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### The World's Largest Dam Removal Project: The Klamath River Dams

Michael Blumm

*Lewis & Clark Law School*, [blumm@lclark.edu](mailto:blumm@lclark.edu)

Dara Illowsky

*Lewis & Clark Law School*

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#### Recommended Citation

Michael Blumm & Dara Illowsky, *The World's Largest Dam Removal Project: The Klamath River Dams*, 101 Or. L. Rev. 1 (2022).

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## The World's Largest Dam Removal Project: The Klamath River Dams

Michael C. Blumm\*

Dara Illowsky\*\*

*The Klamath River, draining some 12,000 square miles in southern Oregon and northern California, was once the third largest salmon stream on the West Coast, the life force of Native Americans. The river runs 263 miles from headwaters in Oregon and flows through the Cascades to the Pacific Ocean south of Crescent City, California. The river is unusual in that its origin is near the arid deserts of eastern Oregon and proceeds to run through temperate rainforests of California through a considerable amount of federal and Tribal lands.*

*The Klamath has been dammed for over a century for agriculture and electric power and has been shrouded in controversy during the 21<sup>st</sup> century over the imperiled state of its salmon and sucker fish, which are listed under the Endangered Species Act and to which the Tribes have fishing rights. After a biological opinion led to irrigation cutbacks in 2000, the Bush administration reversed course the next year, leading to a disastrous salmon kill. The beneficiaries of this decision, Klamath basin irrigators, for two decades challenged the 2000 cutbacks as an unconstitutional taking, a claim rejected by the Federal Circuit in 2019 because the senior water rights belong not to the irrigators, but to the Tribes.*

*Concern over the fate of the listed fish surfaced again when PacifiCorp, a regional utility, sought to relicense the dams in its Klamath Project. Federal fish agencies, which have mandatory conditioning authority under the Federal Power Act, prescribed expensive fish passage measures that the utility thought made the dams uneconomical to relicense. There followed a long series of negotiations and several plans to remove the dams and revise water management in the basin. The latter fell through when Congress was unwilling to fund it, but the former—the dam removal plan—has been endorsed by federal and state agencies, the utility, and several Indigenous Tribes. In 2022, the largest dam removal in world history seems about to begin.*

*This article explains the Klamath, its fish, its farms, and its dams and draws some lessons from what has long been a contentious fight over water, power, and fish. For the first time in recent memory, projections look bright for Klamath River fish and those who depend upon them.*

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I. INTRODUCTION

The Klamath is divided into an upper basin, lying in southern Oregon and far northern California, and a lower basin, lying entirely in California.<sup>1</sup> The upper basin is predominantly arid, high desert<sup>2</sup> that relies heavily on the Klamath Project, a federal reclamation project authorized in 1905 pursuant to the Reclamation Act of 1902,<sup>3</sup> to support its heavily agricultural economy.<sup>4</sup> The lack of topographic complexity in the upper watershed makes

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\*Jeffrey Bain Faculty Scholar & Professor of Law, Lewis and Clark Law School.

\*\*J.D. and Certificate in Environmental and Natural Resources Law 2022, Lewis and Clark Law School; B.S. Environmental Science 2014, Brown University. Law Clerk 2022–2023, Alaska Supreme Court Justice Peter J. Maassen.

<sup>1</sup> See CONGRESSIONAL RESEARCH SERVICE, KLAMATH RIVER BASIN: BACKGROUND AND ISSUES 2–4 (2012), [https://www.everycrsreport.com/files/20120607\\_R42157\\_85310f989fd0c99aef07f0607a966a26db6d9368.pdf](https://www.everycrsreport.com/files/20120607_R42157_85310f989fd0c99aef07f0607a966a26db6d9368.pdf) [hereinafter CRS KLAMATH RIVER BASIN REPORT] (showing a map of the Klamath River basin and discussing the geography of the upper basin and lower basin).

<sup>2</sup> HOLLY DOREMUS & A. DAN TARLOCK, WATER WAR IN THE KLAMATH BASIN: MACHO LAW, COMBAT BIOLOGY, AND DIRTY POLITICS 26 (2008).

<sup>3</sup> Reclamation Act of 1902, 43 U.S.C. § 372 *et seq.*

<sup>4</sup> CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 2.

water storage in this largely agricultural region difficult, so most of the storage capacity rests on the shallow waters of Upper Klamath Lake.<sup>5</sup> The lower basin, in contrast, gets most of the region's rainfall and is the origin of 88 percent of the Klamath River Basin's runoff, despite representing only about half of the basin's land area.<sup>6</sup>

The Klamath River basin is a 12,000 square mile expanse of land running from Upper Klamath Lake in south central Oregon's high desert. The river crosses into California and ultimately empties into the Pacific Ocean within the boundaries of Redwood National Park.<sup>7</sup> The third largest in the western United States in terms of flow,<sup>8</sup> the river once was also the third largest salmon producing river on the West Coast.<sup>9</sup> But the damming of the river, beginning in 1908, disrupted salmonid migration, and the Iron Gate Dam now blocks all upstream fish passage just below the California border.<sup>10</sup> But the lower Klamath River remains one of the longest undammed rivers in California,<sup>11</sup> at 286 miles.<sup>12</sup> In 1981, the Secretary of the Interior designated the lower Klamath River a national wild and scenic river.<sup>13</sup> In 1988, the voters of Oregon also designated 11 miles of the upper Klamath River in Oregon as a state scenic river, which the Secretary of the Interior later added to the national system in 1994.<sup>14</sup>

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<sup>5</sup> DOREMUS & TARLOCK, *supra* note 2, at 25.

<sup>6</sup> CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 4.

<sup>7</sup> DOREMUS & TARLOCK, *supra* note 2, at 23.

<sup>8</sup> CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 1.

<sup>9</sup> *Klamath River Renewal Project*, KLAMATH RIVER RENEWAL CORPORATION, <https://klamathrenewal.org/the-project/> (last visited Oct. 5, 2021).

<sup>10</sup> DOREMUS & TARLOCK, *supra* note 2, at 31. *See also* CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 4.

<sup>11</sup> *Id.* at 34.

<sup>12</sup> *Klamath National Wild & Scenic River*, U.S. FOREST SERVICE, <https://www.fs.usda.gov/recarea/klamath/recarea/?recid=13066#:~:text=The%20Klamath%20River%20is%20a,to%20navigate%20on%20their%20own> (last visited Dec. 2, 2021).

<sup>13</sup> Approval for Inclusion in the National Wild and Scenic Rivers System as State Administered Components, 46 Fed. Reg. 7,484 (Jan. 23, 1981).

<sup>14</sup> *Upper Klamath Wild and Scenic River*, U.S. BUREAU OF LAND MANAGEMENT, <https://www.blm.gov/programs/national-conservation-lands/oregon-washington/upper-klamath->

One consequence of the development of the Klamath has been the addition of several species of cultural significance to the Klamath tribes to the federal endangered species list. The U.S. Fish and Wildlife Service (FWS) listed the Southern Oregon/Northern California Coast population of coho salmon in the lower basin as threatened under the Endangered Species Act (ESA) in 1997.<sup>15</sup> Among the factors contributing to the decline of the coho and the need for the listing, the National Marine Fisheries Service (NMFS) cited declines in water quality, altered streamflows, and fish passage impediments.<sup>16</sup> According to NMFS, the major activities responsible for the decline of coho salmon in Oregon and California included dams, water withdrawals, and unscreened diversions for irrigation.<sup>17</sup>

A decade earlier, in 1988, FWS listed the shortnose sucker and the Lost River sucker in Upper Klamath Lake as endangered.<sup>18</sup> Both species have historically served as major food sources for the Klamath Tribes of the upper basin.<sup>19</sup> FWS found the primary factors behind the widespread decline of the suckers to include “damming of rivers, instream flow diversion, draining of marshes, dredging of Upper Klamath Lake and other forms of water manipulation,” with dams being “particularly destructive.”<sup>20</sup> This conflict between the Klamath River as a healthy habitat for native species, especially those culturally important to the Indigenous peoples of the region, and the river as a resource for agriculture, irrigation, and power has generated decades of strife throughout the basin.

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wsr#:~:text=1988%3A%20The%20state%20of%20Oregon,Wild%20and%20Scenic%20Rivers%20Act.(last visited March 16, 2022).

<sup>15</sup> Threatened Status for Southern Oregon/Northern California Coast Evolutionarily Significant Unit (ESU) of Coho Salmon, 62 Fed. Reg. 24,588 (1997).

<sup>16</sup> *Id.* at 24,592.

<sup>17</sup> *Id.*

<sup>18</sup> Determination of Endangered Status for the Shortnose Sucker and Lost River Sucker, 53 Fed. Reg. 27,130 (1988).

<sup>19</sup> U.S. FISH & WILDLIFE SERVICE, LOST RIVER & SHORTNOSE SUCKER (DELTISTES LLUXATUS & CHASMISTES BREVIROSTRIS) (August 2010), <https://www.fws.gov/klamathfallsfwo/es/factsheet/LRSN-Sucker2010.pdf>.

<sup>20</sup> *Id.*

The epitome of the management complexity of Klamath Basin water was a recent decision of federal District Court Judge Michael McShane, who in May 2021 declined to issue an injunction requiring the Bureau of Reclamation to reduce flow releases from Klamath Lake to aid endangered sucker fish in, the lake at the request of the Klamath Tribes, because it would harm downstream threatened coho salmon central to the culture and diet of the Yurok and Karuk Tribes.<sup>21</sup> In his decision, Judge McShane noted that the drought that had raised the Klamath Tribes' concerns was beyond the federal Bureau's control, so the agency could not be held responsible for the unprecedented environmental conditions.<sup>22</sup>

The Klamath Hydroelectric Project (KHP), composed of several non-federal hydroelectric dams, is regulated by the Federal Energy Regulatory Commission (FERC) under the Federal Power Act (FPA).<sup>23</sup> The licensee, PacifiCorp, faced with an impending 2006 expiration of its license for the project, decided it was too expensive to proceed with relicensing.<sup>24</sup> This decision was due in part to the FPA's relicensing requirements and the public attention focused on Klamath salmon in the wake of the 2001–2002 conflict. In 2005, PacifiCorp entered multi-party negotiations to devise a solution for the Klamath, its fish, and its people.<sup>25</sup> Five years later, in 2010, 48 parties, including PacifiCorp, Oregon, California, various federal agencies, the Karuk Tribe, the Klamath Tribes, the Yurok Tribe, and irrigation, conservation, and fishing groups executed the Klamath Hydroelectric Settlement

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<sup>21</sup> *Judge nixes reduced Klamath River flows for sucker fish*, E&E NEWS GREENWIRE (May 10, 2021), <https://subscriber.politicopro.com/article/eenews/1063732107>.

<sup>22</sup> *Id.*

<sup>23</sup> Federal Power Act, 16 U.S.C. § 791a–828c (2018).

<sup>24</sup> Water Education Foundation, *Klamath River Basin Chronology*, <https://www.watereducation.org/aquapedia/klamath-river-basin-chronology> (last visited Oct. 22, 2021).

<sup>25</sup> *Id.*

Agreement (KHSA).<sup>26</sup> The KHSA established a process for the removal of the project's four hydroelectric dams. This agreement, amended in 2016,<sup>27</sup> called for the project license to be transferred to the Klamath River Renewal Corporation (KRRC), a private, independent nonprofit organization, to manage the removal of the dams and the restoration of the Klamath River ecosystem.<sup>28</sup> On June 17, 2021, the parties to the agreement succeeded in obtaining approval from FERC to transfer the license.<sup>29</sup> But KRRC must still get FERC's approval to decommission and remove the dams under FERC's license surrender procedures.<sup>30</sup> Thus, fifteen years after the agreement to remove the dams, their fate remains in limbo.

This article examines the Klamath Basin conflict, its complex legal context, and its future. Section I introduces the river and its people. Section II is a brief history of the damming of the basin and the agricultural transformation that occurred in the early 20<sup>th</sup> century. Section III explains the ESA listings that the basin's development produced, and the resulting conflict between salmon science and the irrigation claims of local farmers and ranchers. Section IV discusses a critical turning point in the public conversation around the

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<sup>26</sup>Joint Application for Approval of License Transfer and Request for Expedited Review and Other Relief, Project No. 14803 (Jan. 13, 2021), [https://klamathrenewal.org/wp-content/uploads/2021/01/21\\_0113-Joint-Application-for-Approval-of-License-Transfer-and-Request-for-Expedited-Review-and-Other-Relief.pdf](https://klamathrenewal.org/wp-content/uploads/2021/01/21_0113-Joint-Application-for-Approval-of-License-Transfer-and-Request-for-Expedited-Review-and-Other-Relief.pdf).

<sup>27</sup>The original agreement required congressional authorization to be implemented in full. PACIFICCORP, KLAMATH HYDROELECTRIC SETTLEMENT AGREEMENT IMPLEMENTATION REPORT 7 (2018), [https://www.pacificcorp.com/content/dam/pcorp/documents/en/pacificcorp/energy/hydro/klamath-river/khsa-implementation/implementation-plans/2018-KHSA\\_ImpRptF\\_8-24-18.pdf](https://www.pacificcorp.com/content/dam/pcorp/documents/en/pacificcorp/energy/hydro/klamath-river/khsa-implementation/implementation-plans/2018-KHSA_ImpRptF_8-24-18.pdf). But as discussed further *infra* Part VI, multiple attempts to pass bills authorizing the agreement failed. *See id.* at 11 (discussing the failure of a bill authorizing the agreement following renewed conflicts in the Klamath Basin and opposition from members of Congress and local representatives); *see also* Daniel McCool, Integrated Water Resources Management and Collaboration: The Failure of the Klamath River Agreements, 30 J. POLICY HISTORY 83, 99 (2018) (discussing the defeat of a second bill authorizing the agreement which was then defeated following opposition led by Oregon Republican Congressman Greg Walden). The amended agreement eliminated the need for federal legislation and instead planned to achieve dam removal through the FERC license transfer and surrender process. *See* discussion notes 286–291 and accompanying text.

<sup>28</sup> *Id.*

<sup>29</sup>*Order Approving Transfer of License, Project Nos. 2082-062, 14803-000, 14803-004*, 175 FERC ¶ 61,236 at P. 46 (June 17, 2021) [hereinafter June 2021 Transfer Order]

<sup>30</sup> *Id.*

Klamath basin: the salmon kill of 2002 and its aftermath. Sections V–VII turn to the article’s centerpiece: the plan to remove the four PacifiCorp hydroelectric dams and the prospects for meeting a scheduled removal in 2023. We conclude that the Klamath conflict, and the prospects for the world’s largest dam removal, hold important lessons for other river basins and other tribes, including highlighting potential conflicts between science and democracy in river restoration.

## II. THE RIVER AND ITS PEOPLE

The Klamath River is the third largest river draining into the Pacific Ocean south of Canada.<sup>31</sup> The lower Klamath once supported salmon runs of more than one million fish, making it the third largest salmon run on the West Coast.<sup>32</sup> But in recent years, the Klamath’s salmon run has dropped to fewer than 30,000 fish, with no recovery in sight due to prolonged threats from drought and disease.<sup>33</sup>

Prior to European settlement, the indigenous peoples inhabiting the Lower Basin enjoyed million-pound annual harvests of coho and chinook salmon prior to European settlement, while the Klamath Tribes of the Upper Basin relied upon *Koptu* and *C’waam* (Lost River and shortnose suckers) in Klamath Lake as major food sources.<sup>34</sup> According to the Klamath Tribes,<sup>35</sup> the first white settler stepped foot on their upper basin land in 1826.<sup>36</sup>

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<sup>31</sup> *Klamath River*, WESTERN RIVERS CONSERVANCY, <https://www.westernrivers.org/discover/river-of-the-month/klamath-river> (last visited Jan. 6, 2022).

<sup>32</sup> McCool, *supra* note 27, at 84.

<sup>33</sup> *Id.*

<sup>34</sup> DOREMUS & TARLOCK, *supra* note 2, at 27, 30; *see also Klamath Tribes History*, THE KLAMATH TRIBES, <https://klamathtribes.org/restoring-fish-and-a-dying-lake/> (last visited Nov. 21, 2021).

<sup>35</sup> “Klamath Tribes” refers collectively to three distinct tribal groups that have occupied the Upper Basin since time immemorial: the Klamath, the Modoc, and the Yahooskin-Paiute. <https://klamathtribes.org/history/>. *See also* CRS Report, *supra* note 8, at 8, explaining that the “‘Klamath Tribe’ is actually composed of three historically distinct tribal groups,” but that it was common for the United States to “make a treaty with ‘one’ tribe, which actually consisted of a combination of several tribes that were historically distinct.”

<sup>36</sup> KLAMATH TRIBES, <https://klamathtribes.org/history/> (last visited Oct. 5, 2021).



