

The Legal Battle to Save the Southern Residents

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One of the most iconic species of the Pacific Northwest is the orca, more specifically a population of orcas known as the Southern Residents. Several human-caused factors pose a threat to these whales, whose population is dwindling. The most significant of these threats is lack of food; the Southern Residents feed almost exclusively on salmon. Since the Great Depression, dams have been erected all over the region's rivers, which used to be home to formidable salmon runs that supported a whole ecosystem. Now, these dams block the salmon from returning to the rivers to spawn, collapsing their numbers and leaving almost no food for the orcas. The federal government, though aware of the problem, has done little to solve it, choosing instead to prioritize dams that provide little economic benefit. The solution is clear: the only viable path forward for recovery of the salmon and thus recovery of the Southern Residents is to breach the dams. Breaching entails removing the earthen walls on the sides of a dam so the river can once again flow naturally. This article focuses on the dams on the Lower Snake River and suggests that from both an economic and environmental standpoint, breaching the dams is the obvious and necessary solution. Time is of the essence, and the federal government must act to protect the Southern Residents.

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INTRODUCTION

The Southern Resident killer whales (SRKW) are a distinct population of orcas, also known as killer whales, that live in the Pacific Northwest region of the United States and British Columbia, Canada.¹ They have long been regarded as a symbol of the region by both the Indigenous peoples and the Pacific Northwest states.² Unlike some other populations of orca, which prey on marine mammals, their primary food source is chinook salmon.³ Salmon are an anadromous species, meaning they begin their lives in freshwater, migrate to the ocean where they spend much of their adult life, then return to their natal streams to reproduce and die.⁴ Beginning in the 1930s, the federal government built dams along several of the major rivers in the Pacific Northwest that have drastically decreased the wild salmon populations by cutting off their access to these ancestral spawning grounds upriver.⁵ The salmon now have extreme difficulty reproducing and of the salmon that do hatch, few make it to the ocean.⁶ The primary threat facing the SRKWs is lack of food; they are starving to death and their population is dwindling.⁷

This article suggests that the only viable solution for the long-term survival of the SRKWs is to breach the four dams on the Lower Snake River. These dams have little economic value and removal would significantly aid in the restoration of salmon stocks, thereby restoring food for the SRKWs.⁸ Part I of this comment discusses the history of the SRKWs and the reasons for their decline, along with protections that are currently in place. Part II examines the litigation that has taken

¹ *Southern Resident Killer Whale Research in the Pacific Northwest*, NOAA FISHERIES (Mar. 17, 2023), <https://www.fisheries.noaa.gov/west-coast/science-data/southern-resident-killer-whale-research-pacific-northwest>.

² *Saving the Southern Residents*, NOAA, <https://noaa.maps.arcgis.com/apps/Cascade/index.html?appid=3405e6637bf74e998d44be992c54f613> (last visited Nov. 5, 2023).

³ *Southern Resident Killer Whales*, EPA (Mar. 10, 2023), <https://www.epa.gov/salish-sea/southern-resident-killer-whales>.

⁴ MICHAEL C. BLUMM, *PACIFIC SALMON LAW AND THE ENVIRONMENT: TREATIES, ENDANGERED SPECIES, DAM REMOVAL, CLIMATE CHANGE, AND BEYOND 3* (2022) [hereinafter *PACIFIC SALMON LAW*].

⁵ *Id.* at 57, 61.

⁶ *Id.* at 17–19.

⁷ *Saving the Southern Residents*, *supra* note 2.

⁸ *PACIFIC SALMON LAW*, *supra* note 4, at 133–37.

place so far and what it has achieved. Finally, Part III proposes steps we can—and must—take moving forward to save this iconic population from extinction.

I. HISTORY OF THE SOUTHERN RESIDENTS AND THEIR POPULATION DECLINE

In the Pacific Northwest, there are three distinct types of killer whales: transient orcas (also called Biggs' killer whales), offshore orcas, and Resident orcas.⁹ Transient orcas move along the coast from Alaska to as far south as Southern California and they feed exclusively on marine mammals like sea lions and other whales.¹⁰ Offshore orcas live miles off the coast and feed on fish and sharks.¹¹ Finally, Residents, as their name suggests, stay mostly in one place and almost exclusively eat salmon.¹² The SRKW are the southernmost distinct population among several communities of Resident-type orcas.¹³ They spend most of the year in the greater Puget Sound area and are comprised of three distinct pods: the J, K, and L pods.¹⁴ The pods are the families that the orcas travel with.¹⁵ The SRKW are by far the most threatened population as a result of capture, vessel noise, contamination, and most importantly, the lack of their food source, chinook salmon.¹⁶

A. Capture for Marine Parks in the 1960–1970s

Between 1962 and 1977, humans captured approximately 300 whales of different species in Washington State and British Columbia, Canada.¹⁷ Most of these whales were captured for aquariums,¹⁸ and some for military use.¹⁹ The

⁹ *Southern Resident Killer Whale Research in the Pacific Northwest*, *supra* note 1.

¹⁰ *Orca 101: Getting to Know the Southern Residents*, SOUTHERN RESIDENT KILLER WHALE TASK FORCE, <https://orca.wa.gov/orca-101/> (last visited Nov. 16, 2023); *West Coast Bigg's (Transient) Killer Whales*, GEORGIA STRAIT ALLIANCE, <https://georgiastrait.org/work/species-at-risk/orca-protection/killer-whales-pacific-northwest/west-coast-biggs-transient-killer-whales/> (last visited Nov. 16, 2023).

¹¹ *Offshore Killer Whales*, GEORGIA STRAIT ALLIANCE, <https://georgiastrait.org/work/species-at-risk/orca-protection/killer-whales-pacific-northwest/offshore-killer-whales/> (last visited Nov. 16, 2023).

¹² *Getting to Know the Southern Residents*, *supra* note 10.

¹³ *Southern Resident Killer Whale Research in the Pacific Northwest*, *supra* note 1.

¹⁴ *Saving the Southern Residents*, *supra* note 2.

¹⁵ *Southern Resident Orca (SRKW) Population*, CENTER FOR WHALE RESEARCH, <https://www.whaleresearch.com/orca-population> (Sept. 2023).

¹⁶ *Saving the Southern Residents*, *supra* note 2.

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ Candace Calloway Whiting, *Orca Ishmael Demonstrated Intelligence I'd Never Encountered Before*, SONAR (Sept. 8, 2015), <https://wearesonar.org/2015/09/08/orca-ishmael-demonstrated-intelligence-never-encountered-before-former-trainer/>; C. A. Bowers and R.S. Henderson, *Project Deep Ops: Deep Object Recovery With Pilot and Killer Whales*, NAVAL UNDERSEA CENTER 3–4

SRKWs were the most affected population, with 36 individuals captured, at least 11 of which died in the process.²⁰ In the late 1800s, the population of SKRWs was approximately 200 individuals, but by 1972, the population had dwindled to just 67 whales.²¹ The last surviving wild-captured SRKW died on August 17, 2023 at the Miami Seaquarium, where she had been kept in the oldest and smallest orca tank in the United States for over 50 years.²² In the 1960s, both opportunistic shooting by fishermen who saw the orcas as competitors for fish and harpooning by federal researchers who killed orcas to study their diets presented a threat to the SRKWs.²³ However, it was the capture for marine parks that drastically and acutely reduced their population by over one-third.²⁴ In 1972, Congress enacted the Marine Mammal Protection Act (MMPA),²⁵ which banned whale capture, but SeaWorld was allowed to continue hunting wild orcas under an economic hardship exception.²⁶ As a result of a particularly horrific capture in 1976, Washington State took SeaWorld to court and a settlement agreement ended the orca hunts in Washington, marking the last wild orca capture in the United States.²⁷

B. Construction of the Dams

The largest contributors to the decline of the salmon population, and subsequently the fate of the SRKWs, are the hydroelectric dams along the major rivers in the Pacific Northwest.²⁸ This article primarily focuses on the dams on

(Nov. 1972), <https://apps.dtic.mil/sti/pdfs/AD0754396.pdf>.

²⁰ *Saving the Southern Residents*, *supra* note 2.

²¹ *Id.*; *Killer Whales*, ENCYCLOPEDIA OF PUGET SOUND, <https://www.eopugetsound.org/science-review/12-killer-whales> (last visited Nov. 16, 2023).

²² Lynda M. Vapes & Isabella Breda, *Lolita the Orca Dies in Captivity Before Return to the PNW*, SEATTLE TIMES (Aug. 18, 2023), <https://www.seattletimes.com/seattle-news/environment/lolita-the-orca-reportedly-dies-in-captivity-before-return-to-the-pnw/>; *Tokitae's Life Now*, ORCA NETWORK, <https://www.orcanetwork.org/tokitaesstory/blog-post-title-three-tslkw> (last visited Nov. 5, 2023). Just months before, and after years of pressure from advocacy groups, the Miami Seaquarium announced that it planned to return the orca, Tokitae (also known as Lolita), to her home in the Salish Sea where she would have lived in a sea pen near her family. Johnny Diaz, *Lolita the Orca May Swim Free After Decades at Miami Seaquarium*, N.Y. TIMES (Mar. 30, 2023), <https://www.nytimes.com/2023/03/30/us/lolita-orca-whale-return-home.html>.

²³ Lynda V. Mapes, *The Orca and the Orca Catcher: How a Generation of Killer Whales was Taken from Puget Sound*, SEATTLE TIMES, <https://www.seattletimes.com/seattle-news/environment/the-orca-and-the-orca-catcher-how-a-generation-of-killer-whales-was-taken-from-puget-sound/> (Aug. 18, 2023) [hereinafter *The Orca and the Orca Catcher*].

²⁴ PACIFIC SALMON LAW, *supra* note 4, at 161; *Saving the Southern Residents*, *supra* note 2.

²⁵ 16 U.S.C.A. § 1361–1423h.

²⁶ *The Orca and the Orca Catcher*, *supra* note 23; 16 U.S.C.A. § 1371(a)(1).

²⁷ *The Orca and the Orca Catcher*, *supra* note 23.

²⁸ See NAT'L MARINE FISHERIES SERV., NAT'L OCEANIC AND ATMOSPHERIC ADMIN., RECOVERY PLAN FOR SOUTHERN RESIDENT KILLER WHALES (ORCINUS ORCA) II-86–87 (Jan. 17, 2008), <https://repository.library.noaa.gov/view/noaa/15975> [hereinafter RECOVERY PLAN]; NAT'L MARINE FISHERIES SERV., NAT'L OCEANIC AND ATMOSPHERIC ADMIN., REBUILDING COLUMBIA

the Lower Snake River, as illustrated below.

