government has been sued, and lost, five times by a coalition of environmental groups for inadequate plans to save salmon runs. The critical problem of the lower Snake River dams was front and center. Adding to the pressure is the connection made between declining orca populations and historically important chinook salmon runs in the Columbia system (98% of an orca's diet is the fatty chinook salmon). With each passing year, and pressure by environmental groups and tribal leaders throughout the PNW, dam breaching became the central focus in the fight to save salmon, restore treaty rights, and free the Snake River. As chairman of the Nez Pearce declares, breaching the dam would "restore tribal treaties under to their rightful place under the rule of law."[47] 5,500 miles of quality fish habitat could be opened up if the Snake River dams were breached.

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[46] 13 species of salmon and steelhead are now listed under the ESA.
[47] Smith, High Country News (2023): https://www.hcn.org/articles/dams-lower-snake-river-dams-closer-to-coming-down-with-new-agreement/

Source: *High Country News*: https://www.hcn.org/articles/dams-lower-snake-river-dams-closer-to-coming-down-with-new-agreement/

Models of dam removal

A key paradigm shift emerged when actual models of dam removal on the scale required for the Snake River dams became a reality. The Elwha and Glines Canyon dams came down on the Olympic Peninsula in the mid 2010's, along with the Condit decomissioing on the White Salmon in the Columbia Gorge.[48]

Dams on the Penobscot in Maine and Sandy River in Oregon also came down. According to American Rivers, 65 dam removal projects took place in 2022.[49] Most were small, mostly outdated or abandoned structures in Ohio, Virginia, and Virgina. This prominent river advocacy groups estimates that 30,000 more dams can be removed to

[48] *DamNation* (2014), Patagonia Films
[49] American Rivers, https://www.americanrivers.org/2023/02/dam-removals-continue-across-the-u-s-in-2022/

"revitalize streams and bring rivers back to life."[50] The removal of all dams on the Klamath River in Oregon and California by the end of 2024 – currently the largest such project in the world – serves as the latest model whereby governments, tribal groups, scientists, and environmental organizations are showing that dam removal at scale is possible.

Source: Damnation film. Painted crack by an environmental activist foreshadows Glines Canyon Removal on Elwha River in WA State on the Olympic Peninsula.

[50] Ibid.

Counter-resistance

Advocates for breaching the Lower Snake dams are watching these dam removals closely. But their enthusiasm is currently frustrated. Federal officials have long kicked the can about the *possibility* of breaching the dams for years. But as dam removal advocacy has hit a stronger current, opponents of removal have also become more vocal. Republican representatives in Eastern Washington have done what they can to block dam removal momentum on the Lower Snake. In 2012, Rep. Doc Hastings introduced the Saving Our Dams and New Hydropower and Jobs Act, which aimed to prevent any federal money from being used to remove, in whole or in part, any dam in the United States without explicit approval of Congress. The bill also tried to stop any federal money from supporting studies of dam removals.[51] More recently, Republican representatives frame saving dams on the Lower Snake as a matter of "energy security." The Northwest Energy Security Act would protect the dams from breaching because, as Rep. Dan Newhouse argues, "The Four Lower Snake River Dams are integral to flood control, navigation, irrigation, agriculture, and recreation in Central Washington and throughout the Pacific Northwest—to put it simply, we cannot afford to lose them."[52]

Uniform Republican opposition to breaching the dams is not surprising. But what was astonishing was the plan put forth by *Republican* representative Mike Simpson of Idaho in 2021. Simpson proposed breaching the lower Snake River dams, compensating

[51] Chasan, "Doc Hastings launches new effort to save dams from salmon." *Crosscut*: https://crosscut.com/2012/08/doc-hastings-snake-river-dams-bill-chasan
[52] Press Release (March, 2023): https://newhouse.house.gov/media-center/press-releases/newhouse-introduces-bill-protect-four-lower-snake-river-dams-clean-0

the losers in hydropower (to the tune of 30+$billion dollars), transportation, and agriculture, and halting environmental groups from suing the federal government over salmon for decades.[53] Looked at from the perspective of 5,500 miles of Idaho streams impacted by the Lower Snake dams, Simpson's stance is reasonable, even if out of step with the rest of an increasingly *anti*-environmental House caucus.

Agreement?

Simpson's plan was not adopted, for a number of political reasons. But key ideas did shape where breaching the dams on the Snake currently stands. Democratic officials in Washington and Oregon, quietly interested but publicly noncommittal on the issue of dam removal, signaled support for a continued dialogue between relevant stakeholders. They also came firmly out in saying that the services that the dams provide must be fully replaced before any dam removal could take place. Also, environmental groups would need to stop suing the federal government for not doing enough to rescue salmon and steelhead runs by ignoring the best available science and treaty obligations to five Inland Northwest tribes. Since 1994, environmental groups have won *five* major litigation cases that have forced the issue of breaching dams to the top of the agenda.