Hostilities between the tribes and the settlers ensued, and eventually, in 1864, the Klamath Tribes of the upper basin ceded 23 million acres of their land in a treaty with the United States.<sup>37</sup> That treaty reserved approximately 1.5 million acres for the tribes, as well as hunting, fishing, gathering, and water rights.<sup>38</sup> The lower basin tribes (the Yurok, Hoopa Valley, Karuk, Quartz Valley, and Resighini Rancheria),<sup>39</sup> on the other hand, never secured treaty rights. Instead, President Franklin Pierce created the Yurok Reservation by executive order in 1855.<sup>40</sup> President Grant created the Hoopa Valley Reservation in 1877, also by executive order.<sup>41</sup> Both orders reserved the tribes' hunting and fishing rights, and the Ninth Circuit has held that these rights are no less legitimate for having been reserved in executive orders, rather than treaties.<sup>42</sup> The Karuk, in contrast, never got their own reservation, and instead today occupy scattered parcels of trust lands.<sup>43</sup> Consequently, the Karuk Tribe's hunting and fishing rights are less certain.<sup>44</sup> Of the five lower basin tribes, this paper focuses on the three tribes that signed the Klamath agreements: the Klamath Tribes, the Karuk, and the Yurok.<sup>45</sup>

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<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

<sup>39</sup> CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 8.

<sup>40</sup> *Formation of Reservations*, THE YUROK TRIBE, <https://www.yuroktribe.org/formation-of-reservations> (last visited Oct. 5, 2021). The Yurok Reservation includes the Resighini Rancheria. Final Environmental Impact Statement for Hydropower License, Klamath Hydroelectric Project FERC Project No. 2082-027, at 3-543 (November 2007).

<sup>41</sup> DOREMUS & TARLOCK, *supra* note 2, at 67.

<sup>42</sup> *Parravano v. Babbitt*, 70 F.3d 539 (9th Cir. 1995).

<sup>43</sup> DOREMUS & TARLOCK, *supra* note 2, at 67. The Quartz Valley Indian Reservation was first established in 1938 by proclamation of the Secretary of the Interior as the Shasta and Upper Klamath Indian Reservation. Final Environmental Impact Statement for Hydropower License, Klamath Hydroelectric Project FERC Project No. 2082-027, at 3-543 (November 2007). The proclamation did not reserve fishing rights for the tribe. 3 Fed. Reg. 1427 (1938).

<sup>44</sup> DOREMUS & TARLOCK, *supra* note 2, at 75.

<sup>45</sup> CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 8. The Quartz Valley and Resighini Rancheria were not included in negotiations, as their interests in the Klamath fisheries was deemed insufficient. *Id.* at n. 44. The Hoopa Valley Tribe was included in the negotiations but opposed the original 2010 agreements because the Tribe felt the provisions of the Klamath Basin Restoration Agreement, discussed *infra* Part VII, might interfere with the United States' duty to assert and protect tribal fishery rights by subordinating the Tribe's priority water rights to the junior water rights of the Klamath Reclamation Project. *Id.* The Tribe was also concerned that the terms of the agreements would not provide enough water to support fish populations in the

By the 1950s, the Klamath Tribes were among the strongest and most prosperous tribal nations in the U.S.<sup>46</sup> They were the only tribes in the United States at the time to pay for all the federal, state, and private services used by their members.<sup>47</sup> This ability to pay was due in part to their wealth of natural resources, including the largest ponderosa pine forests in the western United States, and “an eagerness to turn new economic opportunities to [the Tribes’] advantage,” including freighting and ranching.<sup>48</sup> In spite of the tribes’ wealth and stability—or perhaps because of it—and despite the rights reserved by the tribes in their 1864 treaty with the United States, Congress terminated their federal recognition in 1954 in the Klamath Termination Act.<sup>49</sup> As a result, the federal government ceased providing human services to the tribe, disestablished the Klamath reservation, deprived tribe members of their legal status as Indians, and authorized for sale the tribes’ timber resources.<sup>50</sup> The federal government gave tribal members the “Hobson’s choice” of either selling their interests— thus terminating their tribal membership—or maintaining their interests, but having them held not by a federal administrative trustee, but instead by a Portland bank.<sup>51</sup> The majority of the tribal members

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lower Klamath basin, and believed that the agreements would delay dam removal. Ryan Burns, *A Fight Between Humboldt Stakeholders Over the Klamath Dams is Impacting Environmental Protections Across the Country*, LOST COAST OUTPOST, <https://lostcoastoutpost.com/2019/jun/12/klamath-ruling-environmental-impacts/> (June 12, 2019 12:16 PM). As to the amended KHSA, the Tribe remains concerned about the cap the agreement places on PacifiCorp customer, state, and federal contributions to dam removal costs. Dylan Brown, *Hoopa Valley Tribe wins lawsuit against aging Klamath River dams and PacifiCorp*, ABC, <https://krcrtv.com/north-coast-news/eureka-local-news/hoopa-valley-tribe-wins-lawsuit-against-aging-klamath-river-dams-and-pacifico> (Jan. 25, 2019). The Tribe would prefer that FERC proceed with relicensing the dams, as they believe that any new license would require PacifiCorp to provide for fish passage, and that the only way to achieve that would be to remove the dams. Burns, *supra*.

<sup>46</sup> KLAMATH TRIBES, *supra* note 36.

<sup>47</sup> *Id.*

<sup>48</sup> *Id.*

<sup>49</sup> Klamath Indians Termination of Federal Supervision, Pub L. No. 587-732, 68 Stat. 718 (1954).

<sup>50</sup> See DOREMUS & TARLOCK, *supra* note 2, at 64.

<sup>51</sup> See *id.* at 64–65.

sold their interests, and ten years later the unsold land was acquired by the United States and became part of the Fremont-Winema National Forest.<sup>52</sup>

In 1986, following decades of tribes across the country organizing to reassert their quasi-sovereign status, the Klamath Tribes regained their federal recognition, but they did not regain any of their reservation land.<sup>53</sup> Despite this victory, the Klamath Tribes claim they have struggled to regain “the loss of cultural and spiritual identity and economic self-sufficiency” caused by “the devastating legacy of termination.”<sup>54</sup> Central to the tribes’ efforts is the restoration of healthy *C’waam* and *Koptu* fish populations.<sup>55</sup> Once harvested by the thousands as a mainstay of the Klamath Tribes’ diet, today the tribes’ annual harvest is limited to just two fish for ceremonial purposes,<sup>56</sup> as chronically low water levels and low water quality brought on by drought and unsustainable agricultural and irrigation practices have led the fish to the federal endangered species list.<sup>57</sup> Restoring and supporting a sustainable *C’Waam* and *Koptu* fishery is now “a cornerstone” of the Klamath Tribes’ plan to restore their economic self-sufficiency.<sup>58</sup>

In contrast, the various species of salmon, particularly the chinook and coho, below the Klamath dams in the lower basin are inextricably connected with the history, culture, and survival of the lower Klamath tribes.<sup>59</sup> These tribes have fished the Klamath River since time immemorial.<sup>60</sup> As recently as the late 1980s, they enjoyed a significant commercial fishing

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<sup>52</sup> See *id.* at 65.

<sup>53</sup> See *id.*; see also KLAMATH TRIBES, *supra* note 36.

<sup>54</sup> KLAMATH TRIBES, *supra* note 34.

<sup>55</sup> *Id.*

<sup>56</sup> *Id.*

<sup>57</sup> Sucker ESA Listing, *supra* note 18; see also KLAMATH TRIBES, *supra* note 36.

<sup>58</sup> KLAMATH TRIBES, *supra* note 36.

<sup>59</sup> CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 5.

<sup>60</sup> Brook Thompson, *The familial bond between the Klamath River and the Yurok people*, HIGH COUNTRY NEWS 15, 20–21 (Sept. 2021).

industry.<sup>61</sup> Salmon are also deeply culturally and spiritually important to the lower Klamath tribes, providing a connection to ancestors and ceremonies rooted in ancient times, such as the First Salmon Ceremony, with which tribes in the Klamath Basin honor the salmon for the coming year.<sup>62</sup>

But like the Klamath Tribes of the upper basin, the Yurok, Karuk, and other lower basin tribes have suffered immensely from the effects of dams and poor water management.<sup>63</sup> For example, the construction of the Klamath dams in 1911 and 1962 coincided with the emergence of diabetes in the Karuk Tribe,<sup>64</sup> and by 2005 the incidence of diabetes among the Karuk people was 21 percent— nearly four times the U.S. average— and the estimated rate of heart disease was 39.6 percent— three times the U.S. average.<sup>65</sup> This calamity was due in large part to the loss of access to traditional foods, particularly salmon.<sup>66</sup> Perhaps as important for the Karuk people, “[t]he act of eating salmon from the Klamath River affirms sense of place, identity, connection, and community,”<sup>67</sup> and the loss of that tradition can be devastating. The Yurok people likewise have suffered physically and emotionally from the loss of the traditional salmon diet,<sup>68</sup> with the tribe declaring a “state of emergency for tribal mental health” in 2016, due in part, as one Yurok tribal member put it, to “[t]he loss of our

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<sup>61</sup> CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 5–6.

<sup>62</sup> Thompson, *supra* note 60, at 20.

<sup>63</sup> *Id.* at 20–21.

<sup>64</sup> *Id.* at 20.

<sup>65</sup> U.S. DEPARTMENT OF THE INTERIOR, KLAMATH FACILITIES REMOVAL FINAL ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT 3.12-28, [https://kbifrm.psmfc.org/wp-content/uploads/2017/05/2012\\_0246\\_Klamath-Facilities-Dam-Removal-Final-EIS.pdf](https://kbifrm.psmfc.org/wp-content/uploads/2017/05/2012_0246_Klamath-Facilities-Dam-Removal-Final-EIS.pdf) [hereinafter KLAMATH FACILITIES REMOVAL FEIS/EIR].

<sup>66</sup> *See id.* at 3.12-25 (discussing the effects on tribal health from having “fewer available fish” as a result of dam operations, making tribal members “likely to consume less of the traditional food base and pay less attention to the culturally inherited management traditions of a ‘Salmon People’”).

<sup>67</sup> *Id.* at 3.12-28.

<sup>68</sup> *Id.* at 3.12-43.

fish.”<sup>69</sup> Once the wealthiest people in what became California, the Karuk, Yurok, and Hoopa Tribes are now among the poorest.<sup>70</sup>

Changes to the flow and quality of the Klamath itself as a result of the dams have also been devastating to the culture, traditions, spirituality, and sense of self of the various Klamath tribes. The Yurok, for example, “base time and direction on the flows of the Klamath River.”<sup>71</sup> According to one Yurok elder during tribal consultation over the proposed removal of the Klamath dams, “Without this river we would not know who we are, where we’re from, or where we’re going.”<sup>72</sup> Etchings in rocks along the Klamath River provide instructions directly from the Creator to the Yurok people, including one “warning that when the rivers stop flowing that will mark the end of the Yurok world.”<sup>73</sup> For other tribes, such as the Klamath Tribes in the upper basin and the Karuk, ritual bathing in the river has been disrupted by the effects of dams on water quality.<sup>74</sup>

Ocean fishermen have also suffered greatly from the loss of healthy fish populations in the Klamath Basin. As anadromous fish, salmon are born in freshwater, migrate to the ocean to mature, and return to freshwater to spawn.<sup>75</sup> Disruption at any point in this life cycle within the basin, even for one generation, can therefore have devastating effects on the ocean

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<sup>69</sup> Thompson, *supra* note 60, at 21.

<sup>70</sup> U.S. DEPARTMENT OF THE INTERIOR, *supra* note 65, at 3.12-29.

<sup>71</sup> *Id.*, *supra* note 65, at 3.12-40.

<sup>72</sup> *Id.*

<sup>73</sup> *Id.* at 3.12-42.

<sup>74</sup> *See id.* at 3.12-11 (“[T]he water of the Klamath River is widely viewed as inappropriate” for ritual uses by the Klamath Tribes “because of the effects of the dams on water temperature, algae development, and other variables of water quality.”) and 3.12-26 (describing how “[d]egraded water quality in the Klamath Basin . . . has impaired the ability of Karuk to use the water for cultural purposes,” including ceremonial bathing and cultural ceremonies traditionally involving the ingestion of river water).

<sup>75</sup> *Salmon of the West*, U.S. FISH AND WILDLIFE SERVICE, <https://www.fws.gov/salmonofthewest/salmon.htm#:~:text=Salmon%20are%20anadromous%2C%20meaning%20they,to%20spawn%20a%20new%20generation.&text=Salmon%20may%20travel%203%2C000%20miles,the%20ocean%20leg%20of%20migration> (last visited Jan. 7, 2022).

fishery for years afterward.<sup>76</sup> For example, following the 2002 Klamath River fish kill, discussed further in Part IV below, continuing population effects from the kill four years later led NMFS to severely restrict ocean fishing for salmon due to low numbers of naturally spawning adults in the region.<sup>77</sup> West Coast commercial fishermen endured 700 miles of emergency ocean salmon fishery closures in 2006 and mass unemployment in the salmon fleet.<sup>78</sup> As Glen Spain, Northwest Regional Director for the Pacific Coast Federation of Fishermen's Associations, described it: "Ghosts of those lost fish lingered as subsequent generations of salmon dwindled, the years of missing spawners taking their toll"<sup>79</sup> and haunting the fishing community for years.<sup>80</sup>

Pacific coast commercial fishermen have therefore often found themselves allied with the tribes, conservation groups, and others in the fight to restore natural flows and improve water quality in the Klamath Basin.<sup>81</sup> Restoring fish populations in the basin would revive ocean fisheries from Florence, Oregon to Fort Bragg, California, where coastal communities have seen their salmon harvest nearly disappear.<sup>82</sup>

In addition to the damming of the Klamath, the basin has been transformed by agricultural development and the settlement of a politically powerful irrigation community, particularly in the upper basin, despite the region's severe climatic conditions which make it

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<sup>76</sup> See Glen H. Spain, *Fishermen Join Tribes, Conservation Groups, to Protect Klamath River Salmon*, EARTHJUSTICE (Feb. 21, 2017), <https://earthjustice.org/blog/2017-february/fishermen-join-tribes-conservation-groups-to-protect-klamath-river-salmon> (stating, following a dramatic loss of juvenile salmon from a parasite in 2014 and 2015, that "[t]he impact of two years of heavy juvenile mortality will be felt for years, as fewer young fish mean fewer adult spawners two to three years in the future").

<sup>77</sup> CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 10.

<sup>78</sup> See Spain, *supra* note 76.

<sup>79</sup> See *id.*

<sup>80</sup> *Id.*

<sup>81</sup> See *id.*

<sup>82</sup> Alex Schwartz, *Politicians to PacifiCorp: Get a Move-On with Dam Removal*, HERALD & NEWS (Aug. 19, 2020) [https://www.heraldandnews.com/news/local\\_news/environment/politicians-to-pacificorp-get-a-move-on-with-dam-removal/article\\_1dcacb42-9356-53b6-9770-71cec6f6f7f0.html](https://www.heraldandnews.com/news/local_news/environment/politicians-to-pacificorp-get-a-move-on-with-dam-removal/article_1dcacb42-9356-53b6-9770-71cec6f6f7f0.html).

relatively unproductive.<sup>83</sup> Under Oregon law, irrigators can acquire property rights in water,<sup>84</sup> facilitating the extensive farming of crops such as wheat, malt barley, potatoes, onions, and alfalfa.<sup>85</sup> Although irrigation projects, subsidized water deliveries, and Oregon water law make farming possible in the upper basin, the region's harsh and arid climate prevents it from being particularly profitable.<sup>86</sup> But for many farmers in the upper basin, the economic unviability of farming in the region is not relevant, as many "view farming not as a business but as a way of life."<sup>87</sup> The resolve of these farmers is likely to be tested in the near future, however, as the security of irrigation water rights was recently undermined by a Federal Circuit decision making clear that irrigators' rights are junior to the senior rights of the Klamath Tribes.<sup>88</sup> How much change will result in water flows following this decision is not yet clear.

### III. THE DAMS: TRANSFORMING THE KLAMATH BASIN

Today, the upper basin of the Klamath River is hardly recognizable as the river that supported the various tribes of indigenous peoples since time immemorial, due to the dams, irrigation projects, and other water diversions that now obstruct the river's natural flow. Four of these dams are hydroelectric dams owned and operated by PacifiCorp, an investor-owned utility,<sup>89</sup> and are the focus of this article. Those dams are JC Boyle, Copco No. 1 and No. 2,

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<sup>83</sup> See DOREMUS & TARLOCK, *supra* note 2, at 26 (noting that none of the lands in the Upper Basin fall in the U.S. Department of Agriculture's highest productivity class).

<sup>84</sup> *Baley v. United States*, 134 Fed. Cl. 619, 642 n. 12 (2017).

<sup>85</sup> CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 4.

<sup>86</sup> DOREMUS & TARLOCK, *supra* note 2, at 29.