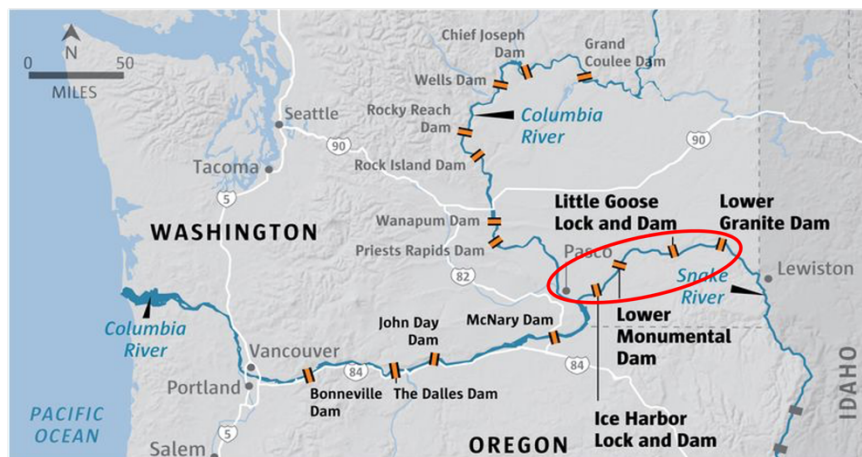


Figure 1 - Lower Snake River Dams²⁹

While all of the dams in the region block the passage of salmon, the four Lower Snake River dams cause some of the most significant damage and have little economic justification for continued use.³⁰ These dams block approximately 2,000 miles of upstream salmon habitat.³¹ Although there are four other dams downriver on the Columbia River, the biggest threat is not to the adult salmon travelling upstream to spawn, but rather to the vulnerable juvenile salmon travelling downstream to the ocean.³² Currently, the juvenile salmon suffer immense stress having to cross eight dams in their fragile state.³³ Recent studies have shown that other populations of Columbia Basin salmon that migrate through four or fewer dams fare significantly better.³⁴ Reducing the number of dams the

BASIN SALMON AND STEELHEAD 24 (Sept. 30, 2023).

²⁹ Jenny Kwon, *Removing Lower Snake River Dams Offers Best Chance for Salmon Recovery – at Steep Price, Report Says*, SEATTLE TIMES (April 9, 2021), <https://www.seattletimes.com/seattle-news/environment/new-state-federal-report-puts-10-27-billion-price-tag-on-lower-snake-river-dam-removal/> (circle denoting four Lower Snake River dams added).

³⁰ PACIFIC SALMON LAW, *supra* note 4, at 133–34.

³¹ *Spirit of the Salmon Plan: Technical Recommendation 16: Restoring Fish Passage*, COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION, <https://plan.critfc.org/2013/spirit-of-the-salmon-plan/technical-recommendations/restoring-fish-passage/> (last visited Nov. 5, 2023).

³² *Dams: impacts on salmon and steelhead*, NORTHWEST POWER AND CONSERVATION COUNCIL, <https://www.nwcouncil.org/reports/columbia-river-history/damsimpacts/> (last visited Nov. 16, 2023).

³³ Courtney Flatt, *Federal Report Recommends Removing Four Lower Snake River Dams to Protect Salmon*, OR. PUB. BROAD. (Sept. 30, 2022, 3:38 PM), <https://www.opb.org/article/2022/09/30/lower-snake-river-dams-removal-salmon-protections-federal-report/>.

³⁴ *Why Remove The 4 Lower Snake River Dams?*, SAVE OUR WILD SALMON, <https://www.wildsalmon.org/facts-and-information/why-remove-the-4-lower-snake-river-dams.html> (last visited Nov. 5, 2023).

Lower Snake River salmon must navigate from eight to four would lead to population recovery and allow the salmon to reach an additional 2,000 miles of upstream habitat.³⁵ Regaining that habitat would provide access to more productive spawning grounds and buffer against climate change by providing access to the colder water that salmon require to survive.³⁶

The construction of dams in the Columbia River Basin was part of the Progressive Conservation movement, whose proponents believed rivers belonged to the public and should be developed for their hydropower by the government.³⁷ This perspective, coupled with the need to put unemployed people to work during the Great Depression, launched the dam-building era.³⁸ The federal government constructed the first of the large dams along the Columbia River in 1933, followed by a second in 1938.³⁹ Though the latter of these dams was fitted with fish ladders to give upstream-travelling spawning salmon passage, the government forgot to think about the juvenile salmon travelling downstream to the ocean, who would be blocked by the dams.⁴⁰ The government continued to build dams and by the 1940s, many of the historic salmon runs had been extinguished.⁴¹ The construction of dams continued until 1975, with salmon consistently being an afterthought to the hydroelectric priorities.⁴² While salmon may have been afforded some consideration, what the government certainly did not consider was the effect blocking the salmon runs would have on the rest of the food chain.⁴³ Notably, the construction of these dams took place before the enactment of the National Environmental Policy Act (NEPA)⁴⁴ in 1970, which requires federal agencies to assess the environmental impact of any proposed major federal action prior to authorization.⁴⁵

The costs and benefits of the dams were not wholly unknown at the time the dams were built.⁴⁶ The 1945 Rivers and Harbors Act⁴⁷ authorized the McNary Dam and all four of the dams on the Lower Snake River, while specifying that “anadromous fishes shall be afforded free access above and below the dam.”⁴⁸

³⁵ *Id.*; *Spirit of the Salmon Plan*, *supra* note 31.

³⁶ Flatt, *supra* note 33.

³⁷ PACIFIC SALMON LAW, *supra* note 4, at 61–62.

³⁸ *Id.* at 62.

³⁹ *Id.* at 62.

⁴⁰ *Id.* Some of the dams built after the 1938 dam fitted with fish ladders contained no measures for fish passage at all.

⁴¹ *Id.*

⁴² *Id.* at 95.

⁴³ *See id.* at 63, 65.

⁴⁴ National Environmental Policy Act (NEPA) of 1969, 42 U.S.C.A. §§ 4321–4370m(12).

⁴⁵ 42 U.S.C.A. § 4332(2)(C).

⁴⁶ *See* PACIFIC SALMON LAW, *supra* note 4, at 65.

⁴⁷ River and Harbor Act of 1945, Pub. L. No. 79-14, § 2, 59 Stat. 10, 22 (1945).

⁴⁸ *Id.*

The Bonneville Power Administration (BPA), the federal agency responsible for the dams' federal power sales, and the Army Corps of Engineers (Corps), which operates the dams, failed to implement the provision and instead opted to ignore it.⁴⁹ Moreover, despite the Corps estimating a cost-benefit yield of only 15 cents on the dollar for damming the Lower Snake River, Congress authorized construction of dams as the Corps thought necessary, but never mentioned any specific locations for the Corps to place them.⁵⁰ The Corps proceeded to build the four Lower Snake River dams, which are the largest contributors to the decline of the salmon population and directly led to the salmon being listed under the Endangered Species Act.⁵¹

C. Current Status

After the capture for marine parks, the SRKW population dropped to only 67 whales.⁵² By the 1990s, the population had rebounded slightly and the SRKW population was in the 90s.⁵³ However, as of November 2023, the population is only 75.⁵⁴

Three major factors are widely regarded as being responsible for this decline: vessel traffic and noise, toxic contaminants, and prey availability.⁵⁵ Vessel noise disrupts the orcas' abilities to communicate through clicks and whistles and to hunt using echolocation.⁵⁶ Toxic contaminants accumulate in the orcas' blubber through the fish they eat.⁵⁷ These contaminants can affect their immune system and compromise their ability to reproduce, both of which are key to rebuilding the population.⁵⁸ The highest levels of contamination can occur in calves because the contaminants pass through their mothers' milk.⁵⁹

Of these three major threats to the SRKWs, prey availability is undisputedly the most significant and long-term challenge.⁶⁰ 98% of SRKWs' diet is salmon,

⁴⁹ PACIFIC SALMON LAW, *supra* note 4, at 62–64.

⁵⁰ *Id.* at 64.

⁵¹ *Id.* at 61–64.

⁵² *Saving the Southern Residents*, *supra* note 2.

⁵³ *Southern Resident Killer Whale*, MARINE MAMMAL COMMISSION, <https://www.mmc.gov/priority-topics/species-of-concern/southern-resident-killer-whale/> (last visited Oct. 15, 2023); *Southern Resident Orca (SRKW) Population*, *supra* note 15.

⁵⁴ *Southern Resident Orca (SRKW) Population*, *supra* note 15. The Center for Whale Research conducts a bi-annual official census of the SRKW population. The official number as of July 31, 2023 is 75 whales, but one SRKW is likely deceased since then. *Southern Resident killer whale K34 not seen in recent Encounters*, CENTER FOR WHALE RESEARCH, <https://www.whaleresearch.com/> (last visited Nov. 16, 2023) [<https://perma.cc/28XK-HQUX>].

⁵⁵ RECOVERY PLAN, *supra* note 28, at II-71.

⁵⁶ *Id.* at II-103–04; *Saving the Southern Residents*, *supra* note 2.

⁵⁷ *Saving the Southern Residents*, *supra* note 2.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ Robert C. Lacy et al., *Evaluating anthropogenic threats to endangered killer whales to inform*

and 80% of that total is chinook salmon.⁶¹ SRKWs appear to be picky eaters; even as chinook numbers dwindle and other species like sockeye and coho become more available, the orcas continue to almost exclusively eat the chinook.⁶² While toxic contaminants affect reproductive ability, lack of prey is the most significant factor preventing reproductive success.⁶³ This lack of prey is also leading the SRKWs to starvation.⁶⁴ K-21 (“Cappuccino”), a large male orca in his 30s from the K pod was last seen severely emaciated in late July 2021 and was subsequently declared deceased.⁶⁵ Several other orcas have disappeared from the pods in recent years and are presumed dead as well.⁶⁶

Perhaps the most devastating loss—certainly the one that had the largest emotional impact on humans and brought attention to the SRKWs plight—came in 2018, when J-35 (“Tahlequah”) carried her deceased baby for 17 days over a distance of approximately 1,000 miles.⁶⁷ This ritual of mourning not only made national headlines but also opened many people’s eyes to just how complex and emotional these orcas are, spurring a new wave of activism to ensure their continued survival.⁶⁸ Nevertheless, although the SRKWs may be a bigger consideration in salmon conservation efforts than they have been in the past, the threats they face are still largely unresolved.⁶⁹

D. Statutory Protections

Several statutory provisions protect the SRKWs, both directly and indirectly.⁷⁰ The Endangered Species Act of 1973 (ESA) protects both the SRKWs and all but one species of Pacific salmon.⁷¹ The ESA’s purpose is to ensure that the actions

effective recovery plans, Sci. Reps. 6 (Oct. 26, 2017) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5658391/?report=classic>.