In 2023, after two years of talks, the Biden administration brokered an agreement between the federal government, tribes, and environmental groups. The agreement is for the federal government to spend 1billion on wild salmon recovery efforts, help build tribal

[53] See Wilson, "The Northwest in Transition"

renewable energy projects that could potentially replace power lost to breaching, and study how to replace the services dams provide (along with the thorny issue of compensating losers). The agreement also explicitly puts off the issue of breaching until a plan is ready for Congress to consider and forbids environmental groups from suing the government for years to come.

The agreement is a Rorschach test when it comes to dam removal. Some, like Earthjustice attorney Amanda Goodin, says that "Instead of attempting to defend yet another illegal dam operations plan in court, the Biden administration is setting a new course, following the science and the lead of the Tribes and States, to begin to replace the services of the Lower Snake River dams so that they can be breached."[54] Daryl Olsen of the Columbia-Snake Irrigators association says that dam removal is off the table forever. Kurt Miller of the Northwest Public Power Association says their interests were not really heard, and threatened power rate hikes and the possibility that the deal would collapse if the federal government didn't fulfil its obligations. Shannon Wheeler of the *Nimiipuu* remarks that "I don't like this agreement … because we are placed last again, the fish are last, everybody else is made whole before we even get to take a step. Irrigators are ahead of us, transportation is ahead of us, even tourism is ahead of us. And we are actually losing on spill, our summer and fall runs, those are rolled back."[55] Dam removal on the lower Snake

[54] Mapes, *Seattle Times*, December 2023: https://www.seattletimes.com/seattle-news/environment/biden-administration-promises-1-billion-more-for-salmon-clean-energy-but-punts-on-lower-snake-river-dam-removal-in-major-agreement/
[55] Mapes, Ibid.

River remails in limbo, with powerful undercurrents pushing to breach, and the political infrastructure holding, for now.

Is hydropower green?

The flow of familiar for pro-and anti-dam arguments has taken interesting twists and turns when climate change enters the discursive space. Dam protection advocates also argue that in a warming world, electricity from hydropower provides reliability to the grid. The heat dome of 2021, which killed scores of people in Oregon and Washington (and hundreds in British Columbia), is touted, along with providing energy during cold snaps, as a security buffer against the extremes of climate change.[56] Reliability of energy for the local grid makes sense for many, but hydropower producers in the PNW have long sold power to the lucrative California markets, even when their power supply was being manipulated by Enron in the early 2000s in what was a massive suck of money from California to Texas.

The instances of climate-induced weather events and dam energy politics get more complex, however. In 2023, the residents of Seattle were hit with a 4.5% surcharge when a wildfire on the "wet" side of the Cascades threatened dams on the Skagit River that provide much of Seattle's electricity. Seattle's "green" power source became threatened by climate change induced wildfires that end up costing consumers more than they are used to.

[56] Miller, *Seattle Times* June 23, 2023. "Heating planet demands we keep the Snake River dams" https://www.seattletimes.com/opinion/heating-planet-demands-we-keep-lower-snake-river-dams/

The energy arguments have valence in the context of Washington State. And Powerful constituencies in agricultural and barging industries dominate local politics. But we need to look more closely. In 2022, nearly 2/3 of Washington's energy came from hydropower. With state mandated goals outlining a fossil fuel-free energy economy by 2045, hydropower is here to stay, even though with climate future of more rain and less snowpack, this resource will become less predictable.[57] However, the dams on the Lower Snake produce 3.5-4% of energy, enough to produce power for a city the size of Seattle. Not insignificant, but the power producing capacity of the dams is marginal in comparison to bigger dams on Columbia. Navigation is threatened by dam breaching, but farmers always trucked or used rail to ship their goods to market before Lewiston, Idaho was an inland seaport. Irrigation is a big concern in the semi-arid region, but the dams on the Lower Snake are "run of river dams," which mean they are not designed for flood control, nor do they provide extensive irrigation, except for Ice Harbor near the Tri-Cities. Irrigation does not need to come from dams, and it is possible to irrigate from a free-flowing river with less cost than it takes to operate costly dam operations.[58] Of course, from the perspective of salmon, the dams are obstacles, a warming world creates warmer reservoirs that they have to swim through, and power concerns are irrelevant except insofar as they support more agriculture and resource extraction industries, which further put pressure on their habitat.