<sup>87</sup> *Id.* at 29.

<sup>88</sup> *Baley*, 134 Fed. Cl. at 679 ("The fact is that the Tribes' reserved water rights are senior to the water rights held by the [irrigator] plaintiffs and, therefore, plaintiffs had no entitlement to receive any water until the Tribes' senior rights were fully satisfied."); see also *infra* notes 200–217 and accompanying text.

<sup>89</sup> CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 7.

and Iron Gate.<sup>90</sup> Together, these four hydroelectric dams, along with a fifth dam that generates no electricity, but regulates water levels in Keno Reservoir, and three related hydroelectric developments, make up the Klamath Hydroelectric Project (KHP).<sup>91</sup>

Siskiyou Electric Power and Light first envisioned the project in 1911 as part of a plan for the long-term development of the Klamath River.<sup>92</sup> Just six years after the Secretary of the Interior's 1905 authorization of the Klamath Project—a reclamation project to store water, divert water for irrigation, and control flooding—the hydroelectric project was part of a long period of practically unbridled expansion of settlement in the Klamath Basin, beginning with the discovery of gold in the lower Klamath around 1850.<sup>93</sup> The first dam on the mainstem of the river, Copco 1, became operational in 1918, cutting off salmon runs to the Upper Klamath Basin.<sup>94</sup> The next mainstem dams followed in 1925 (Copco 2), 1958 (J.C. Doyle Dam), and 1962 (Iron Gate Dam).<sup>95</sup>

Federally owned reclamation dams are distinct from the dams of the Project in that they are primarily water projects to irrigate arid western lands, although many were equipped to provide hydroelectric power as well.<sup>96</sup> The 1902 Reclamation Act<sup>97</sup> authorized the construction of these dams, and became the pillar of federal subsidization of western

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<sup>90</sup> Klamath River Renewal Corporation, *The Project*, <https://klamathrenewal.org/the-project/> (last visited Dec. 30, 2021).

<sup>91</sup> PacifiCorp, *Klamath River*, <https://www.pacificorp.com/energy/hydro/klamath-river.html> (last visited Dec. 30, 2021).

<sup>92</sup> Klamath Hydroelectric Project Request for Determination of Eligibility, PACIFICORP 27 (Oct. 2003), [https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/klamath-river/relicensing/klamath-final-license-application/Exhibit\\_E\\_Appendices\\_E\\_6E\\_Request\\_for\\_Determination\\_of\\_Eligibility\\_Text.pdf](https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/klamath-river/relicensing/klamath-final-license-application/Exhibit_E_Appendices_E_6E_Request_for_Determination_of_Eligibility_Text.pdf)

<sup>93</sup> See *Klamath River Basin Chronology*, WATER EDUCATION FOUNDATION, <https://www.watereducation.org/aquapedia/klamath-river-basin-chronology> (last visited Oct. 5, 2021).

<sup>94</sup> *Id.*

<sup>95</sup> *Id.*

<sup>96</sup> See 2 WATERS AND WATER RIGHTS § 41.02 (Amy K. Kelley, ed., 3rd ed. LexisNexis/Matthew Bender 2022).

<sup>97</sup> Reclamation Act of 1902, 43 U.S.C. § 372 *et seq.*



development, enabling the expansion of non-native colonization into arid western regions that previously could never have supported the resource intensive lifestyles of the settlers and their cattle.<sup>98</sup>

Non-federal hydroelectric dams are regulated under the terms of the FPA.<sup>99</sup> The 1920 FPA assigned the licensing and regulation of hydroelectric dams under the authority of a designated multi-officer agency, as opposed to the previous pattern of Congress individually authorizing each project.<sup>100</sup> The impetus for reform came from the Progressive Conservation movement of the early twentieth century, when well-known figures such as Theodore Roosevelt and Gifford Pinchot “decried congressional authorization of hydroelectric projects as haphazard and dependent on pork barrel politics.”<sup>101</sup> The Progressives got their way to some extent with the passage of the FPA in 1920, but the FPA was a compromise between the conservationists and private power interests—balancing regulation of private hydroelectric projects, while promoting development by granting licenses for up to 50-year terms.<sup>102</sup> The term-limited licenses ensured that at some point during the life of the dam, its utility as a power generator, and its effect on the ecology and other public uses of rivers would periodically be subject to review.<sup>103</sup>

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<sup>98</sup> See Waters and Water Rights, *supra* note 96, § 41.02 (discussing the impossibilities of successful homesteading of the arid western lands absent federal aid). Arguably many of these lands still cannot sustainably support the agricultural and ranching practices that sustain non-Indigenous communities in the arid west, given the ecological and social tragedies wrought upon this region and its Indigenous inhabitants, as discussed throughout this paper.

<sup>99</sup> FPA, 16 U.S.C. §§ 791–825u (2018).

<sup>100</sup> See 2 WATERS AND WATER RIGHTS, *supra* note 96, § 40.02.

<sup>101</sup> See *id.*

<sup>102</sup> 16 U.S.C. §§ 799, 808(e). Such lengthy licensing terms allow developers time and security to attract investment capital. See H.R. Rep. No. 66-61, at 5 (1919) (statement of David F. Houston, Sec’y of Agriculture, stating that the House Bill was to provide “a method by which the water powers of the country, wherever located, can be developed by public or private agencies under conditions that will give the necessary security to the capital invested and at the same time protect and preserve every legitimate public interest”).

<sup>103</sup> See WATERS AND WATER RIGHTS, *supra* note 96, at § 40.02.

A cornerstone of the FPA was the consolidation of federal jurisdiction over hydroelectric development in a single commission of five commissioners appointed by the President, with the advice and consent of the Senate, for terms of five years.<sup>104</sup> Once known as the Federal Power Commission, today that commission is the Federal Energy Regulatory Commission (FERC).<sup>105</sup> The FPA requires FERC to ensure that nonfederal hydroelectric projects:

will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water-power development, for the adequate protection, mitigation, and enhancement of fish and wildlife (including spawning grounds and habitat), and for other beneficial public uses, including irrigation, flood control, water supply, and recreational . . . purposes.<sup>106</sup>

Although FERC maintains primary responsibility for administering the FPA, several of its provisions grant mandatory license conditioning authority to other federal agencies.<sup>107</sup> In addition, other federal environmental statutes, such as the Clean Water Act (CWA)<sup>108</sup> and Endangered Species Act (ESA),<sup>109</sup> provide a role for other federal and state agencies in the hydroelectric project licensing process. Under these statutes, various federal and state agencies may impose license conditions; FERC is required to either adopt these conditions, or reject the license altogether.<sup>110</sup> Because so many hydroelectric dams were constructed prior to the enactment of most significant and

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<sup>104</sup> 16 U.S.C. § 792.

<sup>105</sup> 2 WATERS AND WATER RIGHTS, *supra* note 96, at § 40.01; Department of Energy Organization Act of 1977, Pub. L. No. 95-91, §§ 301, 401–407, 91 Stat. 565, 578, 582–87 (1977) (codified at 42 U.S.C. §§ 7151, 7171–7177).

<sup>106</sup> 16 U.S.C. § 803.

<sup>107</sup> See Part V, *infra*.

<sup>108</sup> Federal Water Pollution Control Act, 33 U.S.C. §§ 1251–1387 (2018).

<sup>109</sup> Endangered Species Act of 1973, 16 U.S.C. §§ 1531–1544 (2018).

<sup>110</sup> *Escondido Mutual Water Company v. La Jolla Band of Mission Indians*, 466 U.S. 765, 778 (1984).

relevant environmental statutes other than the FPA,<sup>111</sup> the relicensing process is the focus of much attention and controversy before FERC.<sup>112</sup> Relicensing is the first opportunity in many years for Indian tribes, other state and federal agencies, and the public to have a say in licensing conditions— or whether the dam at issue should be relicensed at all.<sup>113</sup>

The late 1990s and early 2000s saw a jolt to a growing movement to decommission dams around the country that had begun in the 1980s.<sup>114</sup> This movement was spawned in part by an increasing understanding of the many ecological, social, and economic harms wrought by dams,<sup>115</sup> but perhaps more significantly, by the emergence of the FPA's conditioning authorities as a tool for ecological management.<sup>116</sup> Whatever benefits a dam may provide, or may have provided at one time in its lifespan, they come at high environmental costs, including

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<sup>111</sup> For example, there are twenty-one dams currently licensed under active FERC licenses issued before the enactment of the Endangered Species Act in 1973 or the Clean Water Act in 1972. Complete List of Active Licenses, FERC, <https://www.ferc.gov/licensing> (follow “Complete list of Active Licenses” hyperlink) (last visited Jan. 7, 2022; spreadsheet as of this writing on file with author). Note that this count does not include any dams that were initially licensed prior to 1973, but have since been relicensed. When a license expires, FERC has four options: “(1) relicense the project to the current licensee; (2) grant a license to another licensee; (3) grant a nonpower license; or (4) recommend federal takeover.” 2 Water and Water Rights § 40.09(a.01).

<sup>112</sup> See WATERS AND WATER RIGHTS, *supra* note 96, at § 40.09(a.01) (“Between 2000 and 2010, the original licenses of approximately 220 hydropower projects, representing almost one-third of the hydropower capacity licensed by FERC, expired. As a result of the need for these projects to obtain new licenses, the relicensing process has become the focus of a great deal of attention at FERC.”).

<sup>113</sup> Although the conditioning authority is limited to government agencies, the public has other opportunities to participate, such as the notice and comment process during the National Environmental Policy Act review. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4332(2)(C), 4332(2)(E) (2018).

<sup>114</sup> See David H. Becker, *The challenges of dam removal: the history and lessons of the Condit Dam and potential threats from the 2005 Federal Power Act amendments*, 36 ENV'T LAW 811, 812–13 (2006).

<sup>115</sup> See GEORGE C. COGGINS, ET AL., FEDERAL PUBLIC LAND AND RESOURCES LAW 646 (7th ed. 2014); see also Michael C. Blumm & Andrew B. Erickson, *Dam Removal in the Pacific Northwest: Lessons for the Nation*, 42 ENV'T L. 1043, 1045 (2012) (discussing the effect of dams on anadromous fish, leading to calls to remove dams to restore salmon populations).

<sup>116</sup> See Michael C. Blumm & Viki A. Nadol, *The Decline of the Hydropower Czar and the Rise of Agency Pluralism in Hydroelectric Licensing*, 26 COLUMBIA J. ENV'T L. 81, 83–84 (2001) (noting a series of court decisions beginning in the 1980s that “ma[d]e clear that federal land managers, federal fishery agencies, and state water quality agencies have important roles to play in relicensing hydroelectric projects, and that FERC must accept their license conditions even if it disagrees with the terms”).

blocking passage of anadromous fish when they return from the ocean to spawn in freshwater streams,<sup>117</sup> decreasing downstream water quality,<sup>118</sup> and reducing river flows,<sup>119</sup> high human health and safety costs,<sup>120</sup> economic costs, particularly to recreation and tourism industries,<sup>121</sup> and cultural costs for Indigenous peoples.<sup>122</sup>

In the 1980s, the courts began to recognize the FPA's delegations of authority to federal land managers and federal fishery agencies, enabling them to impose mandatory conditions on hydroelectric project licenses, which in turn made dam removal a viable way to respond to the harms that dams cause.<sup>123</sup> In the face of economically and administratively costly licensing conditions requiring licensees to retrofit older dams with fish ladders and other tools to encourage fish passage, some licensees were now incentivized to instead remove their dams.<sup>124</sup>

Between 2000 and 2010, approximately 220 hydropower projects came up for relicensing.<sup>125</sup> Inspired by the success of the removal of the Edwards Dam from

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<sup>117</sup> See Blumm & Erickson, *supra* note 115, at 1045.

<sup>118</sup> KLAMATH FACILITIES REMOVAL FEIS/EIR, *supra* note 65, at 1-3.

<sup>119</sup> *Id.* at 1-9.

<sup>120</sup> The 2007 FEIS prepared for the removal of the Klamath dams, for example, noted methylmercury concentrations in the tissue of fish caught the Iron Gate and Copco reservoirs above the U.S. EPA criterion for consumers of noncommercial freshwater fish. *Id.* at 3.2-35. Methylmercury is a neurotoxin with demonstrated adverse effects on “fetal growth, neurologic function, the cardio-vascular system, and immune function.” Margaret R. Karagas et al., *Evidence on the Human Health Effects of Low-Level Methylmercury Exposure*, 120 ENV'T HEALTH PERSPECTIVES 799 (2012). As the toxin bioaccumulates in fish tissue, it poses a particular risk to Indigenous people for whom fish is an important part of their diet and culture. See, e.g. Ryan S. D. Calder et al., *Future Impacts of Hydroelectric Power Development on Methylmercury Exposures of Canadian Indigenous Communities*, 50 Env't Sci. Technol. 13115 (2016) (discussing harms to “Canadian indigenous communities previously impacted by hydroelectric flooding” from methylmercury exposure).

<sup>121</sup> The removal of the Condit Dam on the White Salmon River, for example, made the area a destination spot for whitewater kayakers and boaters and recreational fishers. *Condit Dam*, AMERICAN RIVERS, <https://www.americanrivers.org/condit-dam/> (last visited Nov. 27, 2021).

<sup>122</sup> The damming of the Columbia River, for example, destroyed entire Native villages and traditional and historic treaty-guaranteed fishing rights. *The Impact of Dams: Celilo Falls Case Study*, SMITHSONIAN NATIONAL MUSEUM OF THE AMERICAN INDIAN, <https://americanindian.si.edu/nk360/pnw-history-culture-barriers/dams.html> (last visited Nov. 27, 2021).

<sup>123</sup> Blumm & Nadol, *supra* note 116, at 84; see also discussion *infra*, Part V.

<sup>124</sup> *Id.* at 84.

<sup>125</sup> 2 Waters and Water Rights, *supra* note 96, § 40.09.

Maine's Kennebec River in 1999, and recognizing the potential benefits of dam removal, advocates for removal began to focus on the FERC relicensing process and various regulatory handles that can be harnessed to achieve removal, such as the ESA and CWA.<sup>126</sup> But dam removal and habitat restoration is not simple. It can mobilize the massive volumes of sediment that have accumulated behind the dam over the decades.<sup>127</sup> These sediments can contain toxic substances such as heavy metals, PCBs, asbestos, and other harmful substances.<sup>128</sup> Structures that have been built in the river's natural floodplain, during the period where the dam disrupted the river's natural flow, may need to be modified, removed, or relocated to prepare for the dam's removal, and other features once flooded may again become exposed and require mitigation, such as forgotten waterfalls and smaller dams.<sup>129</sup> In many instances, however, the "dramatic ecological and associated economic benefits"<sup>130</sup> of dam removal significantly outweigh the costs.<sup>131</sup>

#### IV. THE ESA LISTINGS

Freshwater fish are the most imperiled vertebrate group in the United States, with 140 species currently listed under the ESA.<sup>132</sup> An additional 43 marine fish species, including

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<sup>126</sup> GEORGE C. COGGINS ET AL., FEDERAL PUBLIC LAND AND RESOURCES LAW 646 (Robert C. Clark et al., eds., 7th ed. 2014).

<sup>127</sup> *Id.* at 647.

<sup>128</sup> *Id.*

<sup>129</sup> *Id.*

<sup>130</sup> *Id.*

<sup>131</sup> See, e.g., David H. Becker, *The challenges of dam removal: the history and lessons of the Condit Dam and potential threats from the 2005 Federal Power Act amendments*, 36 ENV'T LAW 811, 812–13 (2006); see also Blumm & Erickson, *supra* note 115, at 1046 (discussing how FERC's policy statement concluding that the agency has authority to order removal of dams at the dam owner's expense recognized "that in some cases the balance of environmental and economic considerations tipped in favor of removing dams").

<sup>132</sup> *FWS-Listed U.S. Species by Taxonomic Group – Fishes*, U.S. FISH & WILDLIFE SERVICE, <https://ecos.fws.gov/ecp/report/species-listings-by-tax-group?statusCategory=Listed&groupName=Fishes> (last visited Nov. 28, 2021). For comparison, the next most imperiled vertebrate group is birds, with 106

anadromous fish that spend part of their life cycle in marine environments, are listed as well.<sup>133</sup> Both the lower basin's Southern Oregon/Northern California Coast population of coho salmon ("SONCC coho salmon")<sup>134</sup> and the upper basin's two species of suckers<sup>135</sup> are among these listed fish.