⁶¹ Michael J. Ford et al., *Estimation of a Killer Whale (Orcinus orca) Population's Diet Using Sequencing Analysis of DNA from Feces*, PLOS ONE 1, 8-9 (Jan. 6, 2016), <https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0144956&type=printable>.

⁶² *Id.* at 10.

⁶³ *Evaluating anthropogenic threats*, *supra* note 60, at 6.

⁶⁴ Chris Clarke, *Southern Resident Killer Whales are Dying of Starvation*, PBS SOCAL (Oct. 31, 2016) <https://www.pbsocal.org/redefine/southern-resident-killer-whales-are-dying-of-starvation>.

⁶⁵ Callie Craighead, *Washington's orca whale pods lose a member as oldest male, Cappuccino, presumed dead*, SEATTLEPI (Aug. 3, 2021, 9:12 AM), <https://www.seattlepi.com/local/seattlenews/article/washington-orca-whale-k21-Cappuccino-dead-16358078.php>.

⁶⁶ Christopher Dunagan, *Killer whale census shows another year down, with three deaths and two births*, PUGET SOUND INSTITUTE (Sept. 27, 2022), <https://www.pugetsoundinstitute.org/2022/09/killer-whale-census-shows-another-down-year-with-three-deaths-and-two-births/>.

⁶⁷ Jenny Gathright, *After 17 Days and 1,000 Miles, a Mother Orca's 'Tour of Grief' Is Over*, NPR <https://www.npr.org/2018/08/12/638047095/after-17-days-and-1-000-miles-a-mother-orcas-tour-of-grief-is-over> (Aug. 13, 2018); PACIFIC SALMON LAW, *supra* note 4, at 135.

⁶⁸ Gathright, *supra* note 67.

⁶⁹ PACIFIC SALMON LAW, *supra* note 4, at 163–67.

⁷⁰ 16 U.S.C. §§ 1361–1362, 1371–1372, 1531–1533, 1538.

⁷¹ 16 U.S.C. § 1533; 50 C.F.R. § 224.101 (2022). The salmon species protected by the ESA

and authorizations of federal agencies “are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species.”⁷² To receive the protections of the Act, a species must be listed by the Secretary of Commerce, who also designates the species’ “critical habitat,” which receives special protection as well.⁷³ In 2001, several environmental organizations petitioned to have the SRKWs listed under the ESA, but the National Marine Fisheries Service (NMFS), otherwise known as NOAA Fisheries, determined listing was not warranted because the SRKWs did not meet the criteria of being a distinct population segment of the general killer whale species.⁷⁴ These same environmental groups challenged that decision in court and it was remanded to NMFS for reconsideration.⁷⁵ In 2005, NMFS listed the SRKWs as an endangered species under ESA after determining they were “discrete and significant” with respect to other killer whale populations.⁷⁶ NMFS subsequently issued a final rule designating the SRKWs’ critical habitat.⁷⁷

include chinook, chum, coho, sockeye, and steelhead trout. 50 C.F.R. § 224.101. Only pink salmon are not protected by the Act. *Id.*

⁷² *Summary of the Endangered Species Act*, EPA, <https://www.epa.gov/laws-regulations/summary-endangered-species-act> (Sept. 6, 2023).

⁷³ 16 U.S.C. § 1533(a).

⁷⁴ RECOVERY PLAN, *supra* note 28, at II-67.

⁷⁵ *Id.*

⁷⁶ *Id.*; 50 C.F.R. § 224.101 (2022).

⁷⁷ 50 C.F.R. 226.206 (2021).

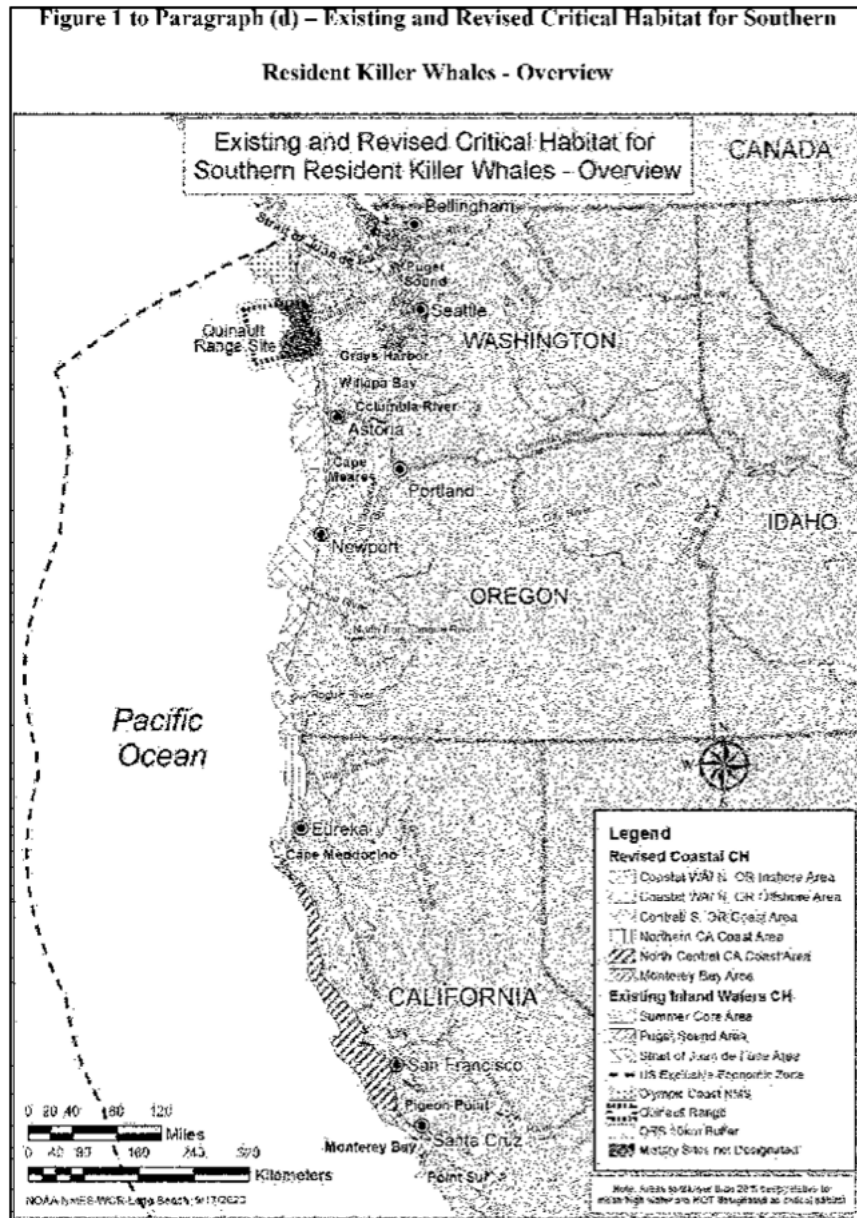


Figure 2 – Current SRKW Critical Habitat Under the ESA⁷⁸

⁷⁸ 50 C.F.R. § 226.206 (2021).

The SRKW also receive protection under the Marine Mammal Protection Act of 1972 (MMPA),⁷⁹ which was the first legislation to take a whole-ecosystem approach to marine resource management.⁸⁰ The Act's primary objective is to "maintain the health and stability of the marine ecosystem . . . and maintain optimum sustainable populations of marine mammals."⁸¹ At first, the Act did not provide full protection to the SRKWs, but after NMFS listed them as "depleted" in 2003, they received greater protections and required a conservation plan to address their population decline.⁸² In 2011, under then MMPA, NMFS prohibited vessels from approaching any orcas within 200 yards or parking in the path of the whales when in inland waters of Washington State in order to protect the whales from interference and noise.⁸³ While these protections have not been sufficient to prevent the decline of the SRKW population,⁸⁴ they provide a necessary reminder to consider the orcas in addressing the salmon crisis.

The SRKWs also receive some indirect protection from the ESA because the salmon themselves are a listed endangered species.⁸⁵ In 1989, NMFS listed the winter run of the Sacramento River chinook under the ESA,⁸⁶ and by 2005, 13 salmon runs in the Columbia Basin alone had been listed.⁸⁷ Under the ESA, federal agencies whose actions may affect listed species must take measures to avoid jeopardizing those species.⁸⁸ Those agencies must generate Biological Opinions (BiOps) that assess the effects of a proposed plan.⁸⁹ Continued hydroelectric operations on the Snake and Columbia Rivers affect the endangered salmon, so BiOps are regularly required for the dams.⁹⁰ These BiOps have been the subject of much litigation concerning the ESA and proposals to breach the dams.⁹¹

⁷⁹ 16 U.S.C. § 1361–1362.

⁸⁰ *Marine Mammal Protection Act*, MARINE MAMMAL COMMISSION, <https://www.mmc.gov/about-the-commission/our-mission/marine-mammal-protection-act/> (last visited Oct. 14, 2023).

⁸¹ *Id.*

⁸² 50 C.F.R. § 216.15 (2016) (original 2003 listing at 68 Fed. Reg. 31,980 (June 30, 2003)).

⁸³ 50 C.F.R. § 224.103(e) (2016) (original 2011 rule at 76 Fed. Reg. 20,870-01 (May 16, 2011)).

⁸⁴ *See generally* RECOVERY PLAN, *supra* note 28.

⁸⁵ 50 C.F.R. § 224.101(h) (2022).

⁸⁶ *Id.*; Endangered and Threatened Species; Critical Habitat; Winter-run Chinook Salmon, 54 Fed. Reg. 32,035, 32085 (Aug. 4, 1989) (to be codified at 50 C.F.R. pts. 226, 227), <https://www.govinfo.gov/content/pkg/FR-1989-08-04/pdf/FR-1989-08-04.pdf>.

⁸⁷ PACIFIC SALMON LAW, *supra* note 4, at 96.

⁸⁸ *Id.* at 97.