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[57] Zhou, Seattle Times, Feb. 13, 2024. "How Clean is WA energy? We lead the country in only one way." https://www.seattletimes.com/seattle-news/environment/how-clean-is-was-electricity-we-lead-the-country-in-one-way/

[58] See Damsense: https://damsense.org/lower-snake-dams/

According to Gary Wockner, the idea that dams are "green" because they provide hydropower is vastly overstated. He argues that, on balance, dams release significant amounts of methane, disrupt natural flow, reduce carbon sinks, deplete biodiversity, deprive inland forests of vital nutrients, block sediment that can rebuild beaches, decimate fish populations, lose up to 10% of fresh water to evaporation, and are unprepared for the climate events of the future.[59] Recent dam collapses in Libya and India are a cautionary sign that current dams were not designed for the extreme events likely to increase in the years to come.[60]

As climate change melts glaciers, free flowing rivers would also salmon to re-populate new habitat deep in the mountains. Sounds hopeful, but salmon hit another hard reality in the PNW – mining claims. Over 60% of glaciers in western Canada are expected to disappear by 2100, the environmental change creating new river systems and habitat for salmon. But new research indicates that retreating glaciers are also actively being explored by mining companies as new sources of extraction.[61]

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[59] Wockner, *The Revelator* (2023)
[60] Said & Aly (2023); See also Al Jazeera on India's deadly Himalayan floods: https://www.aljazeera.com/gallery/2023/10/6/deadly-floods-in-indias-himalayas-after-lake-bursts-through-major-dam
[61] Breda, Seattle Times, Dec. 13, 2023. https://www.seattletimes.com/seattle-news/environment/new-salmon-habitat-created-by-melting-glaciers-could-be-threatened-by-mining-claims-study-finds/

Author and son (pictured) visited one of the Lower Snake dams (Lower Granite) on a 105F (41c) day in August 2023

Conclusion

Dam removal is a political choice with profound consequences. As Donald Worster writes, to use a river without violating its intrinsic qualities may be less profitable, but in the end may lead to more local autonomy and less federal regulation by the state.[62] But in modern societies with ever-increasing amounts of stuff and pressure to accumulate and

[62] Worster (1985), 331-333

consume as ends in themselves, a retraction from the politics of growth and progress is inherently sticky. As thinkers like Rousseau to E.F. Schumacher have emphasized, an increase in needs is tied to an increase in dependence.

A free-flowing river allows us to, as Schlosberg might say, treat it as "living entity" with its own integrity.[63] And in doing so, helps us relate to the landscape and other species with greater interdependence with less of a techno-managerial mentality. It is a step back from the control of natural systems as standing-reserve (*Bestand*), even if a modest one. In the context of climate change, river systems that are unplugged can better adapt to change, and support species, habitats, and the lives and livelihoods of people who depend on healthy freshwater ecosystems.

While the current effort to remove dams on the Lower Snake is stalled, they are closer to coming down than they have been since they were foolishly created at the end of the dam-building frenzy of the mid-20th Century. Powerful political interests are in the way, but so is the argument that hydropower is a renewable resource in the context of climate change. The latter argument pits one set of green values against another.

As Rafi Youatt argues in his Interspecies chapter in the *Oxford Handbook of Environmental Political Theory*, power in an interspecies framework is "relational, practice-centered, and rarely held as a capacity by any given entity." To Youatt, this way of thinking about environmental politics is geared toward a kind of pragmatism that "involves shifting

[63] Schlosberg (2007), 148

modes of interspecies alliance, enmity, and inquiry."[64] I suggest that removing dams puts all three of these things in motion. As environmental political theorists, it is incumbent to think of the issue of dam removal holistically, not just as a discrete matter of green energy, or agriculture, or barge transportation, with its usual array of political interests. It is also a question of values, power, multispecies justice, and an envisioning of what the role of free-flowing rivers should be on a warming planet.

Dam removal as a strategy can be seen in minimal and maximal terms. In the bigger picture, dam removal to date has been pretty minimal given the extent to which rivers have been dammed, fragmented, dredged, altered, and controlled. As David James Duncan reminds us, there is no handbook for dam removals at this scale, so the approach is understandably modest. Nor have dam removals so far really been a *primary* strategy to deal with species extinction or to affirm treaty obligations. As Shannon Wheeler, chairman of the *Nimiipuu* (Nez Pearce) comments, "breaching always comes last."[65]

But it is worth imagining a more maximal approach in the decades to come. If taking out dams on the Lower Snake were to become a reality, removing larger structures on the Columbia would be the next target. The key to removing these would be whether hydropower remains as a "green" form of renewable energy. It is not inconceivable that the transition to a green energy economy develops to the point where the hydrosocial costs of

[64] Youatt (2014), 222
[65] Mapes, Seattle Times. December 2023: https://www.seattletimes.com/seattle-news/environment/biden-administration-promises-1-billion-more-for-salmon-clean-energy-but-punts-on-lower-snake-river-dam-removal-in-major-agreement/

dams are looked at holistically and arguments to remove them based on saving species, rights of nature, alternative technologies, and indigenous sovereignty become more acceptable by more people. Shannon Wheeler of the *Nimiipuu* speaks of an "ancient covenant between salmon, the animals, and us, as humans."[66] It is not inconceivable, then, that *Wy-am* (Celilo Falls) can once again re-emerge with a roar of mist, salmon, and memory. Other falls on other rivers should be permitted to tumble and rumble again.

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[66] Frankovich & Smith, Spokesman-Review. May 2021: https://www.spokesman.com/stories/2021/may/09/the-us-promised-the-nez-perce-fishing-rights-but-w/

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