The U.S. Fish and Wildlife Service listed the Lost River and shortnose suckers as endangered species in 1988.<sup>136</sup> Although sufficiently plentiful to support a major sport fishery as recently as the 1960s and 1970s, by 1987 the Klamath Tribes and local state and federal biologists had become "so alarmed by the population decline of both suckers"<sup>137</sup> that the Oregon Fish and Wildlife Commission closed the fishery for both species and listed them as protected species.<sup>138</sup> According to the FWS, its listing decision to list the two sucker species as endangered was due to streamflow diversions, the draining of marshes, dredging of Upper Klamath Lake, and other forms of water manipulation<sup>139</sup>—all factors related to the transformation of the river to support agricultural and industrial development. The FWS listing decision also noted that "[d]ams have been particularly destructive" as they block spawning runs and facilitate hybridization between different types of suckers trapped below

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species listed. *FWS-Listed U.S. Species by Taxonomic Group – Birds*, U.S. FISH & WILDLIFE SERVICE, <https://ecos.fws.gov/ecp/report/species-listings-by-tax-group?statusCategory=Listed&groupName=Birds> (last visited Nov. 28, 2021).

<sup>133</sup> *ESA Threatened & Endangered*, NOAA FISHERIES, [https://www.fisheries.noaa.gov/species-directory/threatened-endangered?title=&species\\_category=1000000031&species\\_status=any&regions=all&items\\_per\\_page=25&page=2&sort=](https://www.fisheries.noaa.gov/species-directory/threatened-endangered?title=&species_category=1000000031&species_status=any&regions=all&items_per_page=25&page=2&sort=) (last visited Nov. 28, 2021).

<sup>134</sup> Threatened Status for Southern Oregon/Northern California Coast Evolutionarily Significant Unit (ESU) of Coho Salmon, 62 Fed. Reg. 24,588 (1997).

<sup>135</sup> Determination of Endangered Status for the Shortnose Sucker and Lost River Sucker, 53 Fed. Reg. 27,130 (1988).

<sup>136</sup> 53 Fed. Reg. at 27,132. An "endangered species" is one that "is in danger of extinction throughout all or a significant portion of its range." ESA, 16 U.S.C. § 1532(6) (2018).

<sup>137</sup> Proposal to Determine Endangered Status for the Shortnose Sucker and the Lost River Sucker, 52 Fed. Reg. 32,145, 32,146 (Aug. 26, 1987).

<sup>138</sup> 53 Fed. Reg. at 27,131.

<sup>139</sup> *Id.* at 27,130.

the dam.<sup>140</sup> The listing decision also observed that the reservoirs associated with damming “often lack long stretches of large inflowing rivers that are necessary for successful spawning.”<sup>141</sup> Of particular importance to the declines of the sucker fish was the construction of the Sprague River Dam at Chiloquin, Oregon, which “probably eliminated more than 95 percent of the historical spawning habitat” for the two species.<sup>142</sup> Although the Bureau of Reclamation had equipped the dam with fish ladders, they were not effective, as the suckers, while strong-swimmers, have limited leaping ability.<sup>143</sup> The sucker fish in Upper Klamath lake remain listed nearly two decades later.<sup>144</sup>

As is often the case when water rights for human populations conflict with protection of imperiled wildlife, the listing of the suckers was not without controversy. In September 2001, the director of a private property rights group petitioned FWS to delist the suckers.<sup>145</sup> FWS found the petitions failed to demonstrate that delisting was warranted.<sup>146</sup> But supporters of delisting were undeterred, and on June 12, 2002, six individuals, none of whom had filed the original petitions, sued FWS in federal court, alleging that FWS’s denial of the petitions was arbitrary and capricious.<sup>147</sup> The reviewing court sided with the plaintiffs, finding that FWS’s conclusion was not supported by the administrative record.<sup>148</sup> The Oregon district

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<sup>140</sup> *Id.*

<sup>141</sup> *Id.*

<sup>142</sup> *Id.* at 27,131.

<sup>143</sup> *Id.* at 27,132.

<sup>144</sup> See U.S. FISH & WILDLIFE SERV., *Shortnose Sucker* (*Chasmistes brevirostris*), <https://ecos.fws.gov/ecp/species/7160> (last visited March 16, 2022) (listing the shortnose sucker as presently endangered wherever found); U.S. FISH & WILDLIFE SERV., *Lost River Sucker* (*Deltistes luxatus*), <https://ecos.fws.gov/ecp/species/5604> (last visited March 16, 2022) (listing the Lost River sucker as presently endangered wherever found).

<sup>145</sup> Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition to Delist the Lost River Sucker (*Deltistes luxatus*) and the Shortnose Sucker (*Chasmistes brevirostris*), 74 Fed. Reg. 30,996, 30,997 (June 29, 2009). FWS also received three additional petitions they considered equivalent. *Id.*

<sup>146</sup> *Id.*

<sup>147</sup> *Moden v. U.S. Fish and Wildlife Serv.*, 281 F. Supp. 2d 1193 (D. Or. 2003).

<sup>148</sup> *Id.* at 1196.

court remanded the 90-day finding to FWS “to either reissue the finding with further explanation or proceed to a status review.”<sup>149</sup> FWS proceeded to make a new finding, clarifying its analysis and addressing additional comments made by the court and the petitioners,<sup>150</sup> but again concluding that delisting was not warranted.<sup>151</sup>

NMFS listed SONCC coho salmon as a threatened species in 1997.<sup>152</sup> The SONCC coho is one of six distinct population segments (DPS) of coho salmon.<sup>153</sup> The listing of the SONCC coho DPS was prompted by an unfortunate confluence of environmental factors, including drought, floods, and poor ocean conditions, the adverse effects of which were exacerbated by human-caused impacts such as “habitat degradation, harvest, water diversions, and artificial propagation.”<sup>154</sup> The listing decision explained that dams, water withdrawals, and unscreened diversions for irrigation were largely responsible for the decline of the SONCC coho salmon.<sup>155</sup>

Of particular relevance to the issue of the damming of the Klamath River, the listing decision observed that “[d]epletion and storage of natural flows have drastically altered

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<sup>149</sup> *Id.*

<sup>150</sup> Notice of Revised 90-Day Petition Finding and Initiation of a 5-Year Status Review of the Lost River Sucker and Shortnose Sucker, 69 Fed. Reg. 43,554, 43,555 (July 21, 2004).

<sup>151</sup> *Id.* at 43,558. The notice of the new 90-day finding also initiated 5-year status reviews for both species. *Id.* While the review for the shortnose sucker recommended that the species remain classified as endangered, *id.*, the review for the Lost River sucker recommended downlisting the species from endangered to threatened. U.S. FISH AND WILDLIFE SERVICE, LOST RIVER SUCKER (*DELTISTES LUXATUS*) 5-YEAR REVIEW SUMMARY AND EVALUATION 29 (2007). FWS based this determination on evidence that populations had managed to persist and stabilize following mortality events and because “significant habitat restoration efforts have been completed and are planned for the future.” *Id.* Nevertheless, today both species are listed as endangered: the petitions at issue had “sought only complete delisting,” so FWS considered only whether both species should be delisted and concluded that such an action was not warranted. 74 Fed. Reg. at 30,998. Although FWS announced its intent to propose a rule to down-list the Lost River sucker, the agency does not seem to have followed through. *Id.* at 30,999.

<sup>152</sup> 62 Fed. Reg. 24,588. “Threatened” in the context of the ESA “means any species which is likely to become an endangered species within the foreseeable future throughout all of a significant portion of its range.” ESA, 16 U.S.C. § 1532(20) (2018).

<sup>153</sup> *Id.*

<sup>154</sup> 62 Fed. Reg. at 24,592.

<sup>155</sup> *Id.*



natural hydrological cycles, especially in California and southern Oregon rivers and streams.”<sup>156</sup> The adverse effects of this flow alteration included migration delay, stranding of fish as a result of rapid flow fluctuations, the trapping of juveniles in diversion screens, and increased juvenile mortality from hotter water temperatures.<sup>157</sup> The listing decision also noted the sorry state of waterbodies in northern California and southern Oregon: at the time of listing, only 706 stream miles of the 6,086 stream miles (about 11%) assessed by the Oregon Department of Environmental Quality met all state water quality standards;<sup>158</sup> in California, eight waterbodies within the range of the SONCC coho DPS had been designated as impaired by the U.S. Environmental Protection Agency (EPA).<sup>159</sup>

Like the listing of the suckers, the listing of the SONCC coho salmon also brought controversy. In 2001, NMFS received a petition from Interactive Citizens United to delist coho salmon in Siskiyou County, California—fish that would be part of the SONCC coho salmon ESU.<sup>160</sup> NMFS received a duplicate petition from the California State Grange on March 18, 2002.<sup>161</sup> The agency rejected both petitions because the ESA “does not authorize the delisting of only a subset or portion of a listed species/subspecies/DPS,”<sup>162</sup> and the petitions failed to “present substantial scientific or commercial information to indicate that the petitioned action may be warranted.”<sup>163</sup> NFMS included the SONCC coho salmon ESU

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<sup>156</sup> *Id.* at 24,593.

<sup>157</sup> *Id.*

<sup>158</sup> *Id.*

<sup>159</sup> *Id.* Other factors contributing to the SONCC coho salmon’s status as a threatened species included overfishing in non-tribal fisheries, *id.*, inadequacy of existing regulatory mechanisms, *id.* at 24,596–98, and “long-term trends in rainfall and marine productivity,” *id.* at 24,598, including droughts and floods. *Id.* at 24,599.

<sup>160</sup> Endangered and Threatened Species: Findings on Petitions to Delist Pacific Salmonid ESUs, 67 Fed. Reg. 6,215, 6,216 (Feb. 11, 2001).

<sup>161</sup> 67 Fed. Reg. 40,679 (June 13, 2002).

<sup>162</sup> 62 Fed. Reg. at 24,599 (citing 50 C.F.R. § 424.11(d)).

<sup>163</sup> *Id.*

in a series of status reviews for fourteen ESUs of Pacific salmon and steelhead,<sup>164</sup> and found that the ESU's listing was warranted.<sup>165</sup>

## V. THE SALMON KILL OF 2002 AND ITS AFTERMATH

The listing of the coho salmon in the lower basin, paired with the listing of the two species of suckers in the upper basin, aggravated an already tense situation between hydroelectric dam operators, irrigators, and the needs of the listed fish and the wildlife agencies responsible for ensuring their survival.<sup>166</sup> With the listing of the coho, “[w]ater supplies for irrigators were now squeezed from both ends of the basin.”<sup>167</sup> the coho required minimum downstream flows, while the suckers required sufficient water retained in the upper

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<sup>164</sup> *Id.* at 6,218.

<sup>165</sup> Endangered and Threatened Species: Proposed Determinations for 27 ESUs of West Coast Salmonids, 69 Fed. Reg. 33,101, 33,165 (June 14, 2004); Endangered and Threatened Species: Final Listing Determinations for 16 ESUs of West Coast Salmon, and Final Protective Regulations for Threatened Salmonid ESUs, 70 Fed. Reg. 37,159, 37,193 (June 28, 2005). In 2011, NMFS received three more petitions, including two from the Siskiyou County Water Users Association (SCWUA), to delist the SONCC coho salmon. 90-Day Finding on Petitions to Delist Coho Salmon Under the Endangered Species Act, 76 Fed. Reg. 62,375 (Oct. 7, 2011). NMFS rejected all the petitions, deciding that they included no clear administrative recommendations, contained numerous inconsistencies and errors in the recommendations they attempted to make, lacked detailed narrative justifications for delisting, and failed “to provide substantial scientific or commercial information” that delisting may be warranted. *Id.* The petitioners renewed their request three more times, but NMFS rejected each petition. 90-Day Finding on Petitions to Delist the Southern Oregon/Northern California Coast Evolutionarily Significant Unit of Coho Salmon Under the Endangered Species Act, 77 Fed. Reg. 1,668, 1,669 (Jan. 11, 2012); 90-Day Finding on Petitions to Delist the Southern Oregon/Northern California Coast Evolutionarily Significant Unit of Coho Salmon Under the Endangered Species Act, 77 Fed. Reg. 55,458 (Sept. 10, 2012); 90-Day Finding on Petitions to Delist the Southern Oregon/Northern California Coast Evolutionarily Significant Unit of Coho Salmon Under the Endangered Species Act, 78 Fed. Reg. 46,322, 46,323 (July 31, 2013).

<sup>166</sup> In 1997, for example, just prior to the coho listing, Pacificorp sued BOR for its 1997 operating plan that limited September flows through the Link River Dam, claiming the plan would violate the minimum flow requirements of its FERC license. *See* DOREMUS & TARLOCK, *supra* note 2, at 109. After BOR and Pacificorp renegotiated the terms of the contract for the operation of the dam, contingent on FERC's approval, a group of irrigators filed suit to enforce the original contract. *Id.* Their claims were rejected by the Ninth Circuit, which held that BOR had the authority to operate the dam to comply with the ESA, notwithstanding the earlier contract or the irrigators' water rights. *Klamath Water Users Assoc. v. Patterson*, 204 F.3d 1206, 1213 (9th Cir. 1999).

<sup>167</sup> *Klamath Water Users Ass'n*, 204 F.3d at 1213.

basin.<sup>168</sup> The struggle between NFMS, on behalf of the coho, and FWS, on behalf of the suckers, to maintain this balance left little water for irrigators.<sup>169</sup>

The situation worsened when a dry winter in 2000–2001 led to drought conditions that spring.<sup>170</sup> In April 2001, FWS and NMFS each issued biological opinions (2001 BiOps) concluding that the Bureau of Reclamation’s proposal to continue operating its irrigation projects on the Klamath, despite low water levels and myriad water quality issues, would jeopardize the continued existence of both the suckers and the coho.<sup>171</sup> As a result, on April 6, 2001, Reclamation announced it would not release water to farms which normally would receive water from Upper Klamath Lake—an announcement that would have affected an estimated 200,000 acres of farm and pasture lands.<sup>172</sup> The farmers and ranchers of the Klamath Basin were, unsurprisingly, outraged, and began a loud resistance, promising to open irrigation dam headgates by force, and threatening public officials.<sup>173</sup>

In late July, the Bush Administration, responding to the national attention now directed at the Klamath basin and the protests of the farmers, ordered only a small amount of additional water released from Upper Klamath Lake.<sup>174</sup> All seemed relatively well, and so in

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<sup>168</sup> *Id.*

<sup>169</sup> *Id.*

<sup>170</sup> *Id.*

<sup>171</sup> See DOREMUS & TARLOCK, *supra* note 2, at 120; see also CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 37.

<sup>172</sup> See CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 37.

<sup>173</sup> *Id.*

<sup>174</sup> *Id.* See also Kenneth A. Rykbost & Rodney Todd, *The Klamath Reclamation Project*, in WATER ALLOCATION IN THE KLAMATH RECLAMATION PROJECT, 2001: AN ASSESSMENT OF NATURAL RESOURCE, ECONOMIC, SOCIAL, AND INSTITUTIONAL ISSUES WITH A FOCUS ON THE UPPER KLAMATH BASIN 13 (eds. William S. Braunworth, Jr. et al. December 2002).

the spring of 2002 the Bush Administration saw no problem in disregarding the caution urged in the 2001 BiOps, and irrigation waters were released with little reservation for fish.<sup>175</sup>

The consequences for salmon were nothing short of disastrous: in September 2002 a massive fish kill ensued, and more than 34,000 salmon<sup>176</sup> wound up dead in the lower Klamath River from a disease outbreak “triggered by crowding of the fish into the low, warm waters of the mouth of the river.”<sup>177</sup> Nearly all of the fish were adult anadromous salmonids, primarily fall-run chinook salmon (97.1%), steelhead (1.8%), and coho salmon (1%).<sup>178</sup> The kill was a shocking scene: as one fisheries biologist with the Yurok Tribe described it, “[e]very few feet there’s a dead salmon, for as long as you can see.”<sup>179</sup> Another witness remarked: “There’s no memory of a loss of adult salmon of this magnitude before.”<sup>180</sup> A biologist for the Yurok Tribe helping to count the dead fish said he felt “like the Red Cross going through a battle zone.”<sup>181</sup> The impacts of this ecological and social nightmare would reverberate throughout the Klamath basin for decades to come.

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<sup>175</sup> See CRS KLAMATH RIVER BASIN REPORT, *supra* note 1, at 38–39; DOREMUS & TARLOCK, *supra* note 2, at 138–40. The release of irrigation waters at the expense of the fish was met with resistance: at a ceremony in Klamath Falls celebrating the release, members of the Klamath Tribes held up signs reading “Bush Kills Fish.” Michael Milstein & Jim Barnett, *Salmon Die-Off Fears Become Harsh Reality*, THE OREGONIAN A01 (Sept. 29, 2002).

<sup>176</sup> U.S. FISH AND WILDLIFE SERVICE, KLAMATH RIVER FISH DIE-OFF: REPORT ON ESTIMATE OF MORTALITY ii (Sept. 2002) [https://www.fws.gov/arcata/fisheries/reports/technical/Klamath\\_River\\_Dieoff\\_Mortality\\_Report\\_AFWO\\_01\\_03.pdf](https://www.fws.gov/arcata/fisheries/reports/technical/Klamath_River_Dieoff_Mortality_Report_AFWO_01_03.pdf). The report notes that this is a “conservative assessment.” *Id.* at 13.