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.*

II. LITIGATION

Most litigation related to the SRKWs' food supply has come from challenges to NMFS BiOps about Columbia Basin hydroelectric operations.⁹² Various activist, government, and tribal groups have sued under the ESA, challenging these BiOps as prescribing insufficient or ineffective means to allow salmon migration past the dams.⁹³ The latest round of litigation has lasted over a quarter of a century, with little progress.⁹⁴

A. Past Litigation

In 1994, federal district judge Malcolm Marsh, the first judge to review a Columbia Basin hydroelectric BiOp, concluded that NMFS failed to adequately consider the salmon and that ESA compliance would require “a major overhaul” in existing hydroelectric operations.⁹⁵ NMFS was ordered to revise the BiOp and give appropriate consideration to the salmon.⁹⁶ This began a line of cases challenging the revised BiOps, which since 2000 have failed to survive judicial review.⁹⁷ Following the rejection of the BiOp in 1994, the government admitted the dams jeopardized the salmon and incorporated population recovery into its analysis, but deferred any substantial changes until 2003.⁹⁸ In 2000, Judge James Redden inherited Judge Marsh's role of reviewing these BiOp challenges.⁹⁹ Judge Redden rejected a revised BiOp in 2003 and rejected another revision in 2005, this time ordering limited spills over the dam to facilitate the migration of salmon downstream.¹⁰⁰ Judge Redden ultimately rejected three revised BiOps for repeatedly failing to ensure no jeopardy to the salmon listed under the ESA.¹⁰¹

⁹² See Michael C. Blumm & Doug DeRoy, *The Fight over Columbia Basin Salmon Spills and the Future of the Lower Snake River Dams*, 9 WASH. J. ENV'T L. & POL'Y 1, 6–9 (2019) [hereinafter *Salmon Spills*].

⁹³ *Id.* at 2–3.

⁹⁴ *Id.* at 6.

⁹⁵ *Idaho Dep't of Fish & Game v. Nat'l Marine Fisheries Serv.*, 850 F. Supp. 886, 900 (D. Or. 1994), *vacated as moot*, 56 F.3d 1071 (9th Cir. 1995).

⁹⁶ See generally *Idaho Dep't of Fish & Game v. Nat'l Marine Fisheries Serv.*, 850 F. Supp. 886 (D. Or. 1994).

⁹⁷ PACIFIC SALMON LAW, *supra* note 4, at 97–101.

⁹⁸ *Id.* at 97; Michael C. Blumm et. al., *Still Crying Out for A "Major Overhaul" After All These Years - Salmon and Another Failed Biological Opinion on Columbia Basin Hydroelectric Operations*, 47 ENVTL. L. 287, 296–97 (2017).

⁹⁹ PACIFIC SALMON LAW, *supra* note 4, at 97.

¹⁰⁰ *Id.*

¹⁰¹ *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 254 F. Supp. 2d 1196 (D. Or. 2003); *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, No. CV 01-640-RE, 2005 WL 1278878 (D. Or. May 26, 2005), *aff'd sub nom. Columbia Snake River Irrigators Ass'n v. Nat'l Wildlife Fed'n*, 230 F. App'x 659 (9th Cir. 2007), and *aff'd*, 481 F.3d 1224 (9th Cir. 2007), *opinion amended and superseded*, 524 F.3d 917 (9th Cir. 2008), and *aff'd*, 524 F.3d 917 (9th Cir. 2008); *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 839 F. Supp. 2d 1117 (D. Or. 2011).

This Redden case, *National Wildlife Federation v. National Marine Fisheries Service*,¹⁰² was the first in a line of cases that all addressed various inadequate revisions to the same hydroelectric BiOps.¹⁰³

It is estimated that by 2011, the government spent approximately \$10 billion on hatcheries and habitat restoration with no wild salmon recovery to show for it.¹⁰⁴ The government did not change hydroelectric operations, despite Judge Marsh’s admonition that “a major overhaul” was necessary.¹⁰⁵ In a letter to the parties regarding the 2008 version of the BiOp, Judge Redden remarked that federal agencies “ha[d] spent the better part of the last decade treading water and avoiding their obligations” under the ESA, and that “[w]e simply cannot afford to waste another decade.”¹⁰⁶ Unfortunately, that is what happened.¹⁰⁷ After rejecting one more BiOp in 2011,¹⁰⁸ Judge Redden retired and Judge Michael Simon inherited the job of evaluating the BiOp revisions.¹⁰⁹

Judge Simon continued Judge Redden’s legacy by once again rejecting the BiOp, but he took it one step further.¹¹⁰ Not only did Judge Simon find the BiOp was not in compliance with the ESA, he also found it violated NEPA and therefore required an Environmental Impact Statement (EIS) considering the effects of the restoration measures promised in the BiOp and perhaps more importantly, reasonable alternatives including breaching the dams.¹¹¹ Judge Simon also ordered increased water spill over the dams in the interim¹¹² and retained oversight to ensure that the agencies met the deadlines for revisions.¹¹³ The agencies immediately appealed the decision to the Ninth Circuit in an effort to resist the increased spills, and the Ninth Circuit quickly and unanimously affirmed the decision.¹¹⁴ Within 20 days of the Ninth Circuit’s decision, the Republican-controlled House passed a bill to reverse the spill injunction, but it subsequently died in the Senate.¹¹⁵ Because of the challenges and costs involved in executing

¹⁰² *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 254 F. Supp. 2d 1196 (D. Or. 2003).

¹⁰³ *PACIFIC SALMON LAW*, *supra* note 4, at 97–100.

¹⁰⁴ *Id.* at 97.

¹⁰⁵ *Id.*; Idaho Dep't of Fish & Game, 850 F. Supp. at 900.

¹⁰⁶ Kim Murphy, *Judge Doesn't Rule Out Breaching Snake River Dams to Save Salmon*, L.A. TIMES (May 20, 2009), <https://www.latimes.com/archives/la-xpm-2009-may-20-na-salmon20-story.html>.

¹⁰⁷ *PACIFIC SALMON LAW*, *supra* note 4, at 99–103.

¹⁰⁸ *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 839 F. Supp. 2d 1117 (D. Or. 2011).

¹⁰⁹ *PACIFIC SALMON LAW*, *supra* note 4, at 99.

¹¹⁰ *Id.* at 99–100.

¹¹¹ *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 184 F. Supp. 3d 861, 949–50 (D. Or. 2016).

¹¹² *See Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 886 F.3d 803, 815 (9th Cir. 2018).

¹¹³ *Nat'l Wildlife Fed'n*, 184 F. Supp. 3d at 950 (D. Or. 2016).

¹¹⁴ *Nat'l Wildlife Fed'n*, 886 F.3d at 825.

¹¹⁵ 115 Cong. Rec. 3543–3560 (Apr. 25, 2018) (reprinting H.R. 3144); Actions - H.R.3144 - 115th Congress (2017-2018): To provide for operations of the Federal Columbia River Power System

the spill order, Oregon and Washington, The Nez Perce Tribe, and federal operating agencies negotiated a “flexible spill agreement” for 2019–2021 that increased spill at times of day when energy demand was lower and reduced spill at peak demand times.¹¹⁶ The parties acknowledged that this agreement did not comply with the ESA, but was a temporary measure until the agencies completed the BiOp revision.¹¹⁷ Judge Simon approved the agreement.¹¹⁸

In 2020, NMFS issued the revised BiOp,¹¹⁹ and BPA and the Department of Energy issued the EIS.¹²⁰ Both specifically mentioned the SRKWs and acknowledged that the dams threatened their food supply, yet still concluded that the proposed action, or rather inaction, of maintaining the status quo was not likely to adversely affect the orcas.¹²¹ The reports consequently triggered another challenge in court.¹²²

B. Current Litigation

In 2021, President Biden took office, and his administration announced a commitment to a long-term strategy for salmon restoration in the Columbia River Basin.¹²³ On October 12, 2021, the federal government, Oregon, the Nez Perce Tribe, and the National Wildlife Federation, after reaching an agreement to increase spill, collectively asked the court to stay litigation in the BiOp case so the parties could work together to create a long-term comprehensive solution that would ideally resolve the claims in the litigation.¹²⁴ The agreement asked the court to stay the litigation through July 2022.¹²⁵ On August 4, 2022, the parties again asked the court to extend the stay of litigation through August 2023 to allow them to continue working toward a solution.¹²⁶

pursuant to a certain operation plan for a specified period of time, and for other purposes, H.R.3144, 115th Cong. (2018), <https://www.congress.gov/bill/115th-congress/house-bill/3144/all-actions>.

¹¹⁶ PACIFIC SALMON LAW, *supra* note 4, at 101–02.

¹¹⁷ *Id.* at 102.

¹¹⁸ *Id.*

¹¹⁹ NAT’L MARINE FISHERIES SERV., ENDANGERED SPECIES ACT SECTION 7(A)(2) BIOLOGICAL OPINION AND MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT RESPONSE FOR THE CONTINUED OPERATION AND MAINTENANCE OF THE COLUMBIA RIVER SYSTEM (July 24, 2020) https://repository.library.noaa.gov/view/noaa/26460/noaa_26460_DS1.pdf [hereinafter COLUMBIA RIVER SYSTEM BIOLOGICAL OPINION].

¹²⁰ Columbia River System Operations Environmental Impact Statement Record of Decision, 85 Fed. Reg. 63,834 (U.S. Dep’t of Energy Oct. 8, 2020).

¹²¹ *Id.* at 63,846–47; COLUMBIA RIVER SYSTEM BIOLOGICAL OPINION, *supra* note 119, at 1371.

¹²² PACIFIC SALMON LAW, *supra* note 4, at 100.

¹²³ *Biden-Harris Administration Announces Steps to Improve Conditions for Salmon in the Columbia River Basin*, U.S. DEP’T INTERIOR (Oct. 21, 2021), <https://www.doi.gov/pressreleases/biden-harris-administration-announces-steps-improve-conditions-salmon-columbia-river>.

¹²⁴ Unopposed Joint Mot. Stay Litigation, *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, No. 3:01-cv-00640-SI (D. Or. Oct. 21, 2021).

¹²⁵ *Id.*

¹²⁶ Joint Mot. Extend Litigation Stay, *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, No.

Earthjustice, one of the lead plaintiffs, welcomed the chance to work with the federal government toward a solution, but cautioned that “if the [Biden] administration does not live up to its commitment to act urgently and boldly starting now, [Earthjustice] will not hesitate to ask the Court to lift the stay.”¹²⁷ The other plaintiffs made similar statements.¹²⁸ On August 31, 2023, the parties filed a third motion to extend the stay for 60 days until October 31, 2023 because they “believe[d] they we[re] close to concluding negotiations.”¹²⁹ On September 27, The Biden administration issued a memo committing to a “national effort to restore healthy and abundant native fish populations to the [Columbia] Basin” and directing federal agencies including NMFS, BPA, and the Corps to “utilize their authorities and available resources” to advance this objective.¹³⁰ On October 31, the parties once again filed a joint motion to extend the stay for 45 days until December 15, 2023, at which time they will either seek a multi-year stay to implement their “package of actions and commitments” pending final approval by each party’s decisionmakers after conferral with other stakeholders, or if not approved, resume litigation.¹³¹

C. *The Significance of Tribes*

The dams have also been a part of a larger devastating loss to tribal fishing rights.¹³² To understand how the dams impacted these rights, a brief history of tribal treaties and litigation is required. Beginning in 1854, the federal government entered into eight treaties—known collectively as the Stevens Treaties—with 26 Pacific Northwest tribes that ceded massive amounts of land to the federal government with the promise of recognition of the native right to fish and access historic fishing areas.¹³³ Because the federal government had far superior

3:01-cv-00640-SI (D. Or. Aug. 4, 2022).

¹²⁷ *Parties Ask Court to Extend Stay in Legal Fight for Endangered Snake River Salmon*, EARTHJUSTICE: PRESS ROOM (Aug. 4, 2022), <https://earthjustice.org/press/2022/parties-ask-court-to-extend-stay-in-legal-fight-for-endangered-snake-river-salmon>.

¹²⁸ *Id.*

¹²⁹ Joint Mot. Extend Litigation Stay, *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, No. 3:01-cv-00640-SI (D. Or. Aug. 31, 2023), https://earthjustice.org/wp-content/uploads/2023/08/nwf-v.-nmfs_final-stay-extension-motion-8.31.23.pdf.

¹³⁰ Joseph R. Biden, *Memorandum on Restoring Healthy and Abundant Salmon, Steelhead, and Other Native Fish Populations in the Columbia River Basin* (Sept. 27, 2023), <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/09/27/memorandum-on-restoring-healthy-and-abundant-salmon-steelhead-and-other-native-fish-populations-in-the-columbia-river-basin/>.

¹³¹ Joint Mot. Extend Litigation Stay, *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, No. 3:01-cv-00640-SI (D. Or. Oct. 31, 2023), <https://earthjustice.org/wp-content/uploads/2023/10/notice-oct-31.pdf>.

¹³² See PACIFIC SALMON LAW, *supra* note 4, at 25–55.

¹³³ Stevens Treaties, Nisqually-U.S., Dec. 26, 1854, 10 Stat. 1132. For a list of the 26 tribes that signed the treaties, see *Treaty history with the Northwest Tribes*, WASH. DEP’T OF FISH AND WILDLIFE, <https://wdfw.wa.gov/hunting/management/tribal/history> (last visited Nov. 5, 2023).

bargaining power when the treaties were signed, federal courts have interpreted them liberally in favor of the tribes.¹³⁴ Through a series of cases that developed over 120 years following the Stevens Treaties, the Supreme Court eventually held that the tribes had a property right in the salmon and that the treaties guaranteed them a 50% share of the harvest.¹³⁵ During this time, industry polluted the rivers, the government built countless dams, and non-native fishers dominated the salmon stocks and found creative ways to deprive the tribal fishers of their treaty rights.¹³⁶

Three more recent cases have led to promising steps in restoring Indigenous treaty rights and salmon populations.¹³⁷ The first of these is known as the Boldt Decision,¹³⁸ which was the district court decision that first introduced the 50% share.¹³⁹ After the Boldt decision, tribes took up management of the fisheries and created a salmon restoration program in a joint effort with the states.¹⁴⁰ Six years later, in the Orrick Decision, the court held that the tribal share included hatchery fish, and that the Stevens Treaties gave the tribes an implied right of environmental protection for the salmon habitat.¹⁴¹ As to the implied right of environmental protection, the Ninth Circuit found that because there was no concrete controversy, the right could not apply in this case.¹⁴² Notably, the Ninth Circuit did not hold that the treaty provided no protective right for the salmon habitat, just that it could not be exercised without a concrete factual controversy, which tribes have been attempting to find since.¹⁴³ This leads us to the third case, the Culverts Decision/Martinez Decision from 2007,¹⁴⁴ which concerned culverts—pipes or arches under roads and railroad tracks that allow water to flow

¹³⁴ PACIFIC SALMON LAW, *supra* note 4, at 33. The U.S. negotiators had wealth, military power, the population advantage, and drafted the treaties in English. *Id.* (statement of Professor Michael Blumm) (“[T]he treaties were hardly the product of arm’s-length negotiations.”).

¹³⁵ *Id.* at 36–41.

¹³⁶ *Id.* at 33–34.

¹³⁷ *Id.* at 43–53.

¹³⁸ *United States v. Washington*, 384 F. Supp 312 (W.D. Wash. 1974), *aff’d*, 520 F.2d 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976).

¹³⁹ *Washington v. Wash. State Com. Passenger Fishing Vessel Ass’n*, 443 U.S. 658, 685–87 (1979) (the Supreme Court’s establishment of the 50% allocation appeared in this case, which was a further proceeding in the same matter as the previously cited case).

¹⁴⁰ PACIFIC SALMON LAW, *supra* note 4, at 46.

¹⁴¹ *United States v. Washington*, 506 F. Supp. 187, 197–98, 202–03 (W.D. Wash. 1980).

¹⁴² *United States v. Washington*, 694 F.2d 1374, 1389 (9th Cir. 1982), *aff’d in part and vacated in part on reh’g*, 759 F.2d 1353 (9th Cir. 1985).

¹⁴³ *Id.*; PACIFIC SALMON LAW, *supra* note 4, at 50.

¹⁴⁴ *United States v. Washington*, 20 F. Supp. 3d 828 (W.D. Wash. 2007).

through.¹⁴⁵

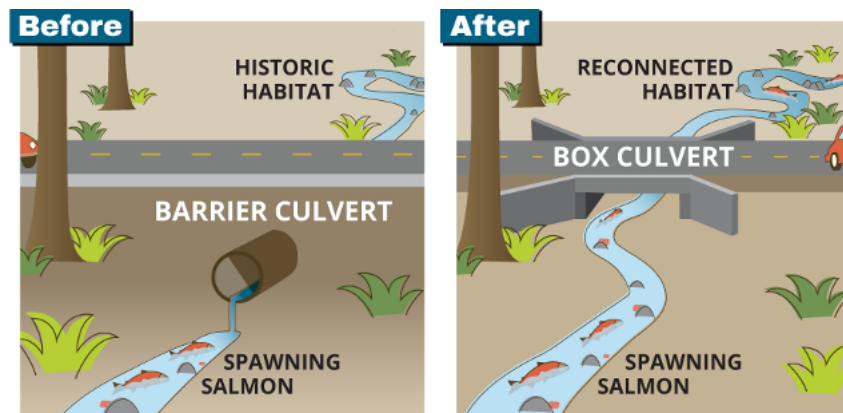


Figure 3¹⁴⁶

Culverts create barriers for fish that are very difficult to pass, and Washington State has admitted as much.¹⁴⁷ These were “the kind of particularized facts that the Ninth Circuit called for” in the Orrick Decision.¹⁴⁸ The district court held the culverts were contributing to the diminishment of the tribes’ harvest and affirmed the Orrick Decision’s holding that the treaties required the state to “refrain from building or maintaining culverts” that “imped[e] fish runs.”¹⁴⁹ After settlement negotiations between the parties failed, the court issued an injunction in 2013 that required the state to make 180 culverts passable for salmon by 2016, and 800 more by 2030.¹⁵⁰ Both the Ninth Circuit and the Supreme Court affirmed the decision.¹⁵¹ This decision may have implications for other states in the Ninth Circuit (California, Oregon, and Idaho) that threaten the salmon habitat in various ways, and could prove to be another useful avenue for salmon and SRKW restoration.¹⁵²

¹⁴⁵ PACIFIC SALMON LAW, *supra* note 4, at 51.

¹⁴⁶ Fish Passage Restoration Program, King County, WA, <https://kingcounty.gov/en/legacy/services/environment/animals-and-plants/restoration-projects/fish-passage> (last visited Sept. 27, 2023).

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *United States v. Washington*, 20 F. Supp. 3d at 899.

¹⁵⁰ *United States v. Washington*, No. CV 70-9213, 2013 WL 1334391 (W.D. Wash. Mar. 29, 2013), *aff’d*, 827 F.3d 836 (9th Cir. 2016), *opinion amended and superseded*, 853 F.3d 946 (9th Cir. 2017), and *aff’d*, 853 F.3d 946 (9th Cir. 2017); PACIFIC SALMON LAW, *supra* note 4, at 52.

¹⁵¹ *United States v. Washington*, 853 F.3d 946 (9th Cir. 2017), *aff’d by an equally divided court*, *Washington v. United States*, 138 S. Ct. 1832 (2018).

¹⁵² PACIFIC SALMON LAW, *supra* note 4, at 54.

III. SOLUTIONS

A. *Washington Governor Inslee's Southern Resident Orca Task Force*

In March 2018, Washington Governor Jay Inslee issued an executive order establishing the Southern Resident Orca Task Force.¹⁵³ The purpose of this task force is to “identify, prioritize, and support the implementation of a . . . plan . . . for the recovery of the [SRKWs] and . . . secure a healthy and sustained population for the future.”¹⁵⁴ It is composed of almost 50 representatives from tribes; federal, state, and local governments; agencies; the Washington legislature; the Canadian government; and the private sector.¹⁵⁵ Governor Inslee directed the task force to implement immediate actions for the benefit of the SRKWs.¹⁵⁶

In November 2018, the task force released its first report.¹⁵⁷ One of the report’s key findings was that the lack of salmon posed a significant threat to the SRKWs’ survival; therefore it established a goal to increase the abundance of chinook salmon.¹⁵⁸ The task force also specifically recommended looking into breaching or removal of the four Lower Snake River dams.¹⁵⁹ Unsurprisingly, this recommendation received a large amount of attention.¹⁶⁰ The task force issued its Final Report and Recommendations in 2019, in which it allocated \$750,000 for establishing a stakeholder process to address possible breaching or removal of the dams.¹⁶¹ The task force also recommended the Washington Department of Ecology relax the dissolved gas allowances on the Snake and Columbia rivers.¹⁶² This would allow increased water spill over the dams at certain times of day, permitting salmon to move past them more easily.¹⁶³

The task force made several other recommendations for recovery of the SRKW

¹⁵³ Wash. Exec. Order No. 18-02 (Mar. 14, 2018), at 3.

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*; PACIFIC SALMON LAW, *supra* note 4, at 162.

¹⁵⁶ PACIFIC SALMON LAW, *supra* note 4, at 162.