<sup>177</sup> See DOREMUS & TARLOCK, *supra* note 2, at 139. See also Steve Hyman, *Salmon Die-Off Reignites Feud Over Klamath River Water*, L.A. TIMES 6 (Sept. 25, 2002) (noting that, at the time of writing, wildlife officials suspected the fish died of “gill rot,” the causes of which can include “high water temperatures and too many fish crowded together, both conditions caused by low flows”).

<sup>178</sup> U.S. FISH AND WILDLIFE SERVICE, *supra* note 176, at ii.

<sup>179</sup> Hyman, *supra* note 177 (quoting David Hillemeier, a fisheries biologist with the Yurok Tribe).

<sup>180</sup> Michael Milstein, *Salmon Die-Off Tied to Flaws in Klamath Policy*, THE OREGONIAN (Sept. 24, 2002) (quoting Paul Wertz of the Cal. Dep’t of Fish and Game).

<sup>181</sup> Michelle Cole, *Spirit for Fishing Dies with Salmon*, THE OREGONIAN (Sept. 28, 2002) (quoting Greg Bates, biologist for the Yurok Tribe).

The devastation was particularly acute for the basin's tribes, due to their deep ties to the salmon and the Klamath River. Fred Simms, a member of the Yurok Tribe, described having a "bad, bad feeling" that he had "done something wrong," because he could have done something more.<sup>182</sup> Sue Masten, then-chairwoman of the Yurok Tribe, remarked on the federal government's broken promises to the tribes: "The government promised to protect the resources we depend on for our very survival, and that's not something that should be taken lightly."<sup>183</sup>

The controversy over water allotments and the ensuing salmon die-off dominated news cycles, with irrigators and their political allies maintaining that the cause was disease, not a water shortage.<sup>184</sup> Gruesome images of the bloated bodies of thousands of dead fish shocked and disturbed a general public that had likely given little thought to the Klamath, its salmon, or its embattled variety of water users prior to the devastation of September 2002.

The decision to release the water for irrigation, and the ensuing fish kill, encapsulated clashes between sound science and the power of irrigated agriculture that have long characterized the water conflicts of the Klamath basin, and continue to do so today. A 2002 report by the National Research Council (NRC) framed the backbone of the controversy. The Departments of the Interior and Commerce commissioned the report, tasking the NRC with reviewing the science supporting FWS and NMFS' 2001 BiOps.<sup>185</sup> The NRC's preliminary report, released in February 2002, just months before the die-off, cited "strong scientific support" for most of FWS's BiOp,<sup>186</sup> although it found no scientific support for the BiOp's

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<sup>182</sup> Michelle Cole, *With Deep Ties to Fish, Tribes Mourn Die-Off*, THE OREGONIAN, at A17 (Oct. 6, 2002).

<sup>183</sup> *Id.*

<sup>184</sup> See, e.g. Jack Roberts, *Letter to the Editor: Let science settle the matter*, THE OREGONIAN F03 (Oct. 6, 2002)

<sup>185</sup> DOREMUS & TARLOCK, *supra* note 2, at 121.

<sup>186</sup> *Id.* at 123.

call for minimum levels in Upper Klamath Lake to benefit the suckers.<sup>187</sup> The report drew similar conclusions regarding NMFS's coho salmon BiOp, finding no "clear scientific or technical support for increased minimum flows in the Klamath River main stem."<sup>188</sup> Irrigators and their supporters, including those then in the federal government, claimed that the report vindicated their position that the fish flows were unnecessary, ignoring the fact that the report was equally critical of the Bureau's proposal to decrease lake levels and river flows.<sup>189</sup>

The report and the reaction to it among government policymakers was particularly enraging to the fisheries biologists who had spent substantial portions of their careers working to perfect the balance between the needs of the fish and the local community.<sup>190</sup> Many of these area biologists felt the report's findings "pretty much r[a]n counter to [those of] all the people who work in the region"<sup>191</sup> and were "rushed, simplistic, and unhelpful to public understanding."<sup>192</sup> Instead of defusing tensions in the basin by providing a conclusion to a decades-long conflict, the report "only made matters worse, ratcheting up an already hostile environment"<sup>193</sup> for government scientists in the area and came to be referred to as "combat biology."<sup>194</sup> Although written by academics appointed by the federal government,<sup>195</sup> the report perpetuated an anti-science and anti-federal government sentiment that would continue to

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<sup>187</sup> *Id.*

<sup>188</sup> *Id.*

<sup>189</sup> *Id.*

<sup>190</sup> *Id.* at 128.

<sup>191</sup> Robert F. Service, 'Combat Biology' on the Klamath, 300 *SCIENCE* 36 (2003) (quoting Mike Rode, a fisheries biologist at the Cal. Dep't of Fish and Game).

<sup>192</sup> DOREMUS & TARLOCK, *supra* note 2, at 129.

<sup>193</sup> Service, *supra* note 191, at 36.

<sup>194</sup> *Id.* (quoting Ron Larson, a fisheries biologist with FWS in Klamath Falls, Oregon).

<sup>195</sup> *See* DOREMUS & TARLOCK, *supra* note 2, at 121.

characterize the views of some of the participants in the ongoing conflict over Klamath basin water and still does.<sup>196</sup>

Another problem with the NRC report was that it focused only on the threatened coho salmon—not the chinook salmon that arrive sooner, making them the primary victims of the fish kill.<sup>197</sup> This feature does not make the report itself erroneous: the NRC's task was to consider the ESA obligations of the federal government and the extent to which the cutoff of irrigation water was necessary to serve the needs of the three listed fish species.<sup>198</sup> But it does illustrate a problem with how the government report communicated to the public, especially by those inclined to support the irrigators over the fish, the ecosystem of which they are a part, and the Tribes. The report was touted by the Bush administration as proof that the irrigation water cutoff was unjustified, but the administration failed to connect that cause to the effect: the die-off of tens of thousands of chinook salmon. Although the later arrival of the federally listed coho meant they were spared in this die-off, the event could be seen as a sort of canary in the coal mine: release too much water for irrigation, and the result will be numerous dead fish. Tasked with studying only the species entitled to ESA protections, the NRC did as it was told, but the government's failure to at least acknowledge the harms to the

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<sup>196</sup> In summer 2021, for example, amid a mega-drought in the basin, supporters of the right-wing anti-government activist Ammon Bundy set up protest camps near the headgates of the Klamath Project's main canal, threatening to illegally force them open in yet another summer of restrictions on irrigation water. Jason Wilson, *Amid mega-drought, rightwing militia stokes water rebellion in US west*, THE GUARDIAN (June 8, 2021), <https://www.theguardian.com/us-news/2021/jun/08/klamath-falls-oregon-protests-ammon-bundy>.

<sup>197</sup> Michael Milstein & Jim Barnett, *Salmon Die-Off Fears Become Harsh Reality*, THE OREGONIAN (Sept. 29, 2002)

<sup>198</sup> See NATIONAL RESEARCH COUNCIL, ENDANGERED AND THREATENED FISHES IN THE KLAMATH RIVER BASIN: CAUSES OF DECLINE AND STRATEGIES FOR RECOVERY xv (2004) (explaining the premise of the report).

commercially valuable chinook undermined the science in favor of policy goals such as appeasing irrigators by increasing irrigation acres.<sup>199</sup>

The 2001 curtailment was the subject of longstanding court challenges, including a takings claim, finally rejected by the Federal Circuit in *Baley v. United States* in 2017.<sup>200</sup> The *Baley* saga began in 2001, during ongoing protests over the curtailment of irrigation water, when one group of irrigators sued the BOR, claiming that shutting off water deliveries from the Klamath Project constituted a taking of their property under the Fifth Amendment of the Constitution.<sup>201</sup> The Court of Federal Claims decided that the BOR's 2001 decision not to provide water to the irrigators was indeed "a physical taking akin to the government's seizure of private property"<sup>202</sup>—and a permanent one.<sup>203</sup> But the court concluded that the irrigators' claimed rights were pre-empted by the senior water rights of the Klamath, Yurok, and Hoopa Valley Tribes.<sup>204</sup>

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<sup>199</sup> Milstein & Barnett, *supra* note 197. Commentators have noted parallels between the Bush administration's refusal to acknowledge the role of the release of irrigation water in the die-off and other issues where science conflicted with the agency's preferred policy, including the rejection of the Kyoto protocol and drilling for oil in the Arctic National Wildlife Refuge. Timothy Egan, *As Thousands of Salmon Die, Fight for River Erupts Again*, N.Y. Times (Sept. 28, 2002) <https://www.nytimes.com/2002/09/28/us/as-thousands-of-salmon-die-fight-for-river-erupts-again.html>. A spokesman for Republicans for Environmental Protection noted "a pattern here that if the science is consistent with the political agenda, then it's sound science. If it's not consistent with the political agenda, they need more information." *Id.* Members of the public expressed similar sentiments in the editorial sections of area newspapers, including one commentator who noted that the Bush administration's response was "the same distortion of scientific certainty President Bush uses to ignore global warming . . . Such lies reveal an administration that serves only friends and ideology and unscrupulously manipulates science to its own ends." Stephen Bachhuber, *Letter to the Editor: Floating fish are proof enough*, THE OREGONIAN F03 (Oct. 6, 2002).

<sup>200</sup> *Baley v. United States*, 134 Fed. Cl. 619, 668 (2017).

<sup>201</sup> *Id.*; see also Monte Mills, *Beyond Constitutional Frontiers: Tribal Rights, Resources, and Reform*, 2019 ABA SEER ANNUAL CONFERENCE 8 (Sept. 13, 2019).

<sup>202</sup> *Id.* at 9.

<sup>203</sup> *Baley*, 134 Fed. Cl. at 668; see also *Cedar Point Nursery v. Hassid*, 141 S. Ct. 2063, 2072 (2021) (concluding that a California statute granting labor organizations a right of access to an agricultural employers' property for unionization to be a permanent physical *per se* taking).

<sup>204</sup> *Baley*, 134 Fed. Cl. at 679–80.



In their 1864 treaty with the United States, the Klamath Tribes reserved the “exclusive right of taking fish in the streams and lakes that were included as part of the Klamath Indian Reservation.”<sup>205</sup> A federal court water rights adjudication later determined that under this treaty language recognized that the Klamath Tribes hold “a water right to support game and fish adequate to the needs of Indian hunters and fishers,” with a priority date of time immemorial.<sup>206</sup> The Yurok and Hoopa Valley Tribes’ similar rights dated, at the latest, to 1891: the year of the last presidential Executive Order in the series that “established, extended, and combined the Klamath and Hoopa Valley Reservations in California.”<sup>207</sup> The irrigators’ rights, on the other hand, dated to only 1905: the earliest possible date by which appropriations were made for the Klamath Project.<sup>208</sup> Therefore, under the doctrine of prior appropriation,<sup>209</sup> the Tribes’ reserved rights are senior to the water rights held by the irrigators, who have “no entitlement to receive any water until the Tribes senior rights [are] fully satisfied”<sup>210</sup>—meaning until sufficient water had been reserved to support suitable habitat for the SONCC coho salmon in the river as well as for the *Koptu*, and the *C’waam* in the lake.<sup>211</sup>

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<sup>205</sup> *Id.* at 633.

<sup>206</sup> *Id.* (quoting *United States v. Adair*, 723 F.2d 1394, 1411 (9th Cir. 1983)). Unlike the Stevens Treaty rights of the tribes in the Columbia basin and Puget Sound basin, the fishing rights of the Klamath Tribes don’t include off-reservation rights, and due to termination in the 1960s, the Tribes no longer have a reservation. *See DOREMUS & TARLOCK*, *supra* note 2, at 64–65 (discussing the termination of the Klamath Tribes).

<sup>207</sup> *Id.*

<sup>208</sup> *Mills*, *supra* note 201, at 9.

<sup>209</sup> Prior appropriation water law gives priority to first-in-time (senior) rights putting water to “beneficial use” over later (junior) rights. There is no sharing of water shortages. *See id.* at 4.

<sup>210</sup> *Baley*, 134 Fed. Cl. at 679.

<sup>211</sup> *Id.* at 680 (using the English words for the *Koptu* and *C’waam*: the Lost River and shortnose suckers). *See id.* at 679-80:

The court, therefore, holds that, because the Tribes held water rights to Klamath Project water that were senior to those held by all remaining plaintiff class members, and because the Tribes water rights were at least co-extensive to the amount of water that was required by defendant to satisfy its obligations under the Endangered Species Act concerning the Lost River and shortnose suckers and the coho salmon in 2001, plaintiffs had no entitlement to receive any water before the government had satisfied what it determined to be its obligations under the Endangered Species Act and its Tribal Trust responsibilities.

The Federal Circuit affirmed the decision in 2019, rejecting the irrigators' argument on appeal that the tribes' reserved water rights did not extend to Upper Klamath Lake, and thus Klamath Project Water.<sup>212</sup> The court reasoned that since the Klamath Tribes hold "an implied right to water to the extent necessary to accomplish hunting, fishing, and gathering on the former reservation," they have "the right to prevent appropriators from utilizing water in a way that depletes adjoined water sources below a level that damages the habitat of the fish they have a right to take."<sup>213</sup> Creating some interesting precedent concerning reserved rights' remedies, the court expressly ruled that the fact that Upper Klamath Lake was over 200 miles from the Hoopa Valley and Yurok Tribes' reservations does not mean those tribes' lacked water rights in the lake.<sup>214</sup> According to the Federal Circuit, since these tribes have reserved rights to take fish from the Klamath River within their reservations,<sup>215</sup> they also possess an "implied water right that includes the Klamath River and the flows therein as controlled by the Iron Gate Dam," as the river and its flows provide the salmon with their habitat.<sup>216</sup> Consequently, the court affirmed the lower court and ruled that because the irrigators' water rights were subordinate to the Tribes' senior rights, the irrigators' had no compensable right for the 2001 government restrictions on irrigation water deliveries that benefited the Tribes' fishing rights.<sup>217</sup>

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<sup>212</sup> *Baley v. United States*, 942 F.3d 1312, 1337 (Fed. Cir. 2019).

<sup>213</sup> *Id.*

<sup>214</sup> *Id.* at 1338–39.

<sup>215</sup> *Baley*, 134 Fed. Cl. at 634.

<sup>216</sup> *Baley*, 942 F.3d at 1339.

<sup>217</sup> *Id.* at 1341. On the other side of the water rights debate, following the die-off, the Yurok Tribe sued BOR to compel the agency to operate the Klamath Project in a manner consistent with the Tribe's fishing rights. Order, *Pacific Coast Federation of Fishermen's Ass'ns v. U.S. Bureau of Reclamation*, Civ. No. C 02-02006 SBA, March 8, 2005, <http://www.klamathbasin-crisis.org/pdf-files/pcffayurokOrder%20030905.pdf>. The District Court for the Northern District of California dismissed the claim for mootness, ruling that the Tribe had failed to show another fish kill was likely, and because the Tribe could not bring a generalized challenge to the

## VI. THE FEDERAL POWER ACT AND SECTION 401 OF THE CLEAN WATER ACT AS SALMON PROTECTORS

As discussed in Part II above, the FPA authorized FERC to license nonfederal hydroelectric projects on navigable waters of the U.S.<sup>218</sup> FERC's licensing authority is subject to sections 4(e) and 18 of the FPA, which give federal land managers and fishery agencies, respectively, authority to impose mandatory conditions on the licenses.<sup>219</sup> As a result, the FPA, together with state certification authority under section 401 of the Clean Water Act (CWA), can be a powerful tool for protecting salmon and its habitat.

### A. *Section 4(e): Conditioning Authority of Federal Land Management Agencies*

Section 4(e) of the FPA authorizes FERC to issue licenses for hydroelectric projects located on public lands and reservations.<sup>220</sup> But to license such a project, FERC must: (1) find that the project “will not interfere or be inconsistent with the purpose for which such reservation was created or acquired”; and (2) include in the license any conditions “deem[ed] necessary for the adequate protection and utilization of such reservation” by the Secretary of the department administering the reservation.<sup>221</sup>

Both the D.C. Circuit and Ninth Circuit have held that FERC must independently evaluate a reservation's purpose,<sup>222</sup> focusing on the “statutorily prescribed purposes”<sup>223</sup> of the reservation rather than deference to the reservation's administering agency's interpretation of

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Klamath Project's operations. *See* DOREMUS & TARLOCK, *supra* note 2, at 76. Although the order acknowledged the federal government's trust responsibilities to the Tribe and its fishing rights, the court was apparently reluctant to dictate BOR's operations. *Id.*

<sup>218</sup> FPA, 16 U.S.C. § 797(e) (2018).

<sup>219</sup> *Id.* §§ 797(e), 811.

<sup>220</sup> *Id.* § 797(e).