¹⁵⁷ REPORT AND RECOMMENDATIONS, SOUTHERN RESIDENT ORCA TASK FORCE, 8 (Nov. 16, 2018), <https://www.orca.wa.gov/wp-content/uploads/TaskForceReport-2018.pdf>.

¹⁵⁸ *Id.* at 6, 15, 41.

¹⁵⁹ *Id.* at 49.

¹⁶⁰ PACIFIC SALMON LAW, *supra* note 4, at 163.

¹⁶¹ FINAL REPORT AND RECOMMENDATIONS, SOUTHERN RESIDENT ORCA TASK FORCE 127–28 (Nov. 7, 2019), <https://www.orca.wa.gov/wp-content/uploads/TaskForceFinalReport-2019.pdf>.

¹⁶² REPORT AND RECOMMENDATIONS, *supra* note 157, at 48. Dissolved gas standards refer to the allowable amount of a certain gas in a specified volume of water. Dissolved gas standards are set pursuant to the federal Clean Water Act, which mandates that water-quality levels meet certain minimum criteria. See *Adaptive Management Team Total Dissolved Gas in the Columbia and Snake Rivers*, WASHINGTON STATE DEPARTMENT OF ECOLOGY AND STATE OF OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY 7, 12 (Jan. 2019), <https://www.oregon.gov/deq/FilterDocs/ColTDGSynthesisPaper2009.pdf>.

¹⁶³ REPORT AND RECOMMENDATIONS, *supra* note 157, at 48.

population.¹⁶⁴ One of the issues the report addressed was the human impact on salmon habitat, including the following threats: (1) fish passage barriers like dams and other human-installed equipment that blocks or diverts water in a way that prevents fish from moving up or downstream and avoiding predators; (2) habitat loss and degradation, like straightening of rivers and converting natural features for human use; (3) water contamination from development and reduced oxygen levels; and (4) water withdrawals, which reduce the salmon's habitat.¹⁶⁵ The report recommended increased investment in habitat restoration on the rivers to aid in salmon recovery.¹⁶⁶

The report also addressed predation.¹⁶⁷ Dams make it easy for other predators like sea lions, birds, and larger fish to prey on salmon because the salmon become trapped and exposed when they cannot pass a dam.¹⁶⁸ The recommendations supported implementing both lethal and non-lethal removal methods for pinnipeds (seals and sea lions) from the dam areas to allow for more salmon to reach the ocean.¹⁶⁹ It is difficult to ignore the irony that a proposed solution to human-caused elimination of one species is to eliminate a different species.

Additionally, the report recommended increased hatchery production of chinook salmon while maintaining and restoring habitat for the wild stocks.¹⁷⁰ While increased hatchery production would likely increase the number of salmon available for the SRKWs, it is not a good long-term solution.¹⁷¹ For one, hatchery salmon tend to be smaller than wild salmon, and there is concern about the orcas being able to meet their diet requirements without the calorie-dense wild chinook.¹⁷² Hatchery salmon also pose a significant long-term threat to the wild population.¹⁷³ When released into the wild, hatchery salmon reduce the genetic diversity of the wild population, spread disease, and mix genes into the population that are not strong, meaning the population as a whole becomes weaker; hatchery fish dilute natural selection.¹⁷⁴ The wild stocks also have very strong instincts and travel to the same rivers and same spawning grounds for generations; the hatchery salmon lack these instincts, and their general rates of survival are significantly

¹⁶⁴ *Id.* at 40–67.

¹⁶⁵ *Id.* at 16–17.

¹⁶⁶ *Id.* at 41–43.

¹⁶⁷ *Id.* at 50.

¹⁶⁸ Hydropower, STATE OF SALMON IN WATERSHEDS, <https://stateofsalmon.wa.gov/executive-summary/challenges/hydropower-and-dams/> (last visited Nov. 21, 2023).

¹⁶⁹ REPORT AND RECOMMENDATIONS, *supra* note 157, at 52–53.

¹⁷⁰ *Id.* at 45–46.

¹⁷¹ PACIFIC SALMON LAW, *supra* note 4, at 164.

¹⁷² REPORT AND RECOMMENDATIONS, *supra* note 157, at 15.

¹⁷³ See M.R. Christie et al., *Effective Size of a Wild Salmonid Population is Greatly Reduced by Hatchery Supplementation*, 109 HEREDITY 254 (2012).

¹⁷⁴ PACIFIC SALMON LAW, *supra* note 4, at 68.

lower.¹⁷⁵ Hatchery salmon may end up irreparably harming the wild population even further, rather than helping it recover.¹⁷⁶

A final recommendation was to increase chinook abundance by restricting harvest, which the government would achieve through implementation of the 2019–28 Pacific Salmon Treaty between Canada and the United States.¹⁷⁷ This treaty regulates salmon harvests to protect from a tragedy of the commons, and the 2019 version calls for a reduction in all parties' harvests, specifically to allow more salmon availability for the SRKWs.¹⁷⁸ The tribal allocation is part of the United States' share under the treaty,¹⁷⁹ so as the United States' harvest rate goes down (most recently down 5–15% for Oregon and Washington depending on abundance in the 2019 revision), so does the tribal allocation.¹⁸⁰

B. Breaching the Dams

1. Failing Utility of the Dams

Despite the federal government's continued resistance to breaching the Lower Snake River dams,¹⁸¹ there has been ample evidence for years that this is the only meaningful way to restore the salmon stocks, and consequently the SRKWs that depend on them. The building of the dams on the Lower Snake River was largely motivated by the need to create jobs following World War II, and as discussed above, gave little thought to the salmon.¹⁸² The federal government certainly gave no thought to the effects on the orcas, or any of the effects on the ocean for that matter.¹⁸³ From the beginning, the dams have never produced much hydropower, accounting for only about 4% of the Northwest's electricity, half of which is generated during the spring runoff when demand is at its lowest.¹⁸⁴ The dams also provide no flood control, and indeed at least one of them increases flood risk because of the sediment deposit behind it.¹⁸⁵

Moreover, in the late 1990s, multiple studies showed it would not only be affordable to breach the dams, but that the economic benefits—like reduced costs in transportation of goods, maintenance of dams, and mitigation of habitat

¹⁷⁵ *Id.*

¹⁷⁶ *Id.*

¹⁷⁷ REPORT AND RECOMMENDATIONS, *supra* note 157, at 49.

¹⁷⁸ PACIFIC SALMON LAW, *supra* note 4, at 146.

¹⁷⁹ *See id.* at 144.

¹⁸⁰ *Id.* at 144–46.

¹⁸¹ *Salmon Spills*, *supra* note 92, at 24–26.

¹⁸² *Id.* at 20; *see also* PACIFIC SALMON LAW, *supra* note 4, at 62–63.

¹⁸³ *See* PACIFIC SALMON LAW, *supra* note 4, at 62–63, 65.

¹⁸⁴ *Salmon Spills*, *supra* note 92, at 20.

¹⁸⁵ *Id.*

damage—would save anywhere between \$87 million to \$183 million annually.¹⁸⁶ More recently, a 2018 study by the Northwest Energy Coalition found that the power produced by the four Lower Snake River dams was entirely replaceable with clean energy sources like wind and solar at a cost of no more than one dollar a month more to the average household energy bill.¹⁸⁷ As the nation continues to prioritize conservation, efficiency, and renewable energy, the demand for the power from the dams has declined significantly, and BPA is facing financial hardship.¹⁸⁸ BPA’s current plan for its own survival is to sell more electricity at higher prices, but with demand falling and its rates increasing, it is not clear how it plans to profit from this strategy.¹⁸⁹ From both a conservation and economic standpoint, these dams simply do not make sense.¹⁹⁰

2. The Necessity of Breach

Third party scientists aren’t the only ones to conclude that the dams have to go.¹⁹¹ In its latest report on the Columbia Basin salmon from 2022, NMFS itself recognizes that restoring the Snake River stocks “requires dam breaching.”¹⁹² However, in the 2020 EIS issued pursuant to Judge Simon’s order under NEPA, the federal agencies once again chose to maintain the status quo despite concluding that breaching the dams would improve salmon returns by up to 170% and was the only solution with long-term benefits for the salmon.¹⁹³ The agencies claimed breaching the dams would result in a loss of \$527 million in power generation, an increase in carbon emissions by replacing that power with gas, and would destroy navigation on the Snake River.¹⁹⁴ Multiple studies, as discussed

¹⁸⁶ Michael C. Blumm et al., *Saving Snake River Water and Salmon Simultaneously: The Biological, Economic, and Legal Case for Breaching the Lower Snake River Dams, Lowering John Day Reservoir, and Restoring Natural River Flows*, 28 ENV’T. L. 997, 1023–31 (1998) [hereinafter *Saving Snake River Water and Salmon Simultaneously*].

¹⁸⁷ *The Lower Snake River Dams Power Replacement Study: Fact Sheet*, NW. ENERGY COAL., Apr. 4, 2018, <https://nwenergy.org/wp-content/uploads/2018/04/LSRD-Study-Fact-Sheet.pdf>.

¹⁸⁸ *Salmon Spills*, *supra* note 92, at 23.

¹⁸⁹ *Id.* at 24.

¹⁹⁰ *See id.*

¹⁹¹ *See* NAT’L OCEANIC AND ATMOSPHERIC ADMIN., REBUILDING INTERIOR COLUMBIA BASIN SALMON AND STEELHEAD (Sept. 30, 2022).

¹⁹² *Id.* at 17. On May 1, 2023, the U.S. House of Representatives Committee on Natural Resources sent a letter to NMFS expressing concern over NMFS’ assertion that breaching the dams is a “centerpiece action” for restoring salmon habitat and requesting records relevant to this decision for investigation by the Committee. Letter from H. Comm. on Nat. Res. to Richard W. Spinrad, Administrator, NOAA (May 1, 2023), https://naturalresources.house.gov/uploadedfiles/2023.05.01_snake_river_letter.pdf.

¹⁹³ Columbia River System Operations Environmental Impact Statement Record of Decision, 85 Fed. Reg. 63,834, 63855 (Sept. 28, 2020); *Executive Summary: Columbia River Systems Operations Environmental Impact Statement*, ARMY CORPS ENG’RS, et al. 29 (July 2020), <https://usace.contentdm.oclc.org/utills/getfile/collection/p16021coll7/id/14957>.

¹⁹⁴ PACIFIC SALMON LAW, *supra* note 4, at 102.

above, have shown this is simply not the case—breach would result in economic benefits, and power could be replaced with clean, renewable energy.¹⁹⁵ Rather than barging on the river, goods could be transported by truck, which is exactly how NMFS currently transports the salmon around the dams.¹⁹⁶

Given the economic advantage of removing the dams, it is unclear why the federal government continues to avoid the inevitable conclusion that breaching the dams is the only viable long-term solution. Sightline Institute, a Seattle-based non-profit research center, proposed a theory that may explain this.¹⁹⁷ When conducting its studies, such as those for BiOps, the Army Corps considers the “use-values” of salmon as a source of food and recreation, but ignores their “non-use-values,” which are their intrinsic values as a species.¹⁹⁸ An independent study by the economic consulting firm ECONorthwest concluded that Pacific Northwest residents highly value the salmon intrinsically and were, on average, willing to pay between \$34 to \$46 per household per year to protect salmon and help them recover.¹⁹⁹ Throughout the Northwest, this intrinsic valuation creates a sum of \$11 billion that individuals are willing to pay to see the salmon restored.²⁰⁰ This figure, however, is only for households in the Northwest region.²⁰¹ When extended to households nationwide that value Pacific salmon, the number would be approximately six and a half times larger.²⁰² When this figure is factored into the analysis (even just the Northwest), the value of removing the dams greatly

¹⁹⁵ NW. ENERGY COAL., *supra* note 187; *Saving Snake River Water and Salmon Simultaneously*, *supra* note 186, at 1023-31; Adam J. Storch, et al., *A review of potential conservation and fisheries benefits of breaching four dams in the Lower Snake River (Washington, USA)*, WATER BIOLOGY AND SEC., May 2022, at 8; Johnny Mojica et al., National Economic Analysis of the Four Lower Snake River Dams: a Review of the 2002 Lower Snake Feasibility Report/Environmental Impact Statement, EARTH ECON., at 2 (Feb. 2016), https://www.researchgate.net/publication/302505195_National_Economic_Analysis_of_the_Four_Lower_Snake_River_Dams_a_Review_of_the_2002_Lower_Snake_Feasibility_Report_Environmental_Impact_Statement_Economics_Appendix_I?channel=doi&linkId=5730c47708aed286ca0dbe55&showFulltext=true.

¹⁹⁶ PACIFIC SALMON LAW, *supra* note 4, at 135.

¹⁹⁷ *About Us*, SIGHTLINE INSTITUTE, <https://www.sightline.org/about/> (last visited Apr. 22, 2023).

¹⁹⁸ Daniel Malarkey, *It's Not Even Close: Economics Says the Snake River Dams Should Go*, SIGHTLINE INSTITUTE (Sept. 16, 2019, 5:00 AM) <https://www.sightline.org/2019/09/16/its-not-even-close-economics-says-the-snake-river-dams-should-go/>.

¹⁹⁹ *Lower Snake River Dams: Economic Tradeoffs of Removal*, ECONORTHWEST 112 (July 29, 2019),

https://static1.squarespace.com/static/597fb96acd39c34098e8d423/t/5d41bbf522405f0001c67068/1564589261882/LSRD_Economic_Tradeoffs_Report.pdf (citing *Washington Voter Views of Wild Salmon and Snake River Dams*, FM3 (Mar. 28, 2018), <https://www.wildsalmon.org/images/factsheets-and-reports/2018.poll.WA.Voter.Views.Snake-River.Dams.Salmon.Final.pdf>; Kristy Wallmo and Daniel K. Lew, *Public Willingness to Pay for Recovering and Downlisting Threatened Endangered Marine Species*, 26 CONSERVATION BIOLOGY 830 (2012); Mansfield, C. et al., *Klamath River Basin restoration: Nonuse value survey. Final report.*, RTI INT'L (2012), <https://www.rti.org/publication/klamath-river-basin-restoration-nonuse-value-survey-final-report>).

²⁰⁰ *Id.*

²⁰¹ *Id.*

²⁰² *Id.*

outweighs any minimal benefits that remain by keeping them.²⁰³

Additional recognition of the necessity of breach has come from elected officials.²⁰⁴ In 2022, Governor Inslee and U.S. Senator Patty Murray of Washington conducted an investigation and produced a report and recommendations regarding breaching the Lower Snake River dams.²⁰⁵ Based on the report, they concluded that breaching the dams would be the best solution, but that replacement and mitigation of the dams' benefits must be in place first.²⁰⁶ While the recommendation did not unequivocally commit to breaching the dams, they noted "it must be an option we strive to make viable" and committed to working toward salmon recovery.²⁰⁷

Another lawmaker-led breach proposal came from U.S. Congressman Mike Simpson (Republican, Idaho) in 2021.²⁰⁸ Congressman Simpson proposed breaching the lower four dams and estimated a cost of about \$33 billion.²⁰⁹ This cost would not be the cost to breach the dams themselves, which would be closer to \$1.3 to \$2.6 billion,²¹⁰ but the total economic impact on all industries from breach.²¹¹ Although this cost was admittedly significant, the proposal also pointed out that the government has already spent \$17 billion on fish recovery efforts that have been almost wholly unsuccessful, and will continue to spend more on the same efforts that are not working.²¹² Unfortunately, this proposal garnered little support.²¹³

Local tribes are also unanimous in support of removing the dams.²¹⁴ As discussed earlier, the dams have significantly impeded their harvest of salmon on traditional fishing grounds. The Nimíipuu, often referred to as the Nez Perce

²⁰³ *See id.*

²⁰⁴ *See* PATTY MURRAY & JAY INSLEE, LOWER SNAKE RIVER DAMS: BENEFIT REPLACEMENT REPORT (Aug. 25, 2022) https://governor.wa.gov/sites/default/files/2022-11/LSRD%20Benefit%20Replacement%20Final%20Report_August%202022.pdf.

²⁰⁵ *Id.*

²⁰⁶ PATTY MURRAY & JAY INSLEE, RECOMMENDATIONS OF GOVERNOR INSLEE AND SENATOR MURRAY FOLLOWING THE CONCLUSION OF THE JOINT FEDERAL-STATE PROCESS ON SALMON RECOVERY, 2 (Aug. 25, 2022), <https://www.governor.wa.gov/sites/default/files/2022-11/Murray-Inslee%20Process%20Recommendations.pdf>.

²⁰⁷ *Id.* at 4.

²⁰⁸ MIKE SIMPSON, OFF. OF THE U.S. REPRESENTATIVE FOR IDAHO, THE NW. IN TRANSITION, SALMON, DAMS AND ENERGY, WHAT IF? (2021), <https://simpson.house.gov/uploadedfiles/websiteslides2.4.pdf>.

²⁰⁹ *Id.* at 34.

²¹⁰ PACIFIC SALMON LAW, *supra* note 4, at 175.

²¹¹ SIMPSON, *supra* note 208.

²¹² *Id.* at 34.

²¹³ Michael C. Blumm, *The Mistake on the Snake: The Lower Snake River Dams*, 58 IDAHO L. REV. 1, 8 n.23 (2022).

²¹⁴ *Northwest Tribes Remain United Around Lower Snake River Dam Removal and Other Infrastructure Needs for Salmon*, NEZ PERCE TRIBE, <https://nezperce.org/uncategorized/northwest-tribes-remain-united-around-lower-snake-river-dam-removal-and-other-infrastructure-needs-for-salmon/> (last visited Nov. 5, 2023) [hereinafter *Northwest Tribes Remain United*].

Tribe, used to harvest approximately 81 salmon per person per year before the Stevens Treaties.²¹⁵ Now with the dams, they are able to harvest fewer than one salmon per person from both the spring and summer chinook runs.²¹⁶ Although some Republican lawmakers have suggested that there is division among the tribes with regard to the dams, representatives from all 12 local tribes have vehemently rejected this assertion and expressed their united support for removal of the dams.²¹⁷ Mel Sheldon, former chairman of the Tulalip Tribes, expressed the significance of this decision for the SRKWs, stating:

The plight of the Puget Sound orcas, which are sacred to our Nation, are directly tied to the fate of the Snake River Chinook. . . . It would be unfortunate if elected officials were to try and pit Tribal Nations against one another on this issue. We stand united with our indigenous brethren who seek to remove the four lower Snake River dams, just as they stand united with us to ensure that the State of Washington abides by its legal commitment to remove culverts that harm our salmon populations throughout the state.”²¹⁸

The Nez Perce have almost single-handedly rebuilt the fall chinook run on the Snake River.²¹⁹

Additional support can be found from various legal scholars who share a common understanding that the only viable option for salmon recovery is to breach the dams.²²⁰ The consensus is clear: the clock is ticking, and as the federal government continues to delay and dodge the issue, the salmon—and the orcas in turn—inch closer to disappearing.²²¹

²¹⁵ Lynda V. Mapes, *Salmon People: A Tribe's Decades-Long Fight to Take Down the Lower Snake River Dams and Restore a Way of Life*, SEATTLE TIMES, <https://www.seattletimes.com/seattle-news/environment/salmon-people-a-tribes-decades-long-fight-to-take-down-the-lower-snake-river-dams-and-restore-a-way-of-life/> (Dec. 1, 2020) [hereinafter *Salmon People*].

²¹⁶ *Id.*

²¹⁷ *Northwest Tribes Remain United*, *supra* note 214; Nicholas K. Geranios, *Twelve Northwest Tribes Say They are United to Save Salmon*, COLUMBIA BASIN HERALD (May 30, 2021, 12:06 AM), <https://columbiabasinherald.com/news/2021/may/30/twelve-northwest-tribes-say-they-are-united-2/> (“The 12 tribes who support Simpson’s proposal are the Nez Perce, Confederated Salish and Kootenai, Umatilla, Confederated Tribes of the Colville Reservation, Confederated Tribes of Warm Springs, Kootenai, Yakama Nation, Spokane, Shoshone-Bannock, Coeur d’Alene, Shoshone Paiute, and Burns Paiute.”).

²¹⁸ *Northwest Tribes Remain United*, *supra* note 214.

²¹⁹ *Salmon People*, *supra* note 215. The Nez Perce operate a hatchery program in which they intercept returning salmon, harvesting, and fertilizing their eggs before releasing the eggs back into the river. By using this artificial spawning technique, the Nez Perce have “built up this run of chinook from nothing to one of the few successful, reliable chinook fisheries in the basin.”

²²⁰ See, e.g., *Salmon Spills*, *supra* note 92; Michael C. Blumm et. al., *Practiced at the Art of Deception: The Failure of Columbia Basin Salmon Recovery Under the Endangered Species Act*, 36 ENV’T. L. 709 (2006); Catherine Danley, *Battle Royale: The Fight over Sea Lions, Salmon, and Hydroelectric Dams in the Columbia River*, 41 ENVIRONS ENV’T. L. & POL’Y J., Fall 2017.