<sup>221</sup> *Id.*

<sup>222</sup> *Keating v. Federal Energy Regulatory Comm'n*, 114 F.3d 1265, 1269 (D.C. Cir. 1997); *Rainsong Co. v. Federal Energy Regulatory Comm'n*, 106 F.3d 269, 275 (9th Cir. 1997).

<sup>223</sup> *Rainsong*, 106 F.3d at 275.

consistency between the project and the reservation's purpose.<sup>224</sup> But once the Secretary of the relevant land management department concludes that a condition is necessary to protect the reservation, the Supreme Court ruled in *Escondido Mutual Water Company v. La Jolla Band of Mission Indians* that "the Commission is required to adopt [the condition] as its own."<sup>225</sup> The Court observed that section 4(e) uses mandatory language to describe the administering Secretary's conditioning authority: the license "shall be subject to and contain such conditions . . . ."<sup>226</sup> The provision therefore "requires [FERC] to accept without modification any license conditions recommended by the Secretary."<sup>227</sup> FERC may challenge the condition before a United States court of appeals,<sup>228</sup> but courts are "obligated to sustain [the conditions] if they are reasonably related to that goal, otherwise consistent with the FPA, and supported by substantial evidence."<sup>229</sup> In short, § 4(e) gives land management agencies broad authority to condition FERC-licensed projects, including at relicensing.

*B. Section 18: Conditioning Authority of Federal Fisheries Agencies*

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<sup>224</sup> *Keating*, 114 F.3d at 1268.

<sup>225</sup> 466 U.S. 765 (1984).

<sup>226</sup> FPA, 16 U.S.C. § 797(e) (2018) (emphasis added).

<sup>227</sup> *Escondido*, 466 U.S. at 771.

<sup>228</sup> 16 U.S.C. § 825(b).

<sup>229</sup> *Escondido*, 466 U.S. at 778. The § 4(e) authority of the land management agencies is, however, only applicable when a project is located within the boundaries of a reservation. *Id.* at 781. In *Escondido*, for example, while the Court required FERC to incorporate conditions dictated by the Secretary of the Interior to protect the purposes of several Indian Reservations through which the proposed project passed, *id.* at 779, FERC was not obligated to include conditions the Secretary intended for the protection of the water usage of three reservations on which no actual project facilities would be located. *Id.* at 780–81. The Court reasoned that § 4(e) gives the Secretary conditioning authority over a project licensed "within" any reservation; it "imposes no obligation on [FERC] or power on the Secretary with respect to reservations that may somehow be affected by, but will contain no part of, the licensed project works." *Id.* The D.C. Circuit has, however, interpreted *Escondido* to mean that so long as some part of the licensed project is within the reservation, even if it is but a small part, that is sufficient to trigger § 4(e) conditioning authority for the project as a whole. *City of Tacoma v. Federal Energy Regulatory Comm'n*, 460 F.3d 53, 66, 67 (D.C. Cir. 2006).

The purpose of section 18 of the FPA is “to provide for ‘safe and timely fish passage’ as well as other ‘fish and wildlife benefits both downstream and upstream of a project.’”<sup>230</sup> This provision gives the federal fishery agencies—U.S. Fish and Wildlife Service (FWS) (for freshwater and anadromous species) and National Marine Fisheries Service (NMFS) (for marine species)—mandatory conditioning authority to prescribe “fishways.”<sup>231</sup>

The FPA does not define “fishways.” In 1991, FERC issued a regulatory definition of “fishways,”<sup>232</sup> but it was vacated by Congress in the 1992 Energy Policy Act (EPAct).<sup>233</sup> The EPAct provided FERC with guidance on issuing a new definition, including that any new definition should include both upstream and downstream passage, but it did not require FERC to take such action, and the agency has never done so.<sup>234</sup> The Department of Interior (which houses FWS) and Department of Commerce (which houses NMFS) did issue a proposed policy regarding section 18 fishway prescriptions in 2000, but the agencies never adoption a final policy.<sup>235</sup>

Despite the lack of a clear formal definition, the Ninth Circuit in *American Rivers v. FERC* applied *Escondido* to section 18 fishway prescriptions, holding that FERC “may not modify, reject, or reclassify any prescriptions submitted by the Secretaries under color of

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<sup>230</sup> Wis. Power & Light Co. v. FERC, 363 F.3d 453, 461 (D.C. Cir. 2004) (quoting Pub. L. No. 102-486, § 1701(b), 106 Stat. 2776, 3008 (1992); H.R. Conf. Rep. No. 99-934, at 23 (1986)).

<sup>231</sup> 16 U.S.C. § 811.

<sup>232</sup> Regulations Governing Submittal of Proposed Hydropower License Conditions and Other Matters, 56 Fed. Reg. 23,108, 23,109 (May 20, 1991).

<sup>233</sup> Pub. L. No. 102-486, § 1701(b), 106 Stat. 2776, 3008. FERC’s regulatory definition of fishway included only structures used for the upstream passage of fish around or through a hydropower project. 56 Fed. Reg. at 23,109. When Congress vacated this definition, it clarified that any future definition of “fishway” must include structures to foster both upstream and downstream passage of fish. 16 U.S.C. § 811 note.

<sup>234</sup> *Id.*

<sup>235</sup> Notice of Proposed Interagency Policy on the Prescription of Fishways Under Section 18 of the Federal Power Act, 65 Fed. Reg. 80,898 (Dec. 22, 2000).

section 18.”<sup>236</sup> As did the Supreme Court in *Escondido*, the Ninth Circuit relied on the mandatory language in section 18: FERC “shall require the construction, maintenance, and operation by a licensee at its own expense of . . . such fishways as may be prescribed by the Secretary of the Interior of the Secretary of Commerce, as appropriate.”<sup>237</sup> Further, the court noted that in the EPAct, “Congress explicitly considered and rejected amendments to section 18 that would have limited the Department of the Interior’s authority to prescribe fishways.”<sup>238</sup> If FERC disagrees with the scope of a fishway prescription, its only options are to “withhold a license altogether or voice its concerns in the court of appeals.”<sup>239</sup>

*C. CWA Section 401: State Certification*

Section 401 of the CWA requires applicants for federal licenses or permits for activities that might result in a discharge into navigable waters to provide the federal licensing agency with a certification from the state in which the discharge originates that it will comply with various state water quality standards, effluent limitations, technological standards, and toxic pretreatment requirements.<sup>240</sup> This provision clearly applies to federally licensed hydroelectric facilities<sup>241</sup> and requires not only that the licensed activity be consistent with CWA, but also with “any other appropriate requirements of State [and Tribal] law.”<sup>242</sup> And once “the

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<sup>236</sup> 187 F.3d 1007, 1030 (9th Cir. 1999).

<sup>237</sup> *Id.* at 1206 (quoting 16 U.S.C. § 811).

<sup>238</sup> *Id.* at 1208.

<sup>239</sup> *Id.* at 1210.

<sup>240</sup> CWA, 33 U.S.C. § 1341(a)(1) (2018).

<sup>241</sup> *See* *S.D. Warren Co. v. Me. Bd. of Env’t Prot.*, 47 U.S. 370, 384–87 (2006); *see also* *PUD No. 1 of Jefferson Cty. v. Wash. Dep’t of Ecology*, 511 U.S. 700, 709 (noting that the hydroelectric project at issue “may result in discharges into the Dosewallips River,” and petitioners were therefore “required to obtain state certification of the project pursuant to § 401 of the Clean Water Act”).

<sup>242</sup> 33 U.S.C. § 1341(d).

threshold condition, the existence of a discharge, is satisfied,” section 401(d) authorizes “conditions and limitations on the activity as a whole,” not just the discharge itself.<sup>243</sup>

*D. The Effect of Sections 4(e), 18, and 401 on the Relicensing of the Klamath Dams*

With the expiration of its original FERC license to operate the Klamath Hydroelectric Project looming in 2006, PacifiCorp applied for relicensing in 2004.<sup>244</sup> FERC issued a notice of the availability of the license application and, in response, FWS and NMFS filed joint preliminary mandatory fishway prescriptions under section 18 of the FPA. The agencies stated that these prescriptions would provide “safe, timely, and effective upstream and downstream fish passage facilities” for aquatic species, including the Lost River and shortnose suckers, SONCC coho salmon, resident trout, chinook salmon, steelhead, and Pacific lamprey.<sup>245</sup> An analysis commissioned by the California Energy Commission estimated that the cost of implementing these preliminary prescriptions could reach \$300 million.<sup>246</sup> Dam removal, in contrast, was forecast to cost approximately \$100 million.<sup>247</sup>

BLM and BOR both filed preliminary mandatory conditions under § 4(e).<sup>248</sup> BLM administers lands adjacent to the J.C. Doyle developments under either the Revested Oregon

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<sup>243</sup> *PUD No. 1 of Jefferson Cty.*, 511 U.S. at 712.

<sup>244</sup> CONGRESSIONAL RESEARCH SERVICE, *KLAMATH BASIN SETTLEMENT AGREEMENTS 3* (2014) [hereinafter *CRS KBSA REPORT*].

<sup>245</sup> U.S. DEP’T OF THE INTERIOR, *KLAMATH HYDROELECTRIC PROJECT, NO. 2082. DEPARTMENT OF THE INTERIOR’S FILING OF COMMENTS, PRELIMINARY TERMS, CONDITIONS, PRESCRIPTIONS, AND RECOMMENDATIONS C-1, C-13 to C-19* (2006), <https://www.fws.gov/yreka/P2082/20060327/DOIFilingP2082.pdf>.

<sup>246</sup> M. Cubed & U.S. Bureau of Reclamation Technical Services Center, *Economic Modeling of Relicensing and Decommissioning Options for the Klamath Basin Hydroelectric Project 35* (2006), <http://s3-us-west-2.amazonaws.com/ucldc-nuxeo-ref-media/86f61dab-68da-456d-acdd-7c9f65e29c82>; see also CONGRESSIONAL RESEARCH SERVICE, *ISSUES IN KLAMATH RIVER DAM RELICENSING 3* (2008) [hereinafter *CRS RELICENSING REPORT*].

<sup>247</sup> *Id.*

<sup>248</sup> U.S. DEP’T OF THE INTERIOR, *supra* note 245, at A-1, B-1.

and California Railroad Lands Act, which called for these lands to be “conserved and perpetuated” and managed as timberlands and power site lands, or Power Site Reserve No. 258, which withdrew land from “settlement, location, sale, or entry” and reserved it for use as a “water-power site.”<sup>249</sup>

After evaluating the federal land managers’ section 4(e) and 18 prescriptions and conditions, plus FERC’s recommended conditions for relicensing, PacifiCorp determined their implementation “would cause the project to operate at an annual net loss.”<sup>250</sup> Soon thereafter, PacifiCorp began settlement discussions “to resolve issues related to relicensing of the [KHP].”<sup>251</sup> These discussions ultimately led to the Klamath Hydroelectric Settlement Agreement (KHSA), signed on February 18, 2010 by more than 40 stakeholders, including federal agencies, the states of California and Oregon, Native American tribes, counties, irrigators, conservation groups, and fishing groups.<sup>252</sup> In 2016, the parties amended the KHSA to provide for the transfer and decommissioning of the four hydroelectric dams through FPA procedures.<sup>253</sup> PacifiCorp was motivated to consider dam removal as a potential solution for its Klamath hydroelectric developments and to enter into the KHSA because the KHSA would better protect PacifiCorp and its customers from risk and cost volatility as compared to pursuing relicensing.<sup>254</sup>

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<sup>249</sup> *Id.* at A-1. BOR administers lands within the KHP boundaries reserved for the purposes of the Klamath Reclamation Project. *Id.* at B-1.

<sup>250</sup> *Order Amending License and Deferring Consideration of Transfer Application*, 162 FERC ¶ 61,236 at P. 7 (March 15, 2018).

<sup>251</sup> PacifiCorp, *Klamath River*, <https://www.pacificorp.com/energy/hydro/klamath-river.html> (last visited Dec. 30, 2021).

<sup>252</sup> *Id.*

<sup>253</sup> *Id.*

<sup>254</sup> *Id.*



The KHSA and the removal of the four KHP dams offer hope for the Klamath’s fish, particularly its federally listed salmon and suckers. Without the conditioning provisions of the FPA and the CWA, it is highly unlikely that the utility would have had the motivation for this historic agreement. The KHSA and other related agreements are discussed further, in Part VII.

## VII. THE AGREEMENTS TO REMOVE THE DAMS

In light of the costly conditions issued by the fisheries agencies and BLM under their FPA mandatory conditioning authority,<sup>255</sup> it became clear that the Klamath dams had become “toxic assets” for PacifiCorp.<sup>256</sup> The 2005 EPAct had been enacted between PacifiCorp’s 2004 relicensing application and the agencies’ 2006 issuance of their prescriptions and conditions, giving PacifiCorp access to an administrative hearing mechanism that would allow it to challenge the factual bases for the prescriptions and conditions.<sup>257</sup> PacifiCorp’s use of this procedure led to a hearing, but its efforts were almost entirely unsuccessful: the Administrative Law Judge (ALJ) upheld twelve of the fourteen conditions and prescriptions

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<sup>255</sup> See *supra* footnotes 258–62 and accompanying text.

<sup>256</sup> Schwartz, *supra* note 82.

<sup>257</sup> FPA, 16 U.S.C. § 811 (2018). The legislation allows license applicants and any party to the licensing proceeding to seek an agency trial-type hearing to resolve any disputed issues of material fact regarding fishway prescriptions prescribed under FPA sections 4(e) and 18. *Id.* Hearings are conducted by the relevant resource agency. *Id.* See also Adell L. Amos, *Dam Removal and Hydropower Production in the United States Ushering in a New Era*, 29 J. ENV’T L. & LITIG. 1, 23 (2014) (noting Congress enacted the EPAct between PacifiCorp’s 2004 relicensing application and federal agencies’ submissions of conditions and prescriptions for the Klamath dams). The hydropower industry had fought to get rid of FPA sections 4(e) and 18 altogether, but the best they could accomplish was the establishment of these procedures. See Adell Louise Amos, *Hydropower Reform and the Impact of the Energy Policy Act of 2005 on the Klamath Basin: Renewed Optimism or Same Old Song?*, 22 J. ENV’T LAW & LITIG. 1, 10 (2007) (discussing the hydropower industry’s years of attempt seeking legislation to weaken FPA sections 4(e) and 18, ultimately leading to the administrative hearing process provided in the 2005 EPAct). The procedures allow hydropower industry attorneys an opportunity to cross-examine conditioning officials in formal hearings in the hope of showing the conditions to be unreasonable, *see id.* at 17 (discussing cross-examination), making the relicensing process more time-consuming and expensive. *See id.* at 15 (noting the EPAct hearing procedures are viewed by some as “overly burdensome and cost-prohibitive”). The EPAct also allowed the license applicant or any party to the licensing proceeding to propose alternative conditions or prescriptions. See FPA, 16 U.S.C. § 823(d) (2018). But ultimately, the final decision still rests with the federal land managers or fishery agencies. *See id.*

submitted by the agencies, and FERC later conditioned a new license on the construction of fish ladders on the dams as recommended by the agencies.<sup>258</sup> Faced with a choice between the costly retrofitting of the dams for fish passage, and the possibility of dam removal at about half the price,<sup>259</sup> PacifiCorp initiated settlement discussions with a group of stakeholders in hopes of resolving the issues surrounding relicensing.<sup>260</sup> Facilitated by the federal government,<sup>261</sup> these settlement discussions eventually led to two agreements signed in January 2010: the Klamath Basin Restoration Agreement (KBRA) and the Klamath Basin Hydroelectric Settlement Agreement (KHSA).<sup>262</sup>

More than forty parties agreed to the KBRA, including state agencies from California and Oregon, the Klamath Tribes, the Karuk Tribe, the Yurok Tribe, several counties in California and Oregon, multiple parties related to the Klamath Reclamation Project, irrigators, and several conservation and outdoor recreation organizations.<sup>263</sup> The stated goals of the KBRA were to:

(i) restore and sustain natural production and provide for Full Participation in Harvest Opportunities of Fish Species throughout the Klamath Basin; (ii) establish reliable water and power supplies which sustain agricultural uses and communities and National Wildlife Refuges; (iii) contribute to the public welfare and the sustainability of all Klamath Basin communities through these and other measures provided herein . . . .<sup>264</sup>

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<sup>258</sup> *Id.* at 24.

<sup>259</sup> *See* notes 252–54 and accompanying text, *supra*.

<sup>260</sup> *Klamath River*, PACIFICORP, <https://www.pacificcorp.com/energy/hydro/klamath-river.html> (last visited Jan. 4, 2022).

<sup>261</sup> CRS KBSA REPORT, *supra* note 244, at 5.

<sup>262</sup> *Id.*

<sup>263</sup> Klamath Basin Restoration Agreement for the Sustainability of Public and Trust Resources and Affected Communities 1–2 (Feb. 18, 2010), <https://klamathrenewal.org/wp-content/uploads/2020/07/Klamath-Basin-Restoration-Agreement-2-18-10.pdf> [hereinafter KBRA].