²²¹ *Salmon Spills*, *supra* note 92, at 15 n.69.

3. Other Dam Removals

There have been several other successful dam removal operations in the Pacific Northwest that revitalized salmon runs.²²² The Elwha River dams were one success story, although not without hurdles.²²³ The dams were originally built in the early 1900s without fish ladders, which devastated the salmon population and completely cut off access to more than 40 miles of spawning grounds.²²⁴ Congress's designation of Olympic National Park in 1938 posed a problem because dams were not authorized to operate in national parks.²²⁵ When the main dam required relicensing in 1976, both local tribes and the National Park Service opposed it and a decades-long battle ensued, with removal finally decided on in 1992, contingent on funds being allocated.²²⁶ Funding approval started in 2000 but it was not until 2010 that the government appropriated sufficient funds for removal of the dams and not until 2014 that the dams actually came out, almost 40 years after discussions of removal began.²²⁷ Salmon recovery was "almost immediate."²²⁸ Within one year of removal of just one of the dams (2013), sockeye salmon returns doubled and by the next year, tripled.²²⁹ Between 2013 and 2015, chinook nests increased by 350%.²³⁰

The removal of the Rogue River Basin dams was another success story, but, like the removal of the Elwha River dams, it took significant time.²³¹ The lowest of the dams was built in 1921 and was regarded by NMFS as the worst dam on the river for salmon because its water diversions decimated juvenile salmon travelling downstream.²³² In 1994, Oregon's state water board ruled the dam must be removed by 2001.²³³ NMFS also found that the dam was violating the ESA by unlawfully taking salmon²³⁴ and filed suit.²³⁵ The local irrigation district that

²²² PACIFIC SALMON LAW, *supra* note 4, at 125–133 This article only addresses a few of the major dam removals in the region. For a more comprehensive discussion of these and other removals, including the removals on the White Salmon River, the Sandy River Basin, the Deschutes River, and the proposed removal on the Skagit River, see PACIFIC SALMON LAW, *supra* note 4.

²²³ *Id.* at 125–26.

²²⁴ *Id.* at 125.

²²⁵ *Id.* at 126.

²²⁶ *Id.*

²²⁷ *Id.*

²²⁸ *Id.*

²²⁹ *Id.*

²³⁰ *Id.*

²³¹ *Id.* at 128–29.

²³² *Id.* at 128.

²³³ *Id.*

²³⁴ *Id.* Not only did the dam impede fish passage, but the juvenile salmon travelling downstream were being diverted by the dam into irrigation canals where they died. *Savage Rapids Dam Removal: The Rogue's Biggest Fish Killer*, WATERWATCH, <https://waterwatch.org/savage-rapids-dam-removal/> (last visited Sept. 27, 2023).

²³⁵ PACIFIC SALMON LAW, *supra* note 4, at 128.

operated the dam agreed to remove it by 2006 pending federal funding, which was allocated by Congress in 2008.²³⁶ Removal occurred in 2009.²³⁷ The two dams immediately upstream of that one were also removed around the same time, one because it became obsolete due to other water sources, and the other because the cost of maintenance and fish passage requirements (\$70 million) was higher than the cost of removal (\$5 million).²³⁸ After the removal of these three dams, the Rogue River flowed openly for the first time in over 100 years.²³⁹

One of the major dam removal projects currently underway is along the Klamath River.²⁴⁰ The Klamath flows over 200 miles through Oregon and Northern California before reaching the Pacific Ocean and produces the most salmon south of the Columbia.²⁴¹ The dams along the river cause similar problems for salmon as those in the Columbia Basin,²⁴² but the history of the dams on the Klamath River is particularly complicated.²⁴³

In 1986, Congress amended the Federal Power Act to require the Federal Energy Regulatory Commission to give “equal consideration” to fish and other environmental concerns in relicensing decisions.²⁴⁴ When the Klamath River dams came up for relicensing, stakeholders, including tribes and federal environmental agencies, provided significant input.²⁴⁵ Because of the agencies’ insistence on expensive fish-passage measures as a condition of the relicensing, dam removal became a viable option.²⁴⁶ The licensee decided bringing the dams into compliance would be uneconomical and agreed to begin removing the lower four dams by 2020.²⁴⁷ However, the logistics of removal have been less than straightforward.²⁴⁸ While Oregon and California have moved forward expeditiously, the federal government has delayed its funding and participation in the project.²⁴⁹ Nevertheless, local tribes and activists worked tirelessly to negotiate a successful agreement with the federal government to remove the dams.²⁵⁰ The first dam was removed in June 2023 and the other three are

²³⁶ *Id.*

²³⁷ *Id.*

²³⁸ *Id.* at 128–29.

²³⁹ *Id.* at 129.

²⁴⁰ *Id.* at 130.

²⁴¹ *Id.*

²⁴² *Id.* at 132 (explaining harms caused to salmon by Klamath River dams).

²⁴³ See HOLLY DOREMUS & DAN TARLOCK, WATER WAR IN THE KLAMATH BASIN: MACHO LAW, COMBAT BIOLOGY, AND DIRTY POLITICS (2008).

²⁴⁴ Electric Consumers Protection Act of 1986, 16 U.S.C. § 797(e) (1986).

²⁴⁵ DOREMUS, *supra* note 243, at 178.

²⁴⁶ *Id.* at 179.

²⁴⁷ PACIFIC SALMON LAW, *supra* note 4, at 132.

²⁴⁸ *Id.* at 132–33.

²⁴⁹ *Id.*

²⁵⁰ Press Release, Yurok Tribe, Federal Regulators Green Light Largest River Restoration Project in US History (Nov. 17, 2022), <https://www.yuroktribe.org/post/federal-regulators-green-light->

scheduled for removal beginning in January 2024.²⁵¹ Fish are expected to be able to freely pass by November 2024.²⁵² The project will be the largest dam removal in U.S. history, reopening approximately 400 miles of fish habitat.²⁵³

The damming of the rivers that feed the San Francisco Delta has also been devastating to the chinook salmon and the SRKWs who rely on them.²⁵⁴ California once contained hundreds of miles of prime chinook spawning habitat, and importantly, the Sacramento River is home to the only winter run of chinook.²⁵⁵ The damming of these rivers has cut off the vast majority of chinook habitat and eliminated certain runs altogether.²⁵⁶ In March 2023, NMFS announced all salmon fishing in California for the year was closed because of historically low chinook numbers.²⁵⁷ Like in the Columbia Basin, there is pressure under the ESA and from the community to address this salmon crisis, not just for the salmon themselves, but because these salmon are also part of the SRKWs' diet and critical to their survival.²⁵⁸

CONCLUSION

The SRKWs are a central symbol of the Pacific Northwest.²⁵⁹ Because of decades of human-caused problems, they are now in critical danger of disappearing.²⁶⁰ From the devastation that the capture of whales for marine parks caused the population, to the ongoing starvation humans are causing them by crippling their only food source, the SRKWs population has fallen to frighteningly

largest-river-restoration-project-in-us-history.

²⁵¹ Juliet Grable, *With One Down, Klamath Dam Removal Proceeds on Schedule*, OR. PUB. BROAD. (July 16, 2023), <https://www.opb.org/article/2023/07/16/klamath-dam-removal-copco-2/>.

²⁵² Malia Reiss, *The Science of Saving Salmon as Klamath Dams Come Down*, U.C. DAVIS (Feb. 24, 2023), <https://www.ucdavis.edu/climate/blog/science-saving-salmon-klamath-river-dams-come-down>.

²⁵³ Grable, *supra* note 251.

²⁵⁴ Chris Clarke, *If Delta Salmon Die, They Could Take Orcas With Them*, KCET (Mar. 3, 2015, 6:15 AM), <https://www.kcet.org/redefine/if-delta-salmon-die-they-could-take-orcas-with-them> [hereinafter *If Delta Salmon Die*].

²⁵⁵ Chris Clarke, *Bay Delta Salmon, Part 1: Damming the Chinook to Near-Extinction*, KCET (June 24, 2015, 4:40 AM), <https://www.kcet.org/redefine/bay-delta-salmon-part-1-damming-the-chinook-to-near-extinction>.

²⁵⁶ *Id.*

²⁵⁷ *Ocean Salmon Sport Fisheries in California Closed for April Through Mid-May 2023*, CAL. DEP'T OF FISH AND WILDLIFE (Apr. 6, 2023), <https://wildlife.ca.gov/News/ocean-salmon-sport-fisheries-in-california-closed-for-april-through-mid-may-2023#gsc.tab=0> (while the closure has technically only been announced through May 15, 2023, none of the three regulatory options proposed by the Pacific Fishery Management Council would authorize salmon fishing until April 2024.)

²⁵⁸ *If Delta Salmon Die*, *supra* note 254.

²⁵⁹ *Saving the Southern Residents*, *supra* note 2; *Northwest Tribes Remain United*, *supra* note 214.

²⁶⁰ See RECOVERY PLAN, *supra* note 28.

low numbers.²⁶¹ The solution is clear: dams must be breached. The salmon crisis has been studied, outlined, and debated ad nauseum, yet as the federal government delays action year after year, the orcas continue to suffer with little recourse.²⁶² The dams on the Lower Snake River do not make sense economically and were an environmental disaster from the beginning because they were hastily put in without thought for their impact.²⁶³ Although there has been a concerted effort to address the threat they pose to ecosystems and public sentiment is generally behind breaching the dams, the litigation has lasted almost 30 years and has little improvement to show for it.²⁶⁴ Moreover, other dams in the Pacific have been successfully breached and have shown that this solution almost immediately results in significant recovery of salmon populations.²⁶⁵ For the sake of the orcas, the salmon, and the entire ecosystem of the Pacific Northwest, it is time the federal government heeds the warnings of scientists, Indigenous peoples, its own citizens, and the federal courts, and breaches these dams.

²⁶¹ See *Saving the Southern Residents*, *supra* note 2.

²⁶² See *Salmon Spills*, *supra* note 91; PACIFIC SALMON LAW, *supra* note 4, at 161.

²⁶³ PACIFIC SALMON LAW, *supra* note 4, at 62–64; *Saving Snake River Water and Salmon Simultaneously*, *supra* note 186.

²⁶⁴ PACIFIC SALMON LAW, *supra* note 4, at 97–102; see also COLUMBIA RIVER SYSTEM BIOLOGICAL OPINION, *supra* note 119, at 1175.

²⁶⁵ PACIFIC SALMON LAW, *supra* note 4, at 125–33.