<sup>264</sup> *Id.* at 4.

More specifically, the project was a type of water agreement in which the parties agreed to support diversions for irrigators and federal wildlife refuges that correlated to a given year's forecast inflows into Upper Klamath Lake, with surplus flows not otherwise subject to valid water rights allocated to other uses, such as instream flows.<sup>265</sup> Holders of existing diversionary water rights did not, however, abandon those rights,<sup>266</sup> thus retaining their right to claim compensation for a takings due to any reallocation imposed by the KBRA.

To address the concerns of environmental interests, the KBRA provided additional federal and state funding for fisheries restoration<sup>267</sup> and to purchase and retire existing water rights,<sup>268</sup> allowed some of the surplus flows to support environmental concerns,<sup>269</sup> and provided assurances for dam removal under the KHSA.<sup>270</sup> The three tribes who were party to the agreement offered their support and agreed not to make a “call” on certain water rights<sup>271</sup> in exchange for various restoration actions, federal restoration of fisheries, and economic

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<sup>265</sup> CRS KBSA REPORT, *supra* note 244, at 5.

<sup>266</sup> KBRA, *supra* note 263, at E.15.

<sup>267</sup> *Id.* at 34–49.

<sup>268</sup> *Id.* at 107–11.

<sup>269</sup> *Id.* at 142–43.

<sup>270</sup> *Id.* at 96.

<sup>271</sup> Beginning in the 1970s and still pending today, Oregon undertook a water rights adjudication to resolve uncertainties about quantification and priority dates of water rights in the Klamath Basin. CRS, *supra* note 269 at 4. The agency with primary responsibility for the adjudication, the Oregon Water Resources Department (OWRD) filed final findings with the state court in 2013 which found, among other things, that the most senior claims are those held in trust by the United States for the Klamath Tribes. *Id.* In the summer of 2013, the Tribes made a “call” on these rights for the first time, leading to reduced water supplies for irrigators and prompting protests from farmers and ranchers and the decision by Klamath County to pull out of the settlement agreements. *See* McCool, *supra* note 27, at 98. The Tribes have made several additional calls on their water rights since, including one in March 2021. News Release, Oregon Water Resources Dep't, *Water Resources Department to Begin Water Regulation in Portions of the Klamath Basin*, [https://www.oregon.gov/owrd/newsroom/WRDNewsRoom/21-01\\_Regulation\\_to\\_Begin\\_Klamath\\_Basin.pdf](https://www.oregon.gov/owrd/newsroom/WRDNewsRoom/21-01_Regulation_to_Begin_Klamath_Basin.pdf) (March 12, 2021).

aid.<sup>272</sup> The agreement also promised finding to area irrigators to develop low-cost power to replace that previously generated by the Klamath dams.<sup>273</sup>

As originally enacted, the KHSA laid a roadmap for the eventual removal of the four Klamath dams, including “additional studies, environmental review, and, following the passage of federal legislation, a decision by the Secretary of the Interior regarding whether removal of [the dams’] should proceed.”<sup>274</sup> The parties to the KHSA agreed to it in conjunction with the KBRA, and the parties to both understood that the two agreements were complementary and assumed they would not proceed independently.<sup>275</sup>

Both the 2010 KHSA and the KBRA required congressional consent and funding to be implemented in full.<sup>276</sup> The original deadline was set for 2012, but was later extended to 2014, and then 2015.<sup>277</sup> In 2014, Oregon Democratic Senators Ron Wyden and Jeff Merkley and California Democratic Senators Barbara Boxer and Dianne Feinstein introduced a bill in Congress to authorize the KHSA, KBRA, and a third settlement, the Upper Klamath Basin Settlement Agreement.<sup>278</sup> But recent conflicts in the Klamath Basin spurred opposition to the agreements in Congress and from local representatives, particularly a protest over a decision of the state’s water resources department in a water rights adjudication that concluded the Klamath Tribes’ water rights were the most senior in the basin, leading to reduced water

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<sup>272</sup> CRS KBSA REPORT, *supra* note 244, at 6.

<sup>273</sup> *Id.*

<sup>274</sup> PACIFICORP, KLAMATH HYDROELECTRIC SETTLEMENT AGREEMENT IMPLEMENTATION REPORT 1 (2018), [https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/klamath-river/khsa-implementation/implementation-plans/2018-KHSA\\_ImpRptF\\_8-24-18.pdf](https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/klamath-river/khsa-implementation/implementation-plans/2018-KHSA_ImpRptF_8-24-18.pdf).

<sup>275</sup> *Id.* at 5.

<sup>276</sup> *Id.* at 7.

<sup>277</sup> McCool, *supra* note 27, at 98.

<sup>278</sup> See PACIFICORP, *supra* note 274, at 11. The Upper Klamath Basin Settlement Agreement attempted to resolve several outstanding issues following the other two agreements, particularly surrounding water rights, power for irrigators, and the cost of the other two agreements. CRS, *supra* note 261, at 8.

supplies for irrigators in the dry summer of 2013.<sup>279</sup> The Senate Energy and Natural Resources Committee recommended passage of the bill, but the Senate failed to act on the bill before the end of the congressional session in 2014.<sup>280</sup>

In 2015, Senator Wyden reintroduced the bill, with an authorization deadline of December of that year.<sup>281</sup> The bill was defeated, with opposition led by Oregon Republican Congressman Greg Walden.<sup>282</sup> Walden opposed any settlement that included dam removal<sup>283</sup> and drafted a competing bill that did not include dam removal but added unrelated provisions that would transfer national forest land to local counties as a poison pill.<sup>284</sup> The impasse between the Senate bill and Walden’s House bill doomed all three settlements.<sup>285</sup>

Congress’s failure to meet the agreements’ 2015 authorization deadline triggered the KHSA’s dispute resolution procedures.<sup>286</sup> After extensive dispute resolution meetings, in 2016 Oregon, California, the Departments of Interior and Commerce, and PacifiCorp proposed an amended KHSA “that would eliminate the need for federal legislation and instead achieve dam removal through a license transfer and surrender process.”<sup>287</sup> The amended KHSA also

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<sup>279</sup> See discussion *supra* note 271.

<sup>280</sup> PACIFICORP, *supra* note 274, at 11.

<sup>281</sup> *Klamath basin Water Recovery and Economic Restoration Act of 2016*, 114th Cong. 1st Sess., 8 January 2015; see also McCool, *supra* note 271, at 99.

<sup>282</sup> McCool, *supra* note 271, at 99.

<sup>283</sup> *Id.*

<sup>284</sup> *Id.*

<sup>285</sup> *Id.*

<sup>286</sup> *Order Amending License and Deferring Consideration of Transfer Application*, 162 FERC ¶ 61,236 at P. 9 (March 15, 2018). The KHSA requires a party claiming a dispute to give notice of the dispute. Klamath Hydroelectric Settlement Agreement, as amended April 6, 2016 & Nov. 30, 2016, at 52 [hereinafter, Amended KHSA]. The disputing parties must then hold at least two informal meetings to resolve the dispute. *Id.* If the dispute is not resolved, the disputing parties can agree to mediation. *Id.* Once the dispute is resolved, the disputing parties must provide notice of the results of the process and promptly implement any agreed resolution. *Id.* These procedures do not, however, preclude the parties from seeking other remedies, so long as they provide a “dispute initiation notice” and, to the extent practicable, pursue dispute resolution through the KHSA’s procedures prior to seeking another remedy. *Id.* at 51.

<sup>287</sup> *Id.*

designated Klamath River Renewal Corporation (KRRC), a nonprofit organization formed by the agreement signatories for the purposes of restoring the Klamath Basin, as the “Dam Removal Entity,” endowing it with the responsibility of removing the dams under the amended KHSA. The parties — PacifiCorp, California, Oregon, Interior, NMFS, the Yurok Tribe, and the Karuk Tribe— executed the amended KHSA on April 6, 2016.

Unlike the KHSA, the KBRA was not revived after Congress’s failure to authorize it by its expiration date.<sup>288</sup> Its demise untethered the amended KHSA from the KBRA, which was denigrated by some conservation groups as “a wildly expensive and controversial water deal.”<sup>289</sup> Without the need for congressional action, the amended KHSA has allowed the dam removal process to move forward. Where the 2010 agreements would have required \$800 million in federal funding to remove the dams and implement their water deals, the amended KHSA provides for funding from three sources: 1) a surcharge on PacifiCorp’s Oregon customers; 2) a surcharge on PacifiCorp’s California customers; and 3) a California Bond Measure.<sup>290</sup> The contribution from the states is capped at \$450 million, which the parties estimate will be more than sufficient to fund the removal of the dams.<sup>291</sup>

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<sup>288</sup> See *Quick Guide to Klamath Agreements*, KLAMATH RIVER RENEWAL CORPORATION, <https://klamathrenewal.org/settlement-agreements/> (last visited Jan. 4, 2022) (listing the KBRA as an “Inactive Agreement” and explaining its 2015 expiration).

<sup>289</sup> Paige Blankenbuehler, *On the Klamath, a surprising win for river advocates*, HIGH COUNTRY NEWS (Feb. 5, 2016), <https://www.hcn.org/articles/how-conservatives-handed-environmentalists-what-they-wanted-klamath-dam-removal-without-concessions>.

<sup>290</sup> Amended KHSA, *supra* note 286, at 15–16.

<sup>291</sup> *Order Approving Partial Transfer of License, Lifting Stay of Order Amending License, and Denying Motion for Clarification and Motion to Dismiss*, 172 FERC ¶ 61,062 at P. 52 (July 16, 2020).

In 2020, California, Oregon, the Yurok Tribe, the Karuk Tribe, PacifiCorp, and KRRC entered into a Memorandum of Agreement (MOA) describing how they will implement the amended KHSA.<sup>292</sup> The MOA and its origins are discussed in the next Part.

#### VIII. THE 2020 MEMORANDUM OF AGREEMENT

The amended KHSA removed the fate of the Klamath dams from the hands of Congress and placed it squarely with FERC, California, Oregon, PacifiCorp, and KRRC: in order for the dams to be removed under the amended KHSA, the parties must successfully complete FERC's license transfer and surrender process.<sup>293</sup> The parties to the amended KHSA took a major step forward in this process in September 2016, when PacifiCorp and KRRC filed an application to amend the KHP license to administratively remove the four dams from the license and place them into a new license for what would be known as the "Lower Klamath Project," and then to transfer that license from PacifiCorp to KRRC.<sup>294</sup>

In June 2020, FERC approved a partial transfer of the Lower Klamath Project license to KRRC, but made the transfer contingent on PacifiCorp remaining on as a co-licensee. FERC was concerned that given the size of the decommissioning and removal project, the uncertainties around the final design and execution of the project, and the risks to public safety and the environment from dam removal, KRRC may not have the funding or expertise to successfully complete the proposed project.<sup>295</sup> Requiring PacifiCorp to remain as a co-licensee would be in the public interest, according to FERC, as the arrangement would allow

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<sup>292</sup> Press Release, Office of Governor Gavin Newsom, Gavin Newsom, Oregon Governor Brown, Tribal Leaders and Klamath Dam Owner Announce Agreement to Advance Historic Salmon Restoration Plan (Nov. 17, 2020), <https://www.gov.ca.gov/2020/11/17/governor-newsom-oregon-governor-brown-tribal-leaders-and-klamath-dam-owner-announce-agreement-to-advance-historic-salmon-restoration-plan/>.

<sup>293</sup> Amended KHSA, *supra* note 286, at 35.

<sup>294</sup> June 2021 Transfer Order, *supra* note 29, at P. 7.

<sup>295</sup> *Id.* at P. 11 (internal quotations omitted).

PacifiCorp to provide legal and technical support while ensuring that sufficient funding would be available to complete the decommissioning.<sup>296</sup>

But PacifiCorp and the other parties to the amended KHSA were not satisfied with this arrangement. The amended KHSA called for the transfer of the license from PacifiCorp to KRRC. The main appeal of the amended KHSA for PacifiCorp was the financial certainty the license transfer would present: the transfer would protect PacifiCorp from any liability for damages caused by the dams' removal, and the cost cap contained in the amended KHSA meant PacifiCorp's customers were assured of "prudent and reasonable long-term utility rates."<sup>297</sup> PacifiCorp considered these benefits from the amended KHSA to be central to the utility's willingness to voluntarily transfer the dams for removal.<sup>298</sup> The parties therefore began discussions on how best to move forward, leading them to enter a Memorandum of Agreement (MOA) in November 2020. Despite their absence from the FERC proceedings, the Karuk and Yurok Tribes joined PacifiCorp, Oregon, California, and KRRC in the MOA.<sup>299</sup> In the MOA, the parties commit to removal of the dams and the restoration of a free-flowing Klamath River with viable fish passage.<sup>300</sup>

The core of the MOA calls for the states to become co-licensees with KRRC in order to relieve PacifiCorp of that responsibility, while addressing FERC's concerns about KRRC's ability to complete the decommissioning as a sole licensee.<sup>301</sup> The parties agreed, among other

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<sup>296</sup> *Id.*

<sup>297</sup> Amended KHSA at 2.

<sup>298</sup> *Id.*

<sup>299</sup> Memorandum of Agreement (Nov. 2020), <https://klamathrenewal.org/wp-content/uploads/2020/11/Klamath-MOA.pdf> [hereinafter 2020 MOA]. Of note, the MOA begins with a recognition of the importance of the Klamath River to the Klamath Basin Tribes and an acknowledgement that the tribes have depended on these resources since time immemorial. *Id.* at 1.

<sup>300</sup> *Id.*

<sup>301</sup> *Id.* at 2–4.



things, that KRRC and PacifiCorp would file an amended license surrender application notifying FERC that PacifiCorp would not accept status as a co-licensee and instead proposing that the states become co-licensees with KRRC.<sup>302</sup> The MOA also added more contingency funding to help assure FERC that sufficient funding would be available to complete the decommissioning.<sup>303</sup> Although the parties continued to assert that the cost of the Lower Klamath Hydroelectric Project would not likely exceed the \$450 million allocated in the Amended KHSA, they offered an additional contingency funding of \$45 million to ensure the dam removal would be completed and further agreed to share equally in any additional costs.<sup>304</sup>

The MOA and the new applications for transfer apparently assuaged FERC's concerns, because in June 2021 FERC approved the transfer of the license for the Lower Klamath Hydroelectric Project from PacifiCorp to KRRC, California, and Oregon as co-licensees.<sup>305</sup> FERC explained that a transfer may be approved if the applicant shows that the "transferee is qualified to hold the license and operate the project, and that a transfer is in the public interest."<sup>306</sup> Although the previous application to transfer the license in full to KRRC was not, according to FERC, in the public interest due to FERC's concerns that KRRC alone had the legal and technical expertise of funding to complete the decommissioning, as well FERC's reluctance to allow PacifiCorp to relieve itself of all liability for the decommissioning,<sup>307</sup> the new application—adding the states as co-licensees in lieu of

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<sup>302</sup> *Id.*

<sup>303</sup> *Id.* at 4.

<sup>304</sup> *Id.*

<sup>305</sup> June 2021 Transfer Order at P. 46.

<sup>306</sup> *Id.* at P. 28.

<sup>307</sup> *Id.* at P. 30.

PacifiCorp—adequately addressed these concerns,<sup>308</sup> given the states’ extensive experience with large infrastructure, including dam removal.<sup>309</sup> Further, FERC decided that PacifiCorp’s commitment to provide additional funding relieved FERC’s concerns about PacifiCorp fully escaping liability.<sup>310</sup>

As of April 2022, FERC had yet to approve the KRRC and PacifiCorp’s amended license surrender application, but in the MOA the parties estimated that such an order might come during the first quarter of 2022, allowing for the dam removal process to begin in 2023.<sup>311</sup> That timeline did not materialized, as FERC released a February 2022 draft environmental impact statement (DEIS) endorsing license surrender and decommissioning in February 2022.<sup>312</sup> FERC has not yet stated when it expects to release its final Environmental Impact Statement (FEIS) for the license surrender and decommissioning, it will likely be after the MOA’s estimate timeline. Although removal could still begin in 2023, a more likely scenario now is 2024.<sup>313</sup> Timing aside, the DEIS pointed in the direction of dam removal because FERC recommended both license surrender and decommissioning with the inclusion of all of KRRC and PacifiCorp’s proposed mitigation measures, along with the conditions from the water quality certifications issued by California and Oregon and the biological opinions of NMFS and FWS, and additional recommendations from FERC’s staff.<sup>314</sup> FERC

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<sup>308</sup> *Id.* at P. 31.

<sup>309</sup> *Id.* at P. 16.

<sup>310</sup> *Id.* at P. 31.

<sup>311</sup> 2020 MOA, *supra* note 299, at Attachment A.

<sup>312</sup> FEDERAL ENERGY REGULATORY COMM’N, DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR HYDROPOWER LICENSE SURRENDER AND DECOMMISSIONING—FERC PROJECT NOS. 14803-001 & 2082-063 (Feb. 2022) [hereinafter FERC DEIS].

<sup>313</sup> Gilliam Flaccus, *Major hurdle cleared in plan to demolish 4 Klamath River dams*, OREGON PUBLIC BROADCASTING (Feb. 26, 2022), <https://www.opb.org/article/2022/02/26/major-hurdle-cleared-in-plan-to-demolish-4-klamath-river-dams/>.

<sup>314</sup> *Id.* at xxxv, xli.

suggested that this resolution will adequately protect environmental and restore environmental resources, maximize benefits to the chinook salmon fishery, and restore the landscape to a more natural state.<sup>315</sup> FERC also found that any adverse environmental effects and loss of power generation would be outweighed by the long-term benefits of decommissioning.<sup>316</sup> Barring any extraordinary developments, the Klamath dams appear poised for decommissioning and removal in the near future.

## IX. CONCLUSION

The FPA has led to dam removals throughout the country,<sup>317</sup> and the removal of the Klamath dams would be the largest so far of any dam removal in the history of the United States.<sup>318</sup> Yet, the importance of the FPA and § 401 of the CWA as environmental remediation provisions—interjecting environmental pluralism through shared decisionmaking on hydropower licensing with federal land managers and fishery agencies and state water quality agencies—is often overlooked.<sup>319</sup> The licensing process is time-consuming, and its effects enduring due to the lengthy terms of hydropower licenses.<sup>320</sup> The proper exercise of conditioning authority should be a function of ecological studies which

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<sup>315</sup> *Id.* at xli.

<sup>316</sup> *Id.*

<sup>317</sup> See Blumm & Erickson, *supra* note 115, at 1061–66 (discussing the removal of the Condit dam from the White Salmon River in Washington after the dam operator, PacifiCorp, determined that installing the permanent fish passage facilities FERC required before relicensing the dam would render continued dam operations uneconomical), 1067–71 (discussing the process by which Portland General Electric surrendered the license to operate the Marmot and Sandy dams from the Sandy River in Oregon after determining that the conditions and prescriptions required for FERC relicensing would make continued operation of the dams uneconomical). See also Peter J. Carney, *Dam Removal: Evolving Federal Policy Opens A New Avenue of Fisheries and Ecosystem Management*, 5 OCEAN & COASTAL L.J. 309, 324–26 (2000) (discussing FERC’s decision to deny the relicensing application for the Edwards dam on Maine’s Kennebec River and recommend removal of the dam, reasoning that continued dam operations would be incompatible with § 10 of the FPA).

<sup>318</sup> Alexander Matthews, *The largest dam-removal in US history*, BBC (Nov. 10, 2020), <https://www.bbc.com/future/article/20201110-the-largest-dam-removal-project-in-american-history>.

<sup>319</sup> See discussion *infra* Part VI.

<sup>320</sup> FPA, 16 U.S.C. §§ 799, 808(e) (2018).

the licensing process should trigger, perhaps via NEPA procedures. Proponents of dam removal therefore need be artful in identifying federal and state officials with conditioning authority and marshal public support.

The 2020 MOA and FERC's subsequent approval of the license transfer application in 2021 were hailed by supporters of dam removal via the FERC license transfer and surrender process as a great victory for the Klamath River basin.<sup>321</sup> The release of the 2022 DEIS likewise was welcomed as further affirmation of the importance of dam removal for fisheries restoration and improved water quality.<sup>322</sup> If FERC grants the surrender license, the removal of the Klamath dams will open over 400 miles of habitat to spawning and rearing of salmon and other anadromous fish and improving water quality and temperature conditions on the Klamath River.<sup>323</sup>

There does not seem to be much reason to doubt that FERC will approve the surrender application with the modifications recommended in the DEIS. FERC's receptiveness to the 2020 MOA as a remedy for its concerns regarding transferring the license in full to KRRC

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<sup>321</sup> See, e.g. *Removal of Klamath Dams to Restore River Basin*, CALIFORNIA TROUT (April 27, 2021), <https://caltrout.org/news/removal-of-klamath-dams-to-restore-river-basin>; *FERC approves transfer of Klamath River dams*, FARM PROGRESS (June 17, 2021), <https://www.farmprogress.com/water/ferc-approves-transfer-klamath-river-dams>; *Klamath Parties Announce Memorandum of Agreement to Continue Klamath Dam Removal*, HYDROPOWER REFORM COALITION (Nov. 17, 2020), <https://hydroreform.org/2020/11/klamath-parties-announce-memorandum-of-agreement-to-continue-klamath-dam-removal/>.

<sup>322</sup> See Thadeus Greenon, *Feds Release Klamath Dam Removal Environmental Document*, NORTH COAST JOURNAL (Feb. 25, 2022 1:43 PM), <https://www.northcoastjournal.com/NewsBlog/archives/2022/02/25/feds-release-klamath-dam-removal-environmental-document#:~:text=Dam%20removal%20is%20a%20huge,a%20final%20EIS%20and%20approval.> In response to the announcement of the completion of the DEIS, Yurok Vice Chair Frankie Myers stated that the Yurok Tribe's "culture and . . . fisheries are hanging in the balance. We are ready to start work on dam removal this year." *Id.* Chair of the Karuk Tribe Russell "Buster" Attebery noted that dam removal will be "the biggest salmon restoration project in history," that it is "desperately needed," and that it gives him "hope that [his] grandchildren will be able to fish for the family dinner the way [he] did when [he] was a kid." *Id.*

<sup>323</sup> See Dan Bacher, *Removal of four PacifiCorp dams on Klamath River slated to begin in early 2023*, RED GREEN AND BLUE (Nov. 19, 2021), <http://redgreenandblue.org/2021/11/19/removal-four-pacificcorp-dams-klamath-river-slated-begin-early-2023/>.

suggests that the Commission is open to dialogue with the parties to explore different options. The removal has already received CWA § 401 certifications from both California and Oregon, so the largest remaining hurdle is the completion of the NEPA analysis.<sup>324</sup> But the recommended action in the DEIS bodes well for the remainder of this process, as FERC accepts comments and completes its FEIS, particularly because this will be the fourth time the project, in some form, has gone through the NEPA process.<sup>325</sup> The parties have thus built up a large record in support of surrender and removal.<sup>326</sup> Further, what little electric power is currently produced by the four dams would be more than offset by power generated by new wind farms,<sup>327</sup> and PacifiCorp also plans to add additional solar resources to its portfolio.<sup>328</sup> FERC should therefore have no qualms about the effects of removing the dams' contributions from the grid.<sup>329</sup>

Dam removal does, however, come with some risks that might give FERC pause, or perhaps inspire litigation from dam removal opponents in the event that FERC does approve the license surrender application. Massive amounts of sediment have been building up behind

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<sup>324</sup> See Isabella Vanderheiden, *Klamath dam removal on track to begin early 2023*, TIMES STANDARD (Nov. 13, 2021), <https://www.times-standard.com/2021/11/13/klamath-dam-removal-on-track-to-begin-early-2023/>.

<sup>325</sup> See *id.* (quoting Glen Spain, the Northwest regional director of the Pacific Coast Federations of Fishermen's Associations: "We have this massive record that says that dam removal is not only possible but a good move for the ratepayers, a good move for the company, it won't have any major impacts that can't be mitigated, it will have impacts and there are mitigations for all those impacts available.").

<sup>326</sup> See *id.* (quoting Glen Spain, the northwest regional director of the Pacific Coast Federation of Fishermen: "We have this massive record that says that dam removal is not only possible but a good move for the ratepayers, a good move for the company, it won't have any major impacts that can't be mitigated, it will have impacts and there are mitigations for all those impacts available.").

<sup>327</sup> See Brian Oaster, *Will Klamath salmon outlast the dam removal process?*, HIGH COUNTRY NEWS (Aug. 17, 2021), <https://www.hcn.org/issues/53.9/indigenous-affairs-dams-will-klamath-salmon-outlast-the-dam-removal-process>.

<sup>328</sup> CALIFORNIA WATER BOARDS, DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE LOWER KLAMATH PROJECT LICENSE SURRENDER, VOLUME I 3-279 (2018), [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_quality\\_cert/docs/lower\\_klamath\\_ferc14803\\_deir/title\\_toc.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/docs/lower_klamath_ferc14803_deir/title_toc.pdf).

<sup>329</sup> See Brian Oaster, *Will Klamath salmon outlast the dam removal process?*, HIGH COUNTRY NEWS (Aug. 17, 2021), <https://www.hcn.org/issues/53.9/indigenous-affairs-dams-will-klamath-salmon-outlast-the-dam-removal-process>.

these dams since the completion of Copco 1 in 1918, and removing these dams will mobilize these sediments.<sup>330</sup> In addition to increasing turbidity in the river and its tributaries, which can disrupt fish migrations and fill the small spaces in the substrate where fish embryos incubate, the sediment may contain toxic materials such as mercury<sup>331</sup> and polychlorinated biphenyls (PCBs).<sup>332</sup> Once suspended in the water column, these toxins may contaminate food webs,<sup>333</sup> prompting both ecological and public health concerns. Dam removal can also temporarily reduce spawning and rearing habitat immediately downstream, and spread disease from species once isolated by dams to species further downstream.<sup>334</sup> At least one study, however, has found that the benefits of removing the Klamath River dams, such as improvement in water quality and increased access to spawning and rearing habitat, will outweigh these potential costs.<sup>335</sup> And in its DEIS for license surrender and decommissioning, FERC concluded that while the mobilization of sediments may cause some short-term adverse effects, in the long-term the effects would actually be beneficial, as the mobilization would help restore the natural geomorphology and natural sediment transport processes of certain parts of the Klamath basin.<sup>336</sup> In other areas, adverse effects from sediment mobilization would be minimized by mitigation measures.<sup>337</sup>

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<sup>330</sup> Rebecca M. Quiñones et al., *Dam removal and anadromous salmonid (Oncorhynchus spp.) conservation in California*, 25 REV. FISH BIO. FISHERIES 195, 199 (2015); see also FERC DEIS, *supra* note 312, at 3-11 (discussing effects from mobilization of sediments following dam removal).

<sup>331</sup> See Quiñones, *supra* note 330, at 199.

<sup>332</sup> Emily H. Stanley & Martin W. Doyle, *Trading off: The Ecological Effects of Dam Removal*, 1 FRONTIERS IN ECOLOGY AND THE ENV'T 15, 18 (2003).

<sup>333</sup> See Quiñones, *supra* note 330, at 199.

<sup>334</sup> See *id.* at 200.

<sup>335</sup> See *id.* at 209.

<sup>336</sup> FERC DEIS, *supra* note 312, at 3-14, 3-15.

<sup>337</sup> *Id.* at 3-16–17.

Most of the risks of dam removal will be temporary, as the excess suspended sediment will likely be cleared by the high flows resulting from dam removal within one year,<sup>338</sup> and sediment transport rates can return to background levels within months, or even weeks.<sup>339</sup> Even a worst-case scenario for salmon would be a one-time loss potentially resulting in reductions in adult fall-run chinook spawners three and four years following dam removal.<sup>340</sup> A full recovery for the salmon can be expected within five years of dam removal,<sup>341</sup> perhaps sooner when factoring in the active restoration efforts KRRC plans to undertake.

A more disconcerting question is whether the removal of the Klamath dams will be enough to save its salmon, or if all of this effort will be too little too late. Spring 2021 saw yet another massive fish kill resulting from disease spread widely and easily amid drought conditions and increased water temperatures.<sup>342</sup> Although at present experts generally agree that the Klamath salmon, being highly resilient creatures, will survive, the ecosystem stands at the edge of a dangerous cliff.<sup>343</sup> FERC must act expediently if the removal project is to remain on track for a 2023 removal.<sup>344</sup>

But the success of the removal of the Edwards dam from Maine's Kennebec River in 1999 provides significant hope that the removal of the Klamath dams will be the turning point the Klamath basin needs. Almost immediately following the removal of the Edwards dam,

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<sup>338</sup> See Quiñones, *supra* note 330, at 209.

<sup>339</sup> M.M. Foley et al., *Dam removal: Listening in*, 53 WATER RESOURCES RES. 5229, 5234 (2017).

<sup>340</sup> See Quiñones, *supra* note 330, at 209.

<sup>341</sup> See *id.*

<sup>342</sup> Oaster, *supra* note 329.

<sup>343</sup> See *id.* As Mike Belchik, the Yurok Tribe's senior water policy analyst, put it, "If we have one more event, then we're really screwed here." *Id.*

<sup>344</sup> See *id.* A timely start to the removal is crucial, as it must happen in the winter, after the fall runs and before the spring out-migration. *Id.* Otherwise, the release of sediment from behind the dams could smother salmon eggs and suffocate juveniles. *Id.*

native fish re-populated upstream areas previously inaccessible to them.<sup>345</sup> A decade after the Edwards dam removal, the Kennebec had become home to the largest migration of alewives on the eastern seaboard, and the restoration of the river's fish benefitted predator populations, and thus the entire food web, as well.<sup>346</sup> Water quality also improved, and the area's human population began recreating on the river and using it as inspiration for economic development.<sup>347</sup> August, Maine, for example, revitalized its riverfront, converting the area once occupied by a textile mill and the dam into a park that hosts numerous community events, including a weekly farmers' market, a boat launch, and a nature trail.<sup>348</sup>

Studies of other river systems after the removal of dams have found similarly promising results regarding ecological recovery in the years following removal. Following the removal of Hemlock Dam from Trout Creek in Washington State, one study found increased quality and quantity of aquatic habitat for fish.<sup>349</sup> And despite an initial lag, likely caused by an initial period of unstable substrate and low substrate heterogeneity immediately following the dam removal, the study found a considerable improvement in benthic macroinvertebrate communities within two years of dam removal.<sup>350</sup> On the Elwha River, the number of salmon redds tripled between the first and third years following the removal of the Elwha Dam.<sup>351</sup>

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<sup>345</sup> Tara Lohan, *How Removing One Maine Dam 20 Years Ago Changed Everything*, THE REVELATOR (Feb. 11, 2019), <https://therevelator.org/edwards-dam-removal/>.

<sup>346</sup> Andrew Fahlund, *River Rebirth: Removing Edwards Dam on Maine's Kennebec River*, NATIONAL GEOGRAPHIC, <https://www.nationalgeographic.com/environment/article/lessons-from-the-field-edwards-dam-removal-maine> (last visited March 13, 2022).

<sup>347</sup> Lohan, *supra* note 345.

<sup>348</sup> Fahlund, *supra* note 346.

<sup>349</sup> S.M. Claeson & B. Coffin, *Physical and Biological Responses to an Alternative Removal Strategy of a Moderate-Sized Dam in Washington, USA*, 32 RIVER RES. APPLIC. 1143, 1151 (2015).

<sup>350</sup> *Id.*

<sup>351</sup> Foley, *supra* note 339, at 5235.



And on the White Salmon River, Pacific lamprey recolonized the basin upstream of where the Condit Dam once blocked upstream passage within four years of dam removal.<sup>352</sup>

The chances of a successful dam removal may also be bolstered by the Yurok Tribe's 2019 resolution declaring rights of personhood for the Klamath River.<sup>353</sup> The resolution enables the river to have its rights adjudicated in Yurok Tribal Court,<sup>354</sup> which can include the prosecution of both tribe members and non-members or entities that violate the river's rights.<sup>355</sup> The Tribe is still in the final stages of developing a more extensive ordinance following the resolution, so has not yet taken action under it.<sup>356</sup> But it could present opportunities to speed dam removal or influence management of the river in the interim.

The removal of the Klamath dams may be a watershed moment for salmon in the Pacific Northwest and the diverse stakeholders who depend on these creatures and a healthy Klamath River for their culture, livelihoods, health, and recreation. The years of process and negotiations endured by dam removal advocates could illuminate a path forward for the removal of more nonfederal hydroelectric dams via the FERC license transfer and surrender process, marking a new era in ecological restoration of the nation's rivers.

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<sup>352</sup> Jeff Jolley et al., *Pacific lamprey recolonization of a Pacific Northwest river following dam removal*, 34 RIVER RES. & APPLICATIONS 44, 48 (2017).

<sup>353</sup> See Anna V. Smith, *The Klamath River now has the legal rights of a person*, HIGH COUNTRY NEWS (Sept. 24, 2019), <https://www.hcn.org/issues/51.18/tribal-affairs-the-klamath-river-now-has-the-legal-rights-of-a-person>.

<sup>354</sup> See Geneva E.B. Thompson, *Codifying the Rights of Nature; The Growing Indigenous Movement*, 59 JUDGES JOURNAL 12 (2020).

<sup>355</sup> See *id.* at 14.

<sup>356</sup> See *id.